



# 2024 - 2025

## Annual Report



**Antes, Ahora y Siempre...**



University of Puerto Rico - Mayagüez Campus  
Agustín Rullán Toro, PhD Chancellor

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## List of Acronyms

| Acronym | Definition                                                                                |
|---------|-------------------------------------------------------------------------------------------|
| AACSB   | Association to Advance Collegiate Schools of Business                                     |
| ABET    | Accreditation Board for Engineering and Technology                                        |
| ACBSP   | Accreditation Council for Business Schools and Programs                                   |
| ADEM    | Administración de Empresas (College of Business Administration)                           |
| AES     | Agricultural Experimental Station                                                         |
| ASEE    | American Society for Engineering Education                                                |
| BEDC    | Business and Economic Development Center                                                  |
| CAEP    | Council for the Accreditation of Educator Preparation                                     |
| CAS     | College of Agricultural Sciences                                                          |
| CASEA   | Advisory Committee of the Agricultural Extension Service                                  |
| CAWT    | Center for the Advancement of Wearable                                                    |
| CBA     | College of Business Administration                                                        |
| CED     | Continuous Education Division                                                             |
| CEDIBI  | Center for the Development of Bibliographic Research and Information Skills               |
| CEEF    | Center for Economic and Financial Education                                               |
| CEP     | Center for Professional Enrichment                                                        |
| CETL    | Center of Excellence for Transportation and Logistics                                     |
| CEU     | Continuing Education                                                                      |
| CID     | Research and Development Center                                                           |
| CIE     | Business Research Center                                                                  |
| CIIC    | Department of Computer Science and Engineering                                            |
| CIVIS   | English Writing Center                                                                    |
| COOP    | Cooperative Education Program                                                             |
| CRE     | Electronic Resources Center                                                               |
| CREAD   | Distance Education Resource Center                                                        |
| CRECEN  | Capacitación Estratégica mediante Resiliencia, Competitividad y Expansión en los Negocios |
| CTI     | Information Technology Center                                                             |
| DCSP    | Department of Counseling and Psychological Services                                       |
| DDEC    | Department of Economic Development and Commerce                                           |
| DECEP   | Division of Continuing Education and Professional Studies                                 |
| DEPR    | Puerto Rico Department of Education                                                       |
| DMS     | Department of Marine Sciences                                                             |
| DNRA    | Department of Natural and Environmental Resources                                         |
| DOE     | Department of Energy                                                                      |



| <b>Acronym</b> | <b>Definition</b>                                            |
|----------------|--------------------------------------------------------------|
| DSM            | Department of Medical Services                               |
| EAC            | Engineering Accreditation Commission                         |
| EDA            | Economic Development Administration                          |
| EDUCON         | Educación continua (Continuous Education)                    |
| FCS            | Family and Consumer Sciences                                 |
| FFA            | Future Farmers of America                                    |
| GRIC           | Graduate Research and Innovation Center                      |
| IAP            | Industrial Affiliates Program                                |
| IGS            | General Index of Applications                                |
| INFOMATE       | Institute of Mathematical Strengthening                      |
| INME           | Department of Mechanical Engineering                         |
| INSO           | Department of Software Engineering                           |
| IRB            | Institutional Review Board                                   |
| LV             | ¡Loíza Vive!                                                 |
| MOUs           | Memoranda of Understanding                                   |
| MUSA           | Art Museum                                                   |
| NIFA           | National Institute of Food and Agriculture                   |
| NIH            | National Institute of Health                                 |
| NRCS           | Natural Resources Conservation Service                       |
| NSF            | National Science Foundation                                  |
| OGS            | Office of Graduate Studies.                                  |
| OHL            | Oral History Lab                                             |
| OHRP           | Office for Human Research Protections                        |
| OPIMI          | Planning, Research, and Institutional Improvement Office     |
| OSEI           | Office of Services to Students with Disabilities             |
| PADE           | Profesionalización Acelerada Docentes Departamento Educación |
| PAGM-TAP       | Post Award Grants Management-Technical Assistance Program    |
| PEARS          | Program Evaluation and Reporting System                      |
| PPM            | Teacher Preparation Program                                  |
| PRAES          | Puerto Rico Agricultural Extension Service                   |
| PRDE           | Puerto Rico Department of Education                          |
| PRSN           | PR Seismic Network                                           |
| ROI            | Return on Investment                                         |
| RUMex          | Extended UPRM (Universidad Extendida)                        |
| SOPCA          | Sociedad Puertorriqueña de Ciencias Agrícolas                |
| UPRM           | University of Puerto Rico at Mayagüez Campus                 |
| USPTO          | U.S. Patent and Trademark Office                             |



## **I. University of Puerto Rico at Mayaguez Campus Vision and Mission**

### **Vision**

To be at the forefront as an institution in higher education and research, transforming society through the search for knowledge in an environment of ethics, justice, and peace.

### **Mission**

To provide excellent service to Puerto Rico and the world by:

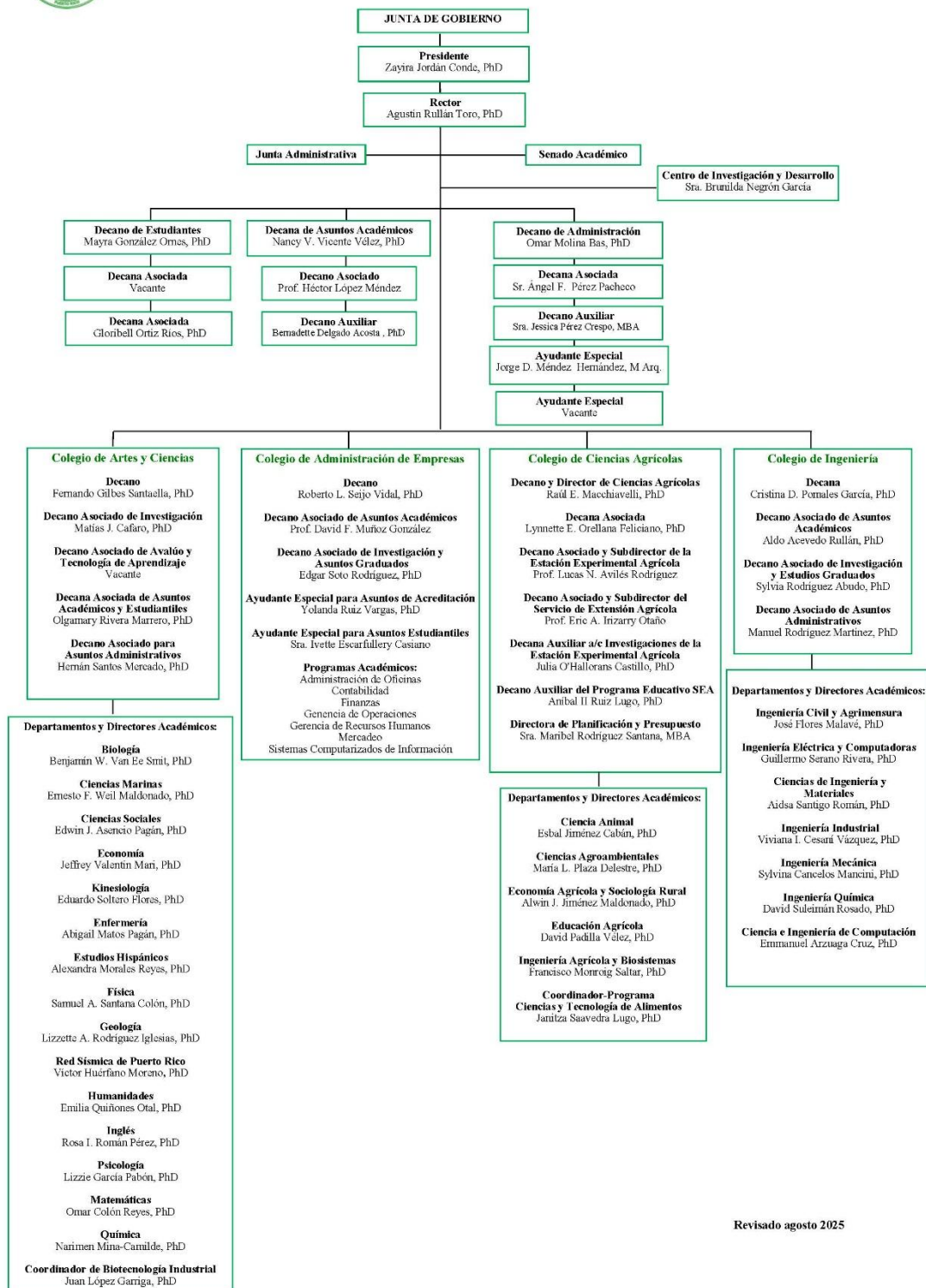
- Forming educated, cultured, capable, critical-thinking citizens professionally prepared in the fields of agricultural sciences, engineering, arts, sciences, and business administration so they may contribute to the educational, cultural, social, technological, and economic development.
- Performing creative work, research, and service to meet society's needs and to make available the results of these activities.

We provide our students with the skills and sensibility needed to effectively address and solve current challenges and to exemplify the values and attitudes that should prevail in a democratic society that treasures and respects diversity.

## II. UPRM Organizational Structure – 2024-2025



Universidad de Puerto Rico  
Recinto Universitario de Mayagüez  
Estructura Organizacional  
Año Fiscal - 2024-2025



Revisado agosto 2025

### III. UPRM Deanships' Executive Summary and Mission

#### A. Deanship of Administration

##### 1. Executive Summary:

During the academic year 2024-2025, the Dean's Office and its nine units have continued to provide services in a coordinated manner to ensure service continuity, following the mission and vision of our deanship. These services include, but are not limited to, facilitating resource usage, ensuring compliance with regulations, and addressing community needs.

The Dean's Office focused its efforts on enhancing and revitalizing the campus's aesthetic appeal, achieving notable progress through resourceful planning and efficient use of available funds. The following list highlights some of the most significant projects completed over the past year:

- Rehabilitation of Plaza de las Fuentes de Eugenio María de Hostos and Bonilla.
- Upgrade to the main sanitary lines serving the Physics, Geology, and Marine Sciences Building, as well as the one serving the Research and Development Center (CID by its Spanish name).
- Road and Parking Area Pavement.
- Pavement marking installation in the CID parking area, Caobos area, and the Buildings and Grounds access road.
- Potable water line repairs.
- Campus signage restoration.
- eMaint Preventive Maintenance Platform Implementation.
- HVAC equipment replacement at MuSA Building.
- Food truck service for the Biology Building.
- Luis C. Monzón electrical substation completion.
- Roof sealing at Isla Magueyes Main Building.
- Quebrada de Oro Cleaning.

The Dean's Office, in direct collaboration with the Planning, Research, and Institutional Improvement Office (OPIMI), advanced various projects that have had a significant positive impact on our campus. Several of these initiatives were also funded by the Office of Physical and Infrastructure Development (ODFI) of the UPR Central Administration. Some of these projects include:

- Electrical Substation Rehabilitation
- Quebrada de Oro Rock Lining System
- Natatorium Pool #2 Rehabilitation
- Civil Engineering Auditorium Renovation
- Restroom Upgrades at Old Athletic Field

In terms of funding opportunities, the Dean's Office continued to pursue initiatives aimed at increasing and diversifying revenue sources to meet the needs of our campus. Initiatives implemented during the year included contracts for vending machines, advertisements, and space leases to provide food services to the University community.

In collaboration with the Grounds and Buildings Department and the Transportation Section, the Dean's Office continued to manage the contracts between the Puerto Rico Highway and Transportation Authority (PRHTA) / Federal Transit Authority (FTA) and UPRM, securing additional funding for the ongoing improvement of the campus public transportation system.

Through UPRM Housing Facilities, Inc., the Dean's Office launched a Request for Proposal (RFP) process for a long-term Concession Lease Project under the Design-Build-Finance-Operate-Maintain (DBFOM) model for the Darlington Building. The proposal was approved under Certification 133 (2024–2025) of the UPR Governing Board.

Additionally, the Dean submitted a proposal for evaluation to establish a new multi-level parking facility, aimed at increasing parking capacity for the university community. For reference go to the Dean's Office Twitter page (@DECADMI UPRM).

## 2. Mission:

Support the entire teaching, learning, and research process:

- Facilitate resource use processes to ensure the best use of resources and compliance with applicable regulations.
- Ensure the proper operation and maintenance of the existing physical plant and infrastructure.
- Oversee the health and safety of the University community.
- Actively support physical plant efforts and infrastructure design and development necessary to meet emerging needs.

## B. Deanship of Students

### 1. Executive Summary:

The Deanship of Student Affairs achieved several milestones across its departments during the 2024-2025 academic year, reflecting a strong commitment to student support and campus development.

- Medical Services: Resumed billing for health insurance plans and secured external funds for projects like Mano Amiga and the Road Safety Commission.

- Counseling and Psychological Services: Centralized operations in the Student Center with a \$1.1 million investment and implemented a pilot project on retention and early alert.
- Placements Office: Hosted the 36th Fall Job Fair with 143 employers attending and secured \$88K for renovations of meeting/interview rooms.
- Social Activities: Reactivated the concert series with international artists like Roy Brown and celebrated the first urban music concert, COLEGIO URBANO.
- Quality of Life Initiatives: Launched a podcast covering health and wellness topics and organized 26 events, including Happy Day Colegial.
- Economic Assistance: Awarded over \$526K in private scholarships and held several FAFSA events in public spaces.
- Band and Orchestra: Celebrated the 110th anniversary of the University Band and participated in multiple high-profile events such as the Pan-American Athletics Championship and the VII Latin American Choir Music Meeting in Panama.
- Office of the Dean: Secured over \$120K in external funding for student services and scholarships, further enhancing the financial support available to students. RUMboEx was a pillar in the successful deployment of the Early Alert System, which played a critical role in supporting first-year students' retention and academic success.

## 2. Mission:

The mission is to provide students with the resources and services necessary to contribute to their physical, social, emotional, cultural, educational, and occupational-professional development, as a complement to their intellectual, academic, and ethical training.

## C. Deanship of Academic Affairs

### 1. Executive Summary:

The Deanship of Academic Affairs advanced the University's mission through coordinated work across its service units. This annual report summarizes major achievements, key performance indicators, and contributions aligned with the institutional strategic plan. Highlights from 2024–2025 include expanded evening/weekend offerings (RUMex), a modernized discovery experience and significant grant funding (General Library), diversified continuing education (DECEP), writing and language support at scale (CIVIS), broad faculty development (CEP), extensive automation and data services (Registrar's Office), leadership development and scholarships (Army ROTC), distance education quality certification and new microcredentials (CREAD), and sustained growth and compliance efforts in graduate education (OGS).

- i. RUMex expanded to 52 courses in Semester I (1,686 students) and 55 in Semester II (1,677 students), yielding departmental savings exceeding \$276,000 and distributing net income (50% Deanship, 25% Departments, 25% Chancellor).
  - ii. General Library recorded 153,669 study-area visits, 7,840 reference consultations, and 1,844 interlibrary loans; offered 9 credit-bearing sections (114 students) and 251 workshops (4,991 participants); secured \$2.12M in OHL-related external grants.
  - iii. DECEP operated self-sufficiently, served K–12 pipelines in partnership with Puerto Rico Department of Education (PRDE), trained 149 teachers (Certíficate y Evolucionaria), and piloted AI training for students.
  - iv. CIVIS supported ~2,000 students across English, Spanish, and French writing centers with in-person and online services.
  - v. CEP hosted 44 activities and accredited 40+ additional offerings for professional enrichment (29 hours for new faculty; 21 hours for new graduate students/instructors).
  - vi. Registrar's Office processed 12,093 digital transcript requests, 3,004 online paper transcript requests, 1,663 digital active student certifications, 1,124 graduation certifications, and 1,313 graduation applications; Fall 2024 enrollment reached 10,616 students.
  - vii. Army ROTC awarded over \$1M in scholarships; maintained >90% retention and 98% four-year graduation rate.
  - viii. CREAD issued the campus's first Quality Certification for a distance academic course and progressed on CRODEMY microcredentials; the decepenlinea portal now surpasses 96 fully online offerings.
  - ix. OGS managed ~860 graduate students, admitted 235, and graduated 138; strengthened processes, metrics, and integrity checks (iThenticate + Scholar@UPRM).
- 

## 2. Mission:

Develops socially responsible, responsive, creative, committed, ethical professionals and leaders with an entrepreneurial spirit and a global focus, and develop creative, research and service work that meets the needs of society. Provides strategic direction and operational support to academic work to offer an education of excellence. Fosters an environment that promotes creativity with innovative and agile programs that incorporate theory and practice. Provides services that help the well-being of our society, our academic community and global economic development. Disseminates the results of creative labor, research, and service activities so that they are accessible to all. Plays an active role in the implementation and development of processes that promote ethics and academic integrity. Continues the appraisal cycles that support the formal processes of institutional investigation and that serve as a basis for the planning and decision-making process.

## D. College of Agricultural Sciences

### 1. Executive Summary:

For the fiscal year 2024-2025, we continued to face significant challenges, as in previous years, due to the budget cuts imposed by the Fiscal Adjustment Plan (PROMESA Federal Law). With the budget reduction at all levels of the UPR university system, the services offered have been seriously affected in the three dimensions of our work: research, teaching, and outreach. On the other hand, we are also affected by the continuous loss of qualified managerial personnel and the lack of resources to hire replacements. As of today, we are still in the process of restoring the damage caused by hurricanes Irma and Maria in 2017, and Fiona in 2022. On the other hand, we are still dealing with delays in research projects caused by the COVID-19 pandemic. However, thanks to the commitment of our human resources, both teaching and non-teaching staff, the Agricultural Experimental Station (AES) continued its research activities. Likewise, the Agricultural Extension Service (PRAES) continued to work diligently to fulfill its mission while improving Strategic Planning and Evaluation processes, restructuring its administrative reporting and monitoring system, and expanding initiatives to strengthen non-formal education. On the other hand, the Faculty of Agricultural Sciences (FAS), through its academic departments, continued its mission to train professionals who can contribute their acquired knowledge to the development of agriculture in our country.

Throughout the 2024–2025 academic year, the College of Agricultural Sciences (CAS) executed a robust calendar of activities focused on student engagement, recruitment, outreach, academic recognition, and community involvement. These efforts reflect the College’s commitment to promoting academic excellence, professional development, and institutional visibility. Highlights include:

#### 1. Student Engagement and Integration

- Welcome Freshman 2024–2025 (August 1, 2024): Introduced incoming students to the administrative personnel and academic departments through targeted orientation sessions.
- Back to the RUM @ CCA (August 29, 2024): Fostered community building among students, faculty, and staff to support the transition of first-year students.
- 802–25 Open House (May 17, 2025): Designed for incoming students starting in August 2025, this event facilitated early engagement and orientation within the College.

#### 2. Student Recognition and Celebration

- Honor Students Recognition Ceremony (February 3, 2025): Celebrated the academic achievements of 135 high-performing students from the 2023–2024 academic year.



- Promotion to Professional Life (June 11, 2025): Activity aimed to graduating students with guidance and resources as they prepared for their transition into the workforce.
  - Celebrating the Holiday Spirit (December 13–20, 2024): A festive activity that encouraged students to share messages of gratitude and build a sense of community.
3. Outreach and Recruitment
- Expo Graduandos, Porta del Sol (October 3–4, 2024): Connected with high school seniors through informative outreach led by the Associate Dean's Office and the Department of Animal Science.
  - Open House UPRM (October 24, 2024): Promoted the College's 13 undergraduate academic programs through departmental presentations and interactive demonstrations.
  - Graduate Studies Open House (February 6, 2025): Offered prospective students detailed information on Master's and doctoral opportunities.
  - Puerto Rico Home Garden Expo (May 2–4, 2025): Engaged the broader community at Plaza Las Américas to increase awareness of CAS academic offerings.
  - Agriculture Week Challenge 2025 (June 16–20, 2025): Introduced high school students to career paths in agricultural sciences via a hands-on summer camp.
4. Academic Enrichment and Institutional Advancement
- Welcome Ceremony – Doctoral Program in Tropical Agriculture (December 3, 2024): Officially welcomed the inaugural cohort of nine doctoral students, marking a milestone in the College's academic expansion.
  - Agro Plug 2025 (March 27–29, 2025): An educational fair organized by students featuring academic exhibits, workshops, and research initiatives.
  - Agro Market (Oct. 17 & Nov. 14, 2024; Feb. 20 & Apr. 3, 2025): Provided entrepreneurial opportunities for students to promote and sell their agricultural products.

Through these comprehensive initiatives, the College of Agricultural Sciences continues to foster academic excellence, community engagement, and the professional development of its students.

In 2024, the Puerto Rico Agricultural Extension Service (PRAES) commemorated its 90th anniversary, celebrating nearly a century of significant contributions to education, community empowerment, and sustainable development. PRAES stands as the sole unit dedicated to non-formal education within both the College of Agricultural Sciences (CAS) and the University of Puerto Rico (UPR) System. Through a robust faculty and a multidisciplinary approach, PRAES employs diverse educational strategies to transfer science-based knowledge beyond traditional academic settings. Its programming

reaches a wide spectrum of audiences—including farmers, youth, families, and community members—to promote healthier lifestyles, sustainable economic and technological practices, and social and environmental transformation, thereby fostering a more resilient and empowered Puerto Rican society. These contributions align directly with Objective 6 of the UPRM Strategic Plan: “To impact Puerto Rican society.”

Each year, PRAES implements two structured island-wide methods—Merit Review and the Stakeholder Input Process (CASEA)—to assess the needs of its target populations. These assessments inform the development of its Annual Plan of Work and guide the design of programs and projects within its four programmatic areas.

This annual report presents the various initiatives, activities, and achievements accomplished during this fiscal year. We express our gratitude to all staff members and personnel for their demonstrated commitment during these challenging times.

## 2. Mission of the College of Agricultural Sciences:

To develop new technologies through education, research, and extension to innovate in the production of agricultural inputs and products for humans and animals through economically viable, sustainable, safe, and global agriculture that contributes to the improvement of the quality of life of society.

### Mission of the Faculty of the Agricultural Sciences:

To develop through education, research, and extension new technologies that innovate in the production of inputs and agricultural products for humans and animals through an economically viable, sustainable, safe, and global agriculture that contributes to the improvement of the quality of life of society.

### Mission of the Puerto Rico Agricultural Extension Service:

To improve the quality of life of people living in socio-economic vulnerability through participatory action via a non-formal education process based on scientific research and focused on the aspirations and needs of families and communities.

### Mission of the Agricultural Experiment Station:

Promote a research program in tropical agriculture that safeguards the sustainability of food production and environmental conservation in Puerto Rico and the Caribbean, improving the quality of life and conservation of natural resources.

## E. College of Engineering

### 1. Executive Summary:

In its more than one hundred years of history, the College of Engineering at the University of Puerto Rico at Mayagüez has established itself as one of the main centers of engineering education in the United States. In the last twenty years, the College of Engineering has begun to strengthen its position in research, an essential complement to strengthen teaching in technical disciplines, while the university has received recognition for the level of activity and quality of research. As stated in the American Society for Engineering Education (ASEE) profiles of Engineering and Engineering Technology publication (2024) the College of Engineering ranks #40 in undergraduate enrollment by school with 4,643 active students, as well as in total number of bachelor degrees awarded in the following programs: Industrial Engineering (Rank #20, N 90), Chemical Engineering (Rank #29, N 77) Computer Engineering (Rank #30, N 65) and Electrical Engineering (Rank #33, N 94). We also rank #3 in total number of degrees awarded to Hispanics (N = 652). During the academic year of 2024-25 the College of Engineering accomplished significant advances centered around leadership and vision, as the college completed the search for a new Dean of Engineering and several department directors. The new dean with her team of associate deans and the Chancellor visited all academic departments to have a conversation about their strengths, opportunities, weaknesses and threats, as well as plans for action. We continued the plan to strengthen the student experience, increasing the quality, quantity, and comfort of the physical spaces available to our students, and improving the pertinence, and quality of our academic programs.

In this section we summarize the most significant achievements. Our activities have been guided by the support of our Industrial Advisory Board, which has 30 active members representing different industrial sectors. During the year we worked on developing a strong social media presence (eg. facebook, linkedin and instagram (ingenieriauprm)) and improving the website for the College of Engineering and the industrial advisory board, along its mission and goals while clearly defining its leadership: <https://www.uprm.edu/engineering/industrial-advisory-board-2/>.

### Undergraduate Programs

During the 2024-2025 academic year we had 4,725 active students in undergraduate programs. We have maintained our student admissions, with 48% of the total enrollment for UPRM and our academic offer has been sustained with support of part time faculty. This year we graduated 577 students within the College of Engineering programs. As part of the continuous improvement processes, we have continued the assessment of student learning outcomes in alignment with our program assessment and accreditation plans for the 2026-

2027 Accreditation Board for Engineering and Technology (ABET) re-accreditation visit. As a result of the assessment process, 8-9 undergraduate programs have undergone significant changes. Many of our curricula were restructured to allow students to graduate in the five years expected by our engineering programs. During the 2024-25 academic year we can present the following achievements:

- approval of a curricular revision for the Computer Engineering bachelor degree, which is pending certification from Central Administration.
- over 500 students enrolled in COOP and internship activities during the academic year
- received authorization from AC to create two new bachelor's degrees in (1) Aerospace Engineering and (2) Sustainability Engineering
- supported the creation of a bachelors in Biosystems Engineering, in collaboration with Agricultural Sciences
- the Department of Computer Science and Engineering (CIIC, per its Spanish name) has completed a new proposal to create stackable credentials in the computer science curriculum with the support from a grant of the Department of Economic Development
- two new minor degrees were created in Sustainability Engineering (pending Senate Approval) and Nuclear Engineering (Approved by Senate).

### Graduate Programs

The College of Engineering continued the development of new graduate programs in areas of high potential for the creation of intellectual capital that will contribute to the formation of a well-prepared human capital, necessary for a fast-paced economy based on innovation and information. During the 2024-2025 academic year we had 237 active students in graduate programs and produced 76 graduate degrees (16 PhD & 60 masters). At the graduate level we can present the following highlights:

- a new MS/PhD program in Software Engineering (INSO, per its Spanish name) will have its first cohort in the fall of 2025.
- the Department of Industrial Engineering has been authorized to create two new graduate doctoral programs (PhD and D.Eng).
- a new 5+1 BS/MS Honors Track, Accelerated Step Program from Baccalaureate to Master's (eMAP), was approved by the Academic Senate with the potential to apply to all UPRM undergraduate programs.

### Academic Laboratories and Facilities

In order to appropriately support our students' learning experience, we continued expanding academic laboratories in the Department of Mechanical Engineering (INME, per its spanish name), the department with the largest increase in admissions from about 200 to 300 students.

To accommodate this growth, we made improvements in Materials, and Thermal Sciences Laboratories. Also, the Civil Engineering amphitheater remodeling will begin in August 2025 with an investment of \$1.5 million and a new maker space will be created in the Material Sciences and Engineering department (S-307). We inaugurated a new location and expansion for the Transportation Laboratory at the Civil Engineering Department. Also, the Center of Excellence for Transportation and Logistics began in January 2025 with a \$10 million donation in 10 years. This Center will be housed at the “Fabrica Modelo” Facilities in the Industrial Engineering Building (II-101). This space will have a new classroom and collaboration facilities as well as research labs and a data observatory space. The facilities for a new standardized testing center with the support of Pearson and the legal agreements are complete. We are in the testing and hiring phase for administrative support. We expect to begin offering services to the community by 2026.

### Student Collaborative Spaces

The College of Engineering achieved significant advances to increase the quantity and quality of our students’ collaborative spaces. Adding to the spaces created in the INME Department a deck was completed in the second-floor student lounge and a new collaborative lounge with an open terrace in the Chemical Engineering Building was completed and inaugurated. A new roof was installed in the Civil Engineering building to allow students to work on their materials laboratory and their special projects 24-7. The special projects facilities (a.k.a. Monkey) and Inspire (Monkey 2) areas have been renovated and are currently being used by over 100 students in special design projects. In these spaces access was improved as well as the completion of a machine shop to support design projects. Some of these improvements have been achieved with the support of donations by companies such as Chevron. An agreement to build a solar powered gazebo under the name of project "luz verde" is in the process of authorization with aims to begin construction by the winter of 2025.

### Research

The design activities for the Aerospace Research Institute, with funding from NIST, has begun. The CENAC building was transferred to Dr. Claribel Acevedo and we are in a process to support a new installation to create a Bio Foundry in those facilities. During this year a total of 95 research proposals were submitted across all departments and 26 new projects were awarded. In 2024-2025 there were 125 active research projects. Our departments reported 4 patents, and 11 invention disclosures. There were 48 publications submitted, 129 presentations and at least 60 peer-reviewed publications published by faculty and students in 2024–2025. Some department highlights include major equipment upgrades supported research in additive manufacturing and energy systems at INME, faculty led proposals in infrastructure, climate resilience, and materials in Civil Engineering, we had over 35 industry-sponsored through the Industrial affiliates

program (IAP) (~\$5,000 each); with focus on research in AI, energy, and embedded systems in Electrical Engineering.

### Outreach

The College of Engineering and its outreach and recruitment team have continued the R2DEEP program offering remote enrollment for talented high school students in engineering and math courses. In 2024-2025 a total of 36 students participated in the program. We also continued offering one-day camps for high school and middle school students as well as the Pre-Engineering Summer Camp. Departments and student societies also supported outreach activities, including the ME Girl Day and AFIM on the Road (INME): engaged 300+ girls in STEM; SEDS, SPARC, and other teams participated in Yuri's Night, NASA Rover Challenge, and EcoExploratorio, reaching thousands of attendees. Other student societies involved in outreach activities include the SWE, SHPE, ASEE, ANS and Pink Pandas. This year all departments hosted open houses, technical workshops, and school visits. Other summer programs include the Research Experience & Mentoring, Research Experience for Teachers, Sustainability Summer Camp, Summer Transportation Institute, UPRM HACKS.

### Faculty Development Program

The College of Engineering continued its faculty development program offering our faculty the opportunity to renew their knowledge and skills by carrying out diverse activities such as taking in-person and remote courses, attending scientific conferences, presenting their scientific results, among others.

### External Funds

An engagement with industry and external foundations has been successful in attracting external funds to support college of engineering activities:

- (1) Azmat Assur Foundation - Develop infrastructure for two enhanced computing facilities for engineering and Computer Science Students \$141,458 and strengthen transition towards engineering pathways math readiness program \$100,771. These two programs were funded and activities impacted 23 students in the summer of 2025 through the Quorum Blue program.

The remainder of this report includes additional details about college wide initiatives carried out during the academic year 2024-25.

## 2. Mission:

The College of Engineering mission is to provide citizens to our society able to think critically, be professionally prepared in engineering and related areas, and capable of exercising leadership positions to contribute to the cultural, social, economic, scientific and technological development of our immediate

environment, Puerto Rico and the rest of the world. At the same time, it is the mission of the College of Engineering, the creation and dissemination of scientific knowledge, innovation and adaptation of technology for the benefit of society in general with emphasis on Puerto Rican society. Our commitment is to prepare the best professionals in engineering and related areas, and be a major center for research, publications and service for the technological development of Puerto Rico, the U.S., the Caribbean, Central and South America.

## F. College of Business Administration

### 1. Executive Summary:

In 2024–2025, the College of Business Administration (CBA) at the University of Puerto Rico at Mayagüez (UPRM) made notable strides in strategic planning, academic innovation, student support, and financial sustainability.

The College advanced AACSB and ACBSP accreditation processes, supported by targeted faculty hiring and curricular updates. A new master's in sciences in Supply Chain Management (MSSCM) is scheduled to be launched by 2026. Student enrollment grew for a second consecutive year, and previously closed facilities—such as the Tutoring Center and Business Research Center—were restored for student use. New spaces were also created for graduate students and collaborative learning.

CBA reactivated its External Advisory Board and strengthened its regional impact through the Business and Economic Development Center (BEDC). A grant from Banco Popular supported the launch of the NeuroLab MindMarket Lab. Philanthropy efforts included an eight-year scholarship commitment for \$6.1M from Eli Lilly Company, and the first ADEM Charity Golf Tournament which helped fund programs like the STEAM Summer Camp.

Faculty research was supported with course releases and proposal guidance, and EDUCON diversified revenue through new funding streams. Faculty engagement increased, with notable recognition for Dr. Moraima De Hoyos, recipient of the Chancellor's Distinguished Faculty Research Award.

BEDC, Career Development Office (CDO), CRECEN, and EDUCON, amplified CBA's outreach through job fairs, resume-building workshops, radio appearances, distribution of over 470 professional clothing items via El Roperero, workforce development initiatives, seminars, and advising and financial support for small businesses. The STEAM Summer Camp reached more than 100 high school students, promoting early exposure to business education.

Efforts to foster school pride and engagement included student orientations, graduation events, and increased social media visibility. International student

enrollment enriched the graduate experience and reinforced CBA's commitment to excellence and community transformation.

## 2. Mission:

Mission: To impact society by transforming students, professionals, and organizations in the field of business through the provision of academic, practical, research, and community service experiences.

## G. College of Arts and Science

### 1. Executive Summary:

The College of Arts and Sciences has 14 departments offering 46 undergraduate and graduate academic programs. In addition, we have an interdisciplinary undergraduate program in industrial biotechnology. This annual report highlights significant progress in academic excellence, strategic planning, community impact, and institutional development across our diverse departments. Multiple departments refined their strategic and assessment plans, focusing on curriculum revisions, learning outcomes, student recruitment, and faculty development. Notable efforts include Marine Sciences' comprehensive five-year plan, Mathematics' initiatives for low-enrollment programs, and Psychology's accreditation path for its doctoral program. Departments advanced academic offerings with new and revised programs. English proposed a Film Production bachelor's degree and expanded Media Studies; Economics introduced courses in sustainability; and Nursing advanced a 130- credits BS proposal while preparing a master's program. Curricular innovation was also seen in Geology, Kinesiology, and Hispanic Studies. Our college reported robust research activity. Marine Sciences led with over \$3.3 million in active grants, including an \$11M NOAA-funded coral restoration project. Faculty across departments published in peer-reviewed journals, secured external funding, and mentored students. Psychology and Social Sciences maintained active research centers, while English's Oral History Lab managed a \$1.8M community grant. Departments enhanced revenue through grants, donations, continuing education, facility rentals, and textbook authorship. Marine Sciences generated over \$250K from external sources and partnerships. Nursing expanded CEU programs, while Mathematical Sciences developed departmental textbooks and The Institute of Mathematical Strengthening (INFOMATE) initiatives. Departments adopted digitization, automation, and cloud-based tools to improve administrative processes. Initiatives included digital student files, QR code systems for appointments, and automated purchasing logs. Staff participated in professional development workshops and leadership training. Community impact remained strong. Departments engaged in outreach, public education, and partnerships with municipalities, hospitals, and NGOs. Highlights include Geology's LandslideReady program, Nursing's public health collaborations, and Psychology's CAISPE clinic launch. Students participated in local and



international academic events and service initiatives. Students received national awards and scholarships, and participated in high-profile research presentations. Faculty earned leadership roles in professional associations and collaborated on interinstitutional and interdisciplinary projects. The College reinforced its identity as a driver of educational, social, and scientific progress in Puerto Rico and beyond. In summary, the great richness that exists in the College of Arts and Sciences demonstrates our strong commitment to continue strengthening the academic excellence of the programs.

## 2. Mission:

Provide an excellent service to Puerto Rico and the world:

- Forming educated citizens, capable of critical thinking and professionally prepared in the arts and sciences so that they can contribute in an educational, cultural, social, technological and economic development.
- Perform creative work, of research and service, that meets the needs of society and divulge the results of these activities so they can be accessible for everyone.

Provide our students with the necessary skill and sensitivity, to effectively solve the problems we face and be an example of the values and attitudes that must prevail in a democratic society that values and respects diversity.

#### IV. UPRM's Profile

In response to shifting demographic, economic, and societal factors, higher education institutions across the United States are facing notable enrollment declines, and UPRM has experienced similar patterns over the past five academic years. Table 1 summarizes registration data for this period. Figure 1 illustrates trends from 2020 to 2025, highlighting changes in undergraduate, graduate, and total student populations. The plot shows a consistent decline in undergraduate numbers alongside relatively stable graduate enrollment, with total headcount reflecting a downward trend that appears to be stabilizing. The relative stability of graduate population suggests a potential area for strategic growth, particularly in expanding or enhancing graduate programs.

| Academic Year    | Undergraduate Enrollment | Graduate Enrollment | Total Enrollment |
|------------------|--------------------------|---------------------|------------------|
| 2020-2021        | 11,966                   | 859                 | 12,825           |
| 2021-2022        | 11,246                   | 880                 | 12,126           |
| 2022-2023        | 10,201                   | 861                 | 11,062           |
| 2023-2024        | 9,866                    | 861                 | 10,727           |
| <b>2024-2025</b> | <b>9,764</b>             | <b>854</b>          | <b>10,618</b>    |

Table 1. UPRM Student Enrollment from 2020-2021 through 2024-2025

The year-to-year decreases are:

- 2020–21 to 2021–22: – 699 (–5.5%)
- 2021–22 to 2022–23: – 1,064 (–8.8%)
- 2022–23 to 2023–24: – 335 (–3.0%)
- 2023–24 to 2024–25: – 109 (–1.02%) ← smallest drop

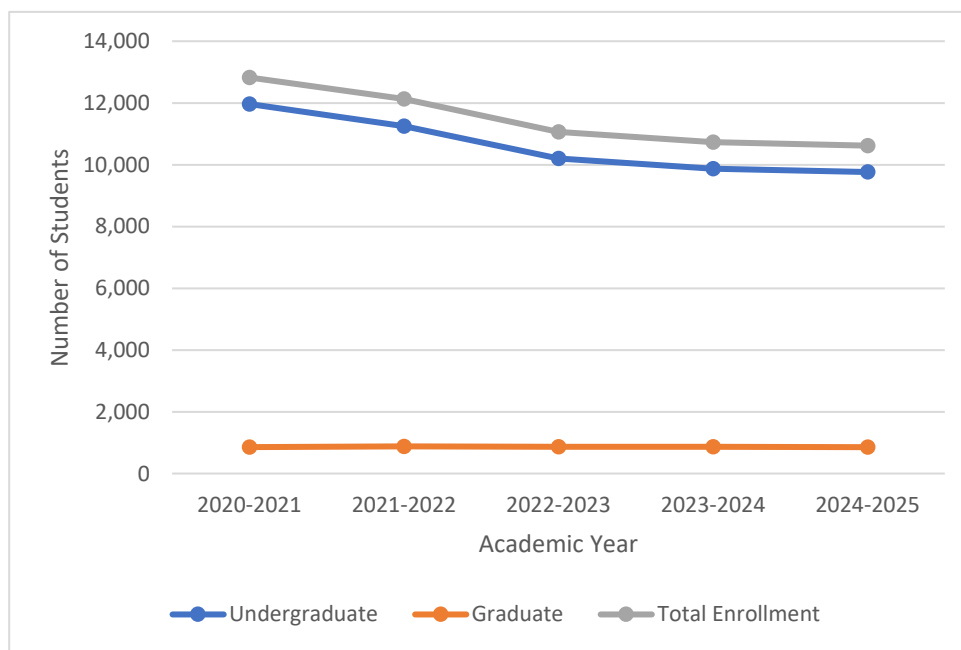


Figure 1. UPRM Total Student Enrollment Trend (2020-2025)

Table 2 summarizes undergraduate student numbers at UPRM by faculty, the Continuous Education Division (CED), and other enrollment categories. The CED includes programs such as teaching licenses in agricultural science and high school education courses, while "Other" covers high school students, transient students, exchange program participants, and auditors. The College of Engineering remains the largest academic unit on campus, showing modest growth from 4,648 students in 2023–2024 to 4,725 in 2024–2025. It now represents 48.4% of the undergraduate population. This steady demand highlights its resilience and continued relevance, making it a focal point for institutional support. The College of Arts and Sciences experienced enrollment declines in both its Sciences and Arts divisions. Sciences dropped by 113 students (5.7%), and Arts by 20 students (1.95%). The College of Agricultural Sciences also saw a decrease of 65 students (5.9%). Business Administration remained relatively stable, with a minimal loss of 5 students. The CED experienced a temporary spike in 2023–2024 but declined in 2024–2025. Nevertheless, the recent performance of its programs underscores the importance of expanding flexible, certificate-based, or continuing education offerings to attract diverse student populations. Enrollment in the "Other" category increased slightly compared to the previous year.

| Academic Year    | College of Engineering | College of Arts & Sciences: Sciences | College of Agricultural Sciences | College of Arts & Sciences: Arts | College of Business Administration | CED       | Others    |
|------------------|------------------------|--------------------------------------|----------------------------------|----------------------------------|------------------------------------|-----------|-----------|
| 2022-2023        | 4673                   | 2152                                 | 1165                             | 1120                             | 987                                | 21        | 83        |
| 2023-2024        | 4648                   | 1982                                 | 1096                             | 1025                             | 915                                | 141       | 59        |
| <b>2024-2025</b> | <b>4725</b>            | <b>1869</b>                          | <b>1031</b>                      | <b>1005</b>                      | <b>982</b>                         | <b>85</b> | <b>67</b> |

Table 2. UPRM Undergraduate Student Enrollment by Faculty, CED, and Others

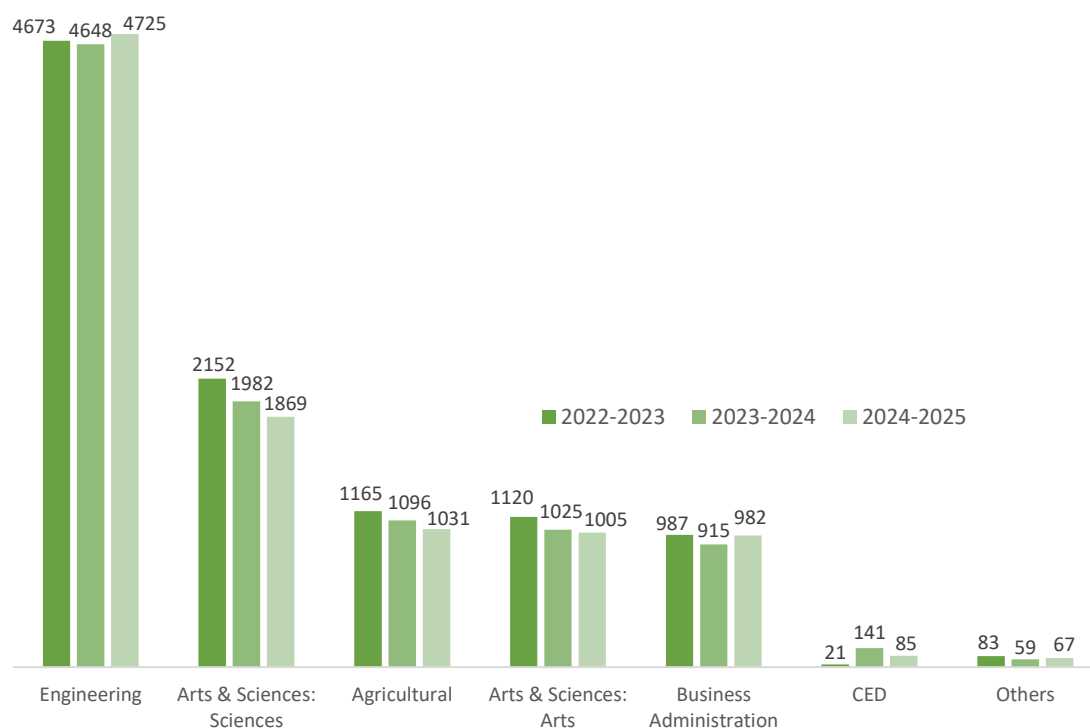


Figure 2. UPRM Undergraduate Enrollment Trends by Faculty, CED and Others

Table 3 summarizes UPRM graduate student enrollment by faculty from 2022–2023 to 2024–2025. During this period, most faculties experienced modest declines in graduate student numbers. Notably, the College of Agricultural Sciences reported an increase of 17 students in 2024–2025 compared to the prior year, standing out as the only area with positive growth. The Sciences Division of the College of Arts and Sciences continues to enroll the largest share of graduate students, with 261 in 2024–2025—accounting for 30.6% of the total UPRM graduate population. Figure 3 illustrates these enrollment trends by faculty over the three-year period.

| Academic Year    | College of Engineering | College of Sciences & Arts: Sciences | College of Agricultural Sciences | College of Sciences & Arts: Arts | College of Business Administration |
|------------------|------------------------|--------------------------------------|----------------------------------|----------------------------------|------------------------------------|
| 2022-2023        | 264                    | 270                                  | 182                              | 101                              | 44                                 |
| 2023-2024        | 258                    | 265                                  | 176                              | 125                              | 37                                 |
| <b>2024-2025</b> | <b>253</b>             | <b>261</b>                           | <b>193</b>                       | <b>115</b>                       | <b>32</b>                          |

Table 3. UPRM Graduate Student Enrollment by Faculty

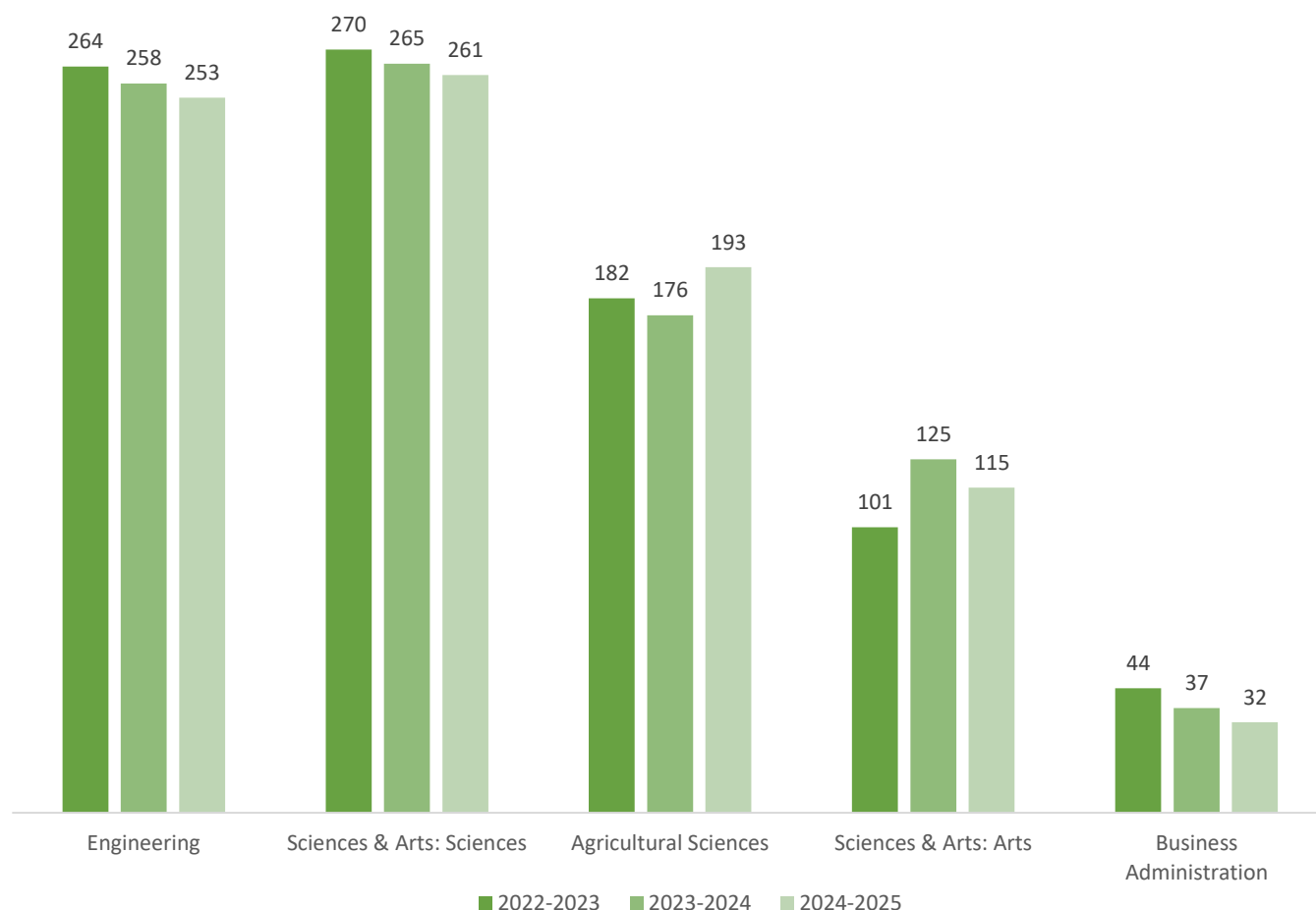


Figure 3. UPRM Graduate Enrollment Trends by Faculty

Table 4 presents a summary of undergraduate student enrollment in the UPRM College of Engineering. Most programs experienced an increase in enrollment during the 2024–2025 academic year compared to the previous year. Mechanical Engineering remains the largest undergraduate program on campus, with 1,032 students, representing 10.6% of the total undergraduate enrollment. Civil Engineering is the second-largest program, with 681 students (7%), followed by Industrial Engineering, with 626 students (6.4%). Figure 4 illustrates enrollment trends in the College of Engineering by academic year and program.

| College of Engineering – BS Program | Academic Year |           |             |
|-------------------------------------|---------------|-----------|-------------|
|                                     | 2022-2023     | 2023-2024 | 2024-2025   |
| Mechanical Engineering              | 1022          | 1019      | <b>1032</b> |
| Chemical Engineering                | 555           | 526       | <b>512</b>  |
| Electrical Engineering              | 612           | 586       | <b>561</b>  |
| Industrial Engineering              | 637           | 621       | <b>626</b>  |
| Computer Engineering                | 476           | 468       | <b>477</b>  |
| Civil Engineering                   | 578           | 629       | <b>681</b>  |
| Software Engineering                | 456           | 457       | <b>491</b>  |
| Surveying and Topography            | 172           | 165       | <b>153</b>  |
| Computer Science and Engineering    | 165           | 177       | <b>192</b>  |

Table 4. College of Engineering Undergraduate Student Enrollment

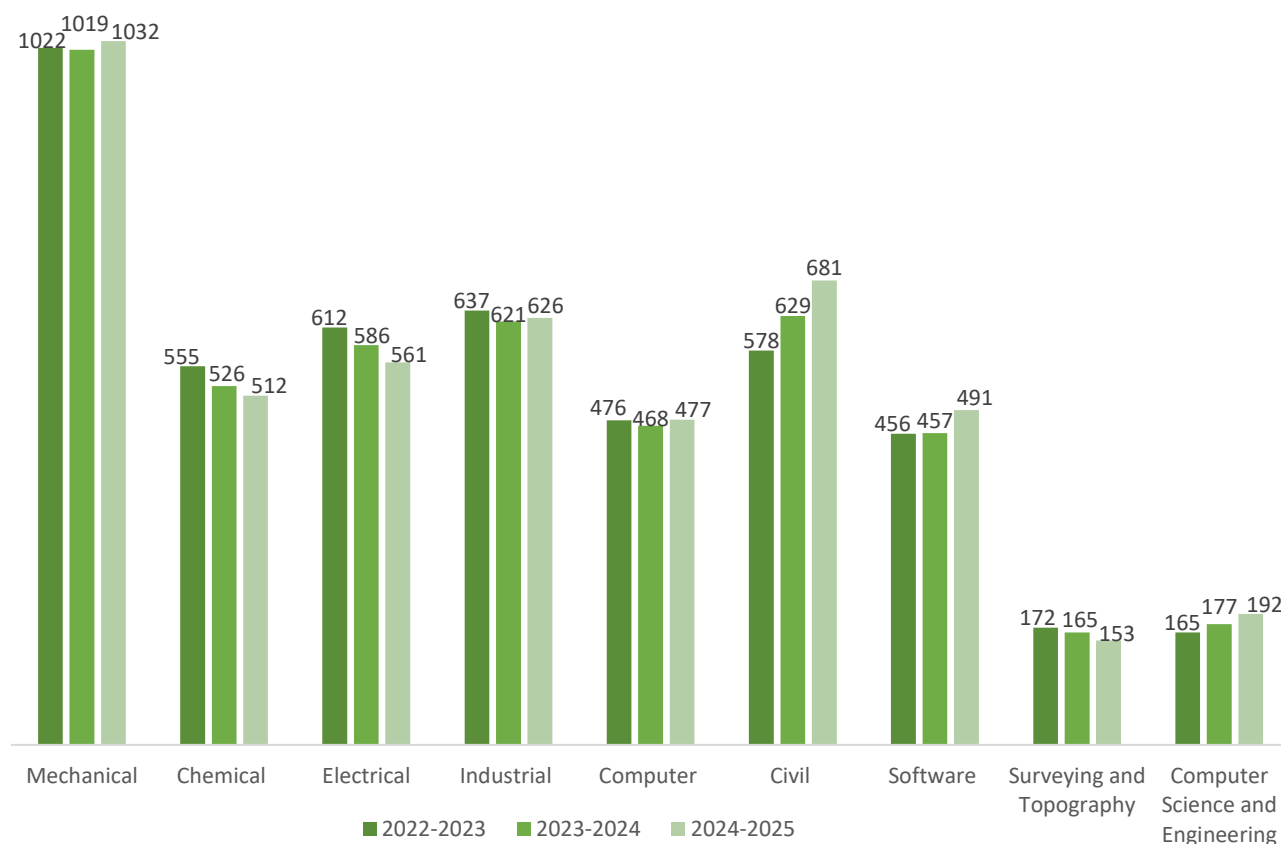


Figure 4. College of Engineering Undergraduate Enrollment Trends

Table 5 presents a summary of undergraduate student enrollment in the UPRM College of Agricultural Sciences. Animal Science remains the most enrolled program in this area, with 521 students, representing 5.3% of the total UPRM undergraduate enrollment. Figure 5 illustrates enrollment trends by academic year across the various programs.

| College of Agricultural Sciences         | Academic Year |           |            |
|------------------------------------------|---------------|-----------|------------|
|                                          | 2022-2023     | 2023-2024 | 2024-2025  |
| Animal Science – BSA                     | 525           | 525       | <b>521</b> |
| General Agricultural – BSA               | 112           | 100       | <b>94</b>  |
| Agronomy – BSA                           | 152           | 146       | <b>142</b> |
| Environmental Agricultural Systems - BSA | 76            | 58        | <b>46</b>  |
| Horticulture – BSA                       | 68            | 50        | <b>51</b>  |
| Agricultural Education – BSA             | 32            | 24        | <b>26</b>  |
| Agricultural Extension – BSA             | 31            | 18        | <b>9</b>   |
| Agri-Business – BSA                      | 44            | 44        | <b>33</b>  |
| Agricultural Economics – BSA             | 26            | 26        | <b>16</b>  |
| Crop Protection – BSA                    | 22            | 14        | <b>14</b>  |
| Soil Sciences – BSA                      | 12            | 13        | <b>10</b>  |
| Pre-Veterinary Studies                   | 65            | 64        | <b>48</b>  |
| Food Sciences - BSA                      | 0             | 14        | <b>21</b>  |

Table 5. College of Agricultural Sciences Undergraduate Student Enrollment

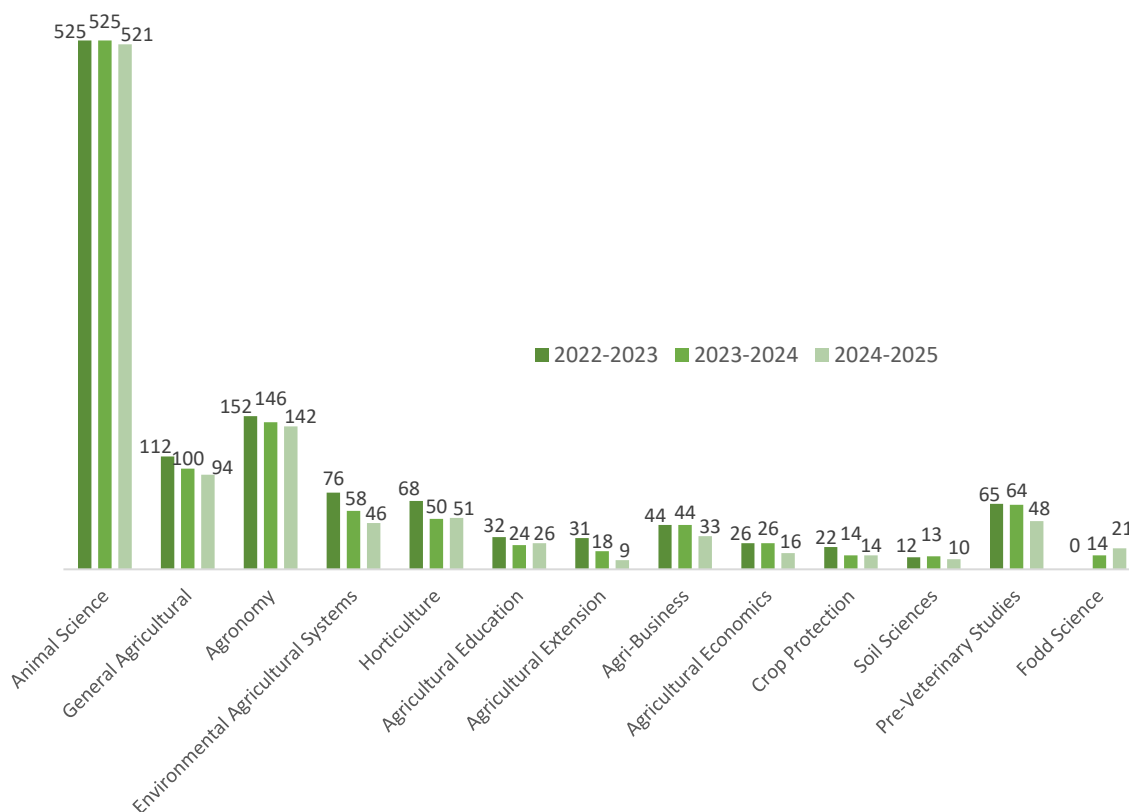


Figure 5. College of Agriculture Sciences Undergraduate Enrollment Trends

Table 6 presents a summary of undergraduate student enrollment in the UPRM College of Business Administration. All programs—except Human Resources Management—experienced an increase in enrollment during the 2024–2025 academic year compared to the previous year. Accounting remains the most enrolled program in the college, with 240 students, representing 2.46% of the total UPRM undergraduate enrollment. The Finance – BSBA program shows a significant increase, rising from 132 to 168 students. Figure 6 illustrates undergraduate enrollment trends in the College of Business Administration from academic year 2022–2023 through 2024–2025.

| College of Business Administration     | Academic Year |           |            |
|----------------------------------------|---------------|-----------|------------|
|                                        | 2022-2023     | 2023-2024 | 2024-2025  |
| Accounting – BSBA                      | 262           | 228       | <b>240</b> |
| Marketing – BSBA                       | 207           | 215       | <b>232</b> |
| Computerized Information System – BSBA | 128           | 113       | <b>125</b> |
| Operations Management – BSBA           | 111           | 102       | <b>111</b> |
| Finance – BSBA                         | 114           | 132       | <b>168</b> |
| Office Administration – BOA            | 81            | 48        | <b>53</b>  |
| Human Resources Management – BSBA      | 84            | 77        | <b>53</b>  |

Table 6. College of Business Administration Undergraduate Student Enrollment

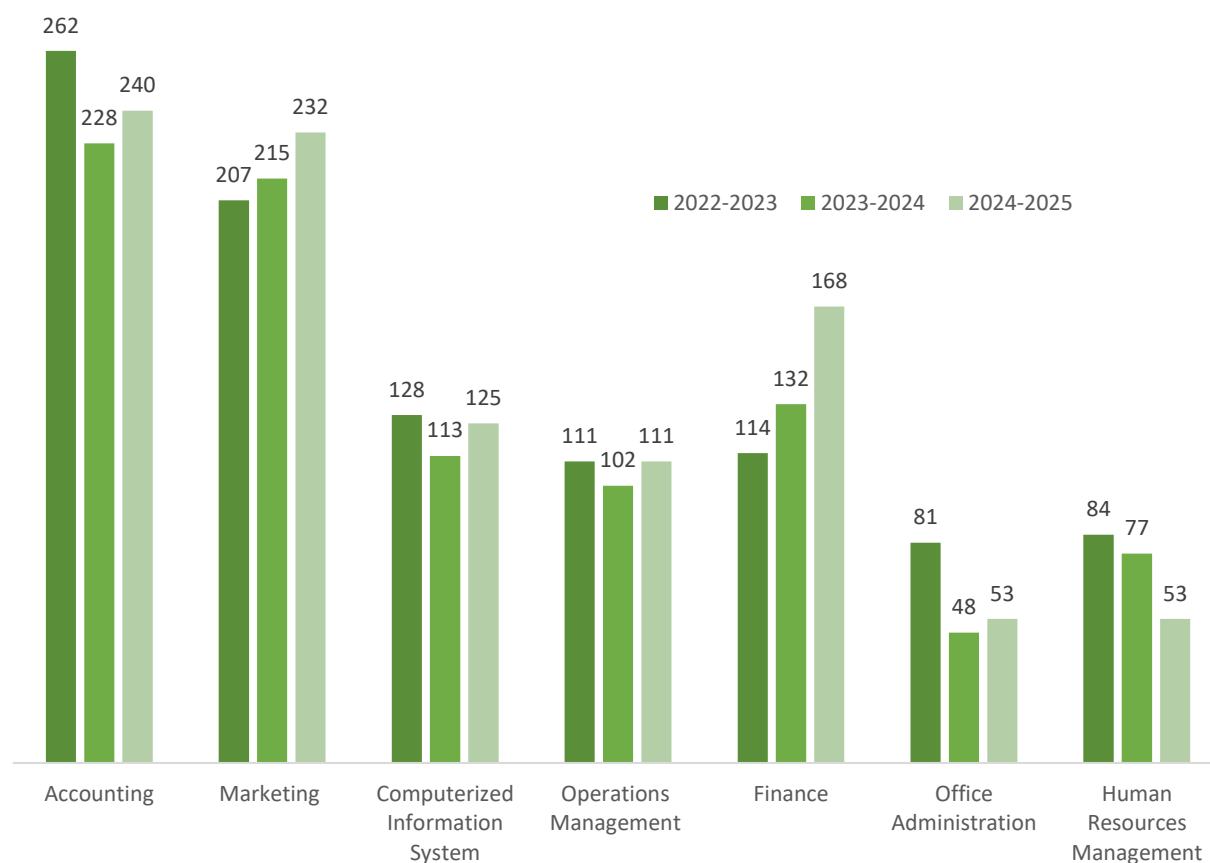


Figure 6. College of Business Administration Undergraduate Enrollment Trends

Table 7 presents a summary of undergraduate student enrollment in the UPRM College of Arts and Sciences – Arts. Psychology remains the most enrolled program in this area, with 332 students, representing 3.4% of the total UPRM undergraduate enrollment. Figure 7 illustrates undergraduate enrollment trends in these programs from academic year 2022–2023 through 2024–2025.

| College of Arts and Sciences –<br>Arts - BA Program | Academic Year |           |            |
|-----------------------------------------------------|---------------|-----------|------------|
|                                                     | 2022-2023     | 2023-2024 | 2024-2025  |
| Psychology                                          | 320           | 334       | <b>332</b> |
| Coaching                                            | 146           | 142       | <b>143</b> |
| Political Sciences                                  | 117           | 114       | <b>122</b> |
| English                                             | 101           | 87        | <b>84</b>  |
| Plastics Arts                                       | 96            | 85        | <b>98</b>  |
| Social Sciences                                     | 58            | 47        | <b>40</b>  |
| Sociology                                           | 36            | 29        | <b>27</b>  |
| Teaching in Physical Education                      | 60            | 51        | <b>41</b>  |
| Economics                                           | 50            | 32        | <b>27</b>  |
| History                                             | 36            | 27        | <b>27</b>  |
| Comparative Literature                              | 35            | 22        | <b>15</b>  |
| Hispanic Studies                                    | 17            | 13        | <b>9</b>   |
| French Language and Literature                      | 23            | 21        | <b>20</b>  |
| Theory of Art                                       | 18            | 16        | <b>16</b>  |
| Philosophy                                          | 7             | 5         | <b>4</b>   |

Table 7. College of Arts and Sciences - Arts Undergraduate Student Enrollments

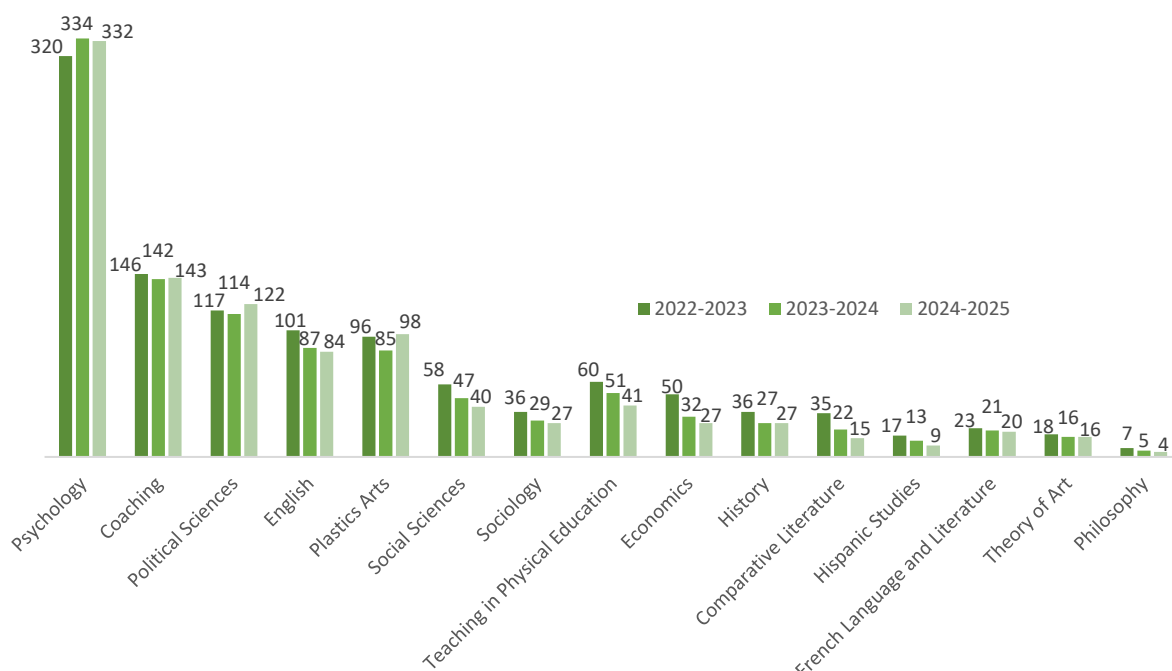


Figure 7. College of Arts and Sciences: Arts Undergraduate Enrollment Trends



Table 8 presents a summary of undergraduate student enrollment in the UPRM College of Arts and Sciences – Sciences. Biology remains the fourth-largest undergraduate program on campus, with 594 students, representing 6.1% of the total UPRM undergraduate enrollment. Figure 8 illustrates enrollment trends in these programs from academic year 2022–2023 through 2024–2025.

| College of Arts and Sciences:<br>Sciences - BS Program | Academic Year |           |            |
|--------------------------------------------------------|---------------|-----------|------------|
|                                                        | 2022-2023     | 2023-2024 | 2024-2025  |
| Biology                                                | 705           | 629       | <b>594</b> |
| Industrial Microbiology                                | 362           | 338       | <b>314</b> |
| Nursing                                                | 198           | 175       | <b>199</b> |
| Chemistry                                              | 234           | 233       | <b>208</b> |
| Pre-Medical Studies                                    | 169           | 175       | <b>172</b> |
| Industrial Biotechnology                               | 127           | 111       | <b>103</b> |
| Theoretical Physics                                    | 103           | 107       | <b>85</b>  |
| Geology                                                | 108           | 84        | <b>78</b>  |
| Computer Science                                       | 85            | 84        | <b>84</b>  |
| Physical Science                                       | 33            | 24        | <b>15</b>  |
| Mathematics                                            | 24            | 18        | <b>13</b>  |
| Mathematics Education                                  | 4             | 4         | <b>4</b>   |

Table 8. College of Arts and Sciences - Science Undergraduate Student Enrollments

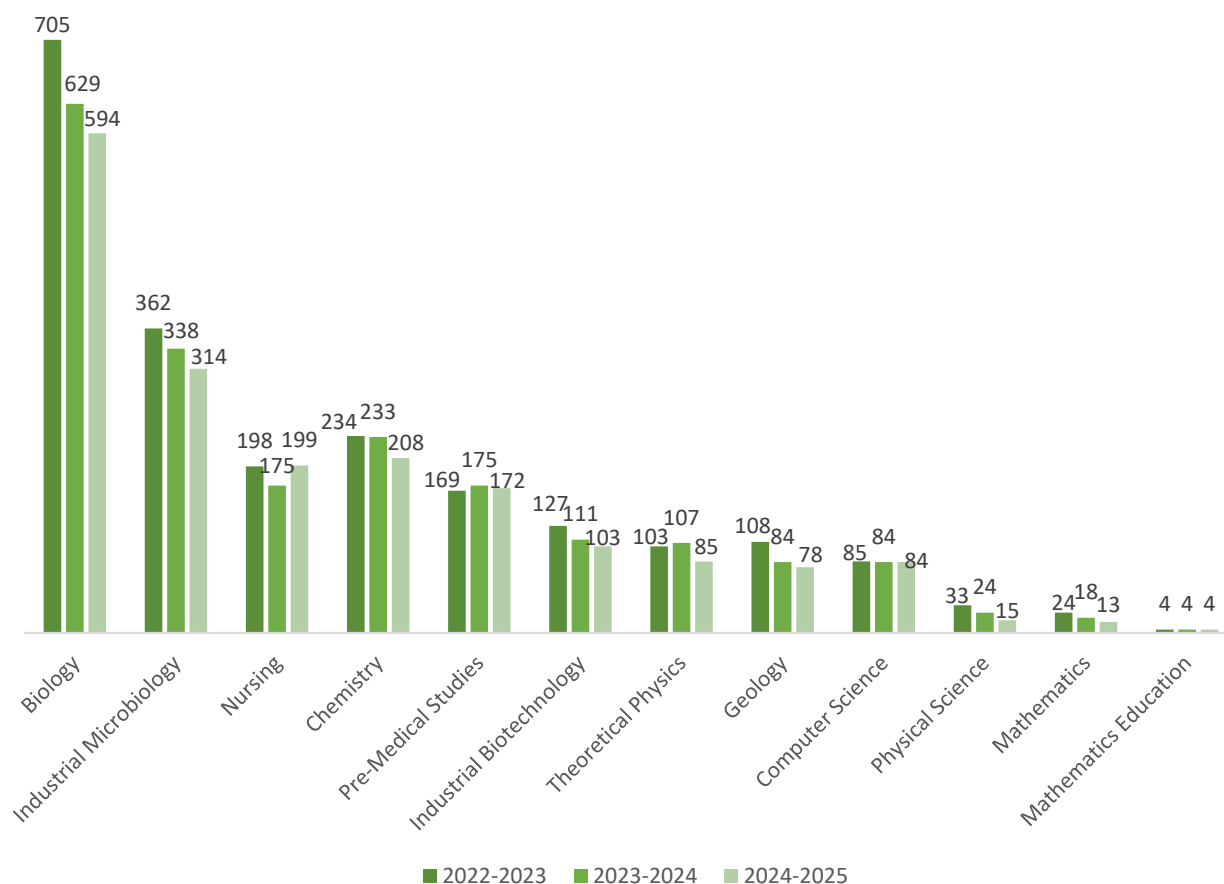


Figure 8. College of Arts and Sciences - Sciences Undergraduate Enrollment Trends

Table 9 presents a summary of non-degree student enrollment at UPRM. High school students consistently represent the largest group in this category, followed by transient-semester students. Figure 9 illustrates enrollment trends in non-degree programs from academic year 2022–2023 through 2024–2025. A high school student refers to a secondary student enrolled in one or more university-level courses while still completing high school. Transient students enroll temporarily at UPRM—typically for one term—with the intention of transferring credits back to their home institution. Exchange students participate through formal agreements between institutions that allow them to study abroad for a limited period. Auditor students attend courses without earning academic credit. The table also includes data from PADE (*Profesionalización Acelerada Docentes Department de Educación*), an accelerated professionalization program for teachers from the Puerto Rico Department of Education (PRDE).

| UPRM Non-degree Student Enrollment | Academic Year |           |           |
|------------------------------------|---------------|-----------|-----------|
|                                    | 2022-2023     | 2023-2024 | 2024-2025 |
| High School Students               | 48            | 28        | <b>34</b> |
| Transient-Semester                 | 26            | 22        | <b>23</b> |
| Exchange Program                   | 5             | 7         | <b>7</b>  |
| Auditor                            | 3             | 1         | <b>0</b>  |
| PADE                               | 1             | 1         | <b>3</b>  |

Table 9. Non-degree Student Enrollments

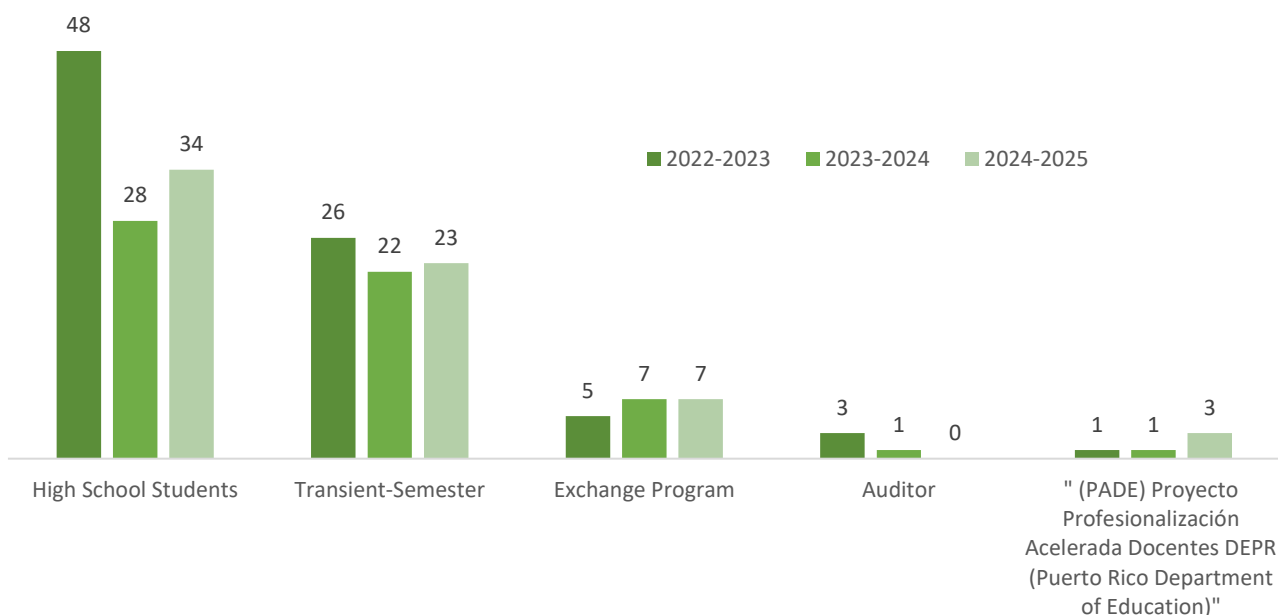


Figure 9. Non-degree Programs Enrollment Trends

Table 10 presents the number of bachelor's degrees awarded at UPRM by faculty during the academic years 2022–2023 to 2024–2025. Bachelor's degree awards decreased by 13.5% from 2022–2023 to 2024–2025. Figure 10 illustrates the downward trend, which mirrors the decline in student enrollment over the same period.

| UPRM College                       | Academic Year |           |              |
|------------------------------------|---------------|-----------|--------------|
|                                    | 2022-2023     | 2023-2024 | 2024-2025    |
| College of Arts and Sciences       | 702           | 613       | <b>581</b>   |
| College of Engineering             | 652           | 697       | <b>577</b>   |
| College of Agricultural Sciences   | 196           | 227       | <b>160</b>   |
| College of Business Administration | 195           | 153       | <b>191</b>   |
| Total                              | 1,745         | 1,690     | <b>1,509</b> |

Table 10. UPRM Awarded Bachelor's Degrees by Faculty

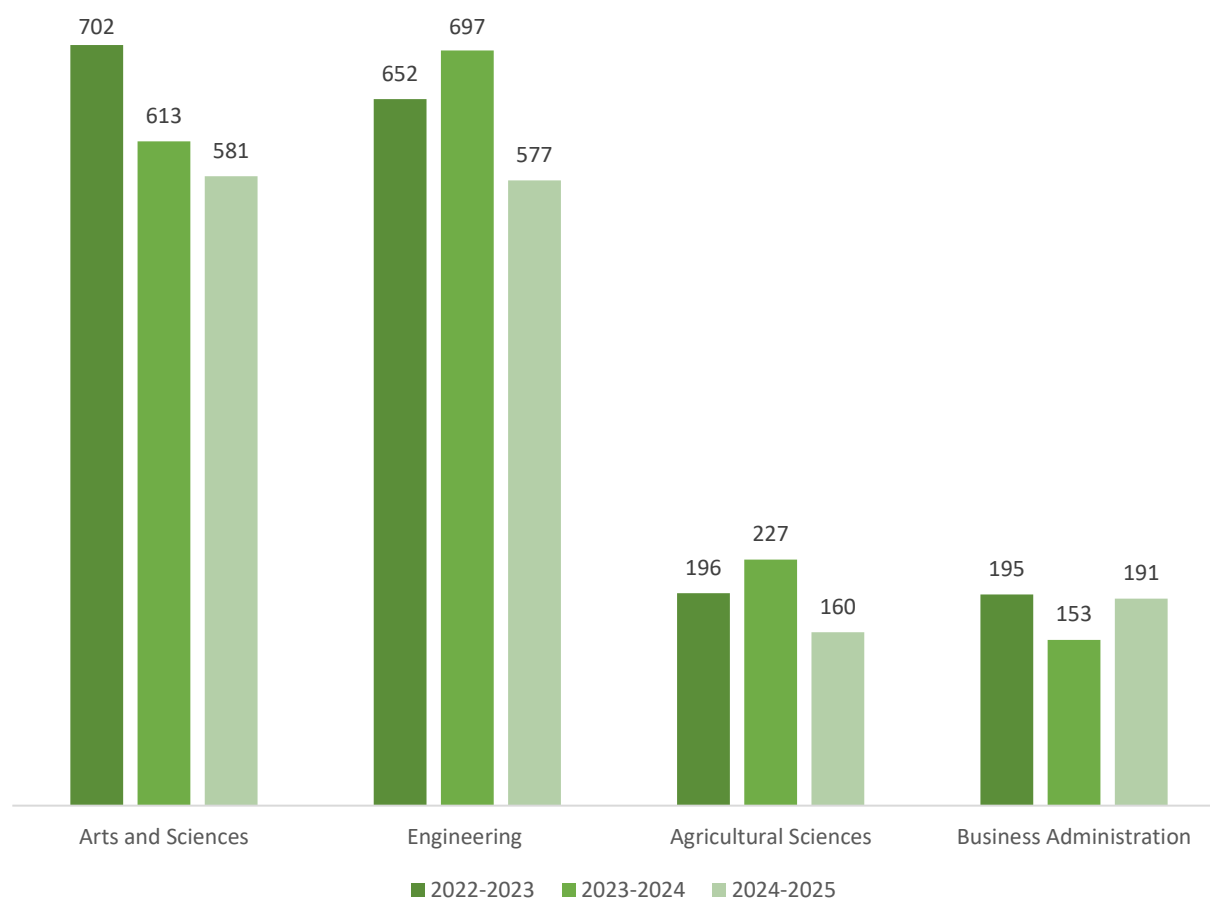


Figure 10. UPRM Awarded Bachelor's Degrees by Faculty Trends

Table 11 presents the number of master's degrees awarded at UPRM by faculty during the academic years 2022–2023 to 2024–2025. Figure 11 illustrates the relatively stable trend in master's degree awards, which aligns with the stable graduate student enrollment shown in Table 1. The total number of master's degrees awarded increased by 15.85% over the three-year period. Arts and Sciences consistently contributed the largest share.

| UPRM College                       | Academic Year |           |           |
|------------------------------------|---------------|-----------|-----------|
|                                    | 2022-2023     | 2023-2024 | 2024-2025 |
| College of Arts and Sciences       | 59            | 88        | 71        |
| College of Engineering             | 52            | 48        | 61        |
| College of Agricultural Sciences   | 35            | 32        | 48        |
| College of Business Administration | 18            | 17        | 10        |
| Total                              | 164           | 185       | 190       |

Table 11. UPRM Awarded Master's Degrees by Faculty

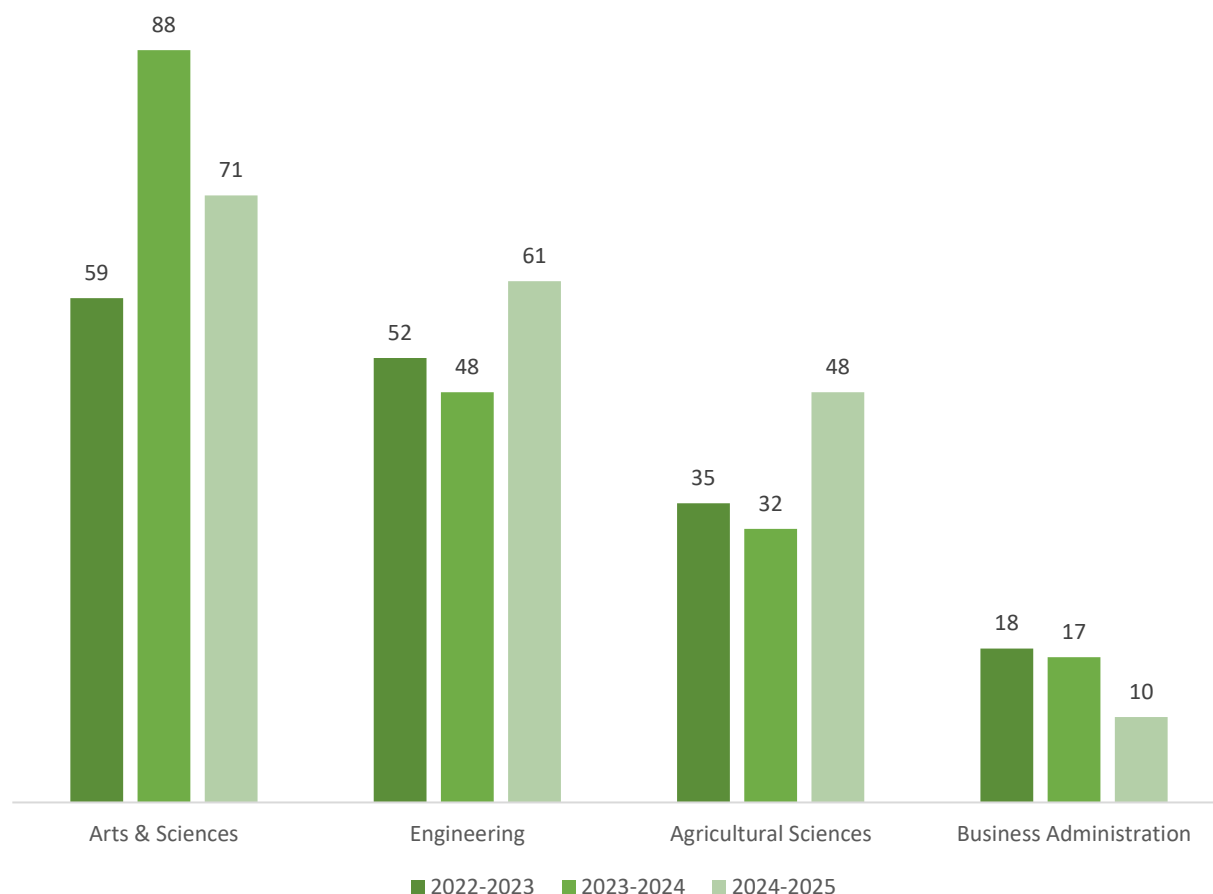


Figure 11. UPRM Awarded Master's Degrees Trends

Table 12 presents the number of PhD degrees awarded at UPRM by faculty during the academic years 2022–2023 to 2024–2025. Consistently awarding more than 20 doctoral degrees annually is essential to maintaining UPRM’s R2 Carnegie Classification. The College of Engineering contributed the largest share, while the Agricultural Sciences PhD program was launched in 2024–2025. The College of Business Administration does not offer a PhD program. Figure 12 illustrates these trends.

| UPRM College                       | Academic Year |           |                     |
|------------------------------------|---------------|-----------|---------------------|
|                                    | 2022-2023     | 2023-2024 | 2024-2025           |
| College of Arts and Sciences       | 10            | 9         | 6                   |
| College of Engineering             | 14            | 14        | 16                  |
| College of Agricultural Sciences   | -             | -         | 0 (Program Started) |
| College of Business Administration | -             | -         | -                   |
| Total                              | 24            | 23        | 22                  |

Table 12. UPRM Awarded PhD's Degrees by Faculty

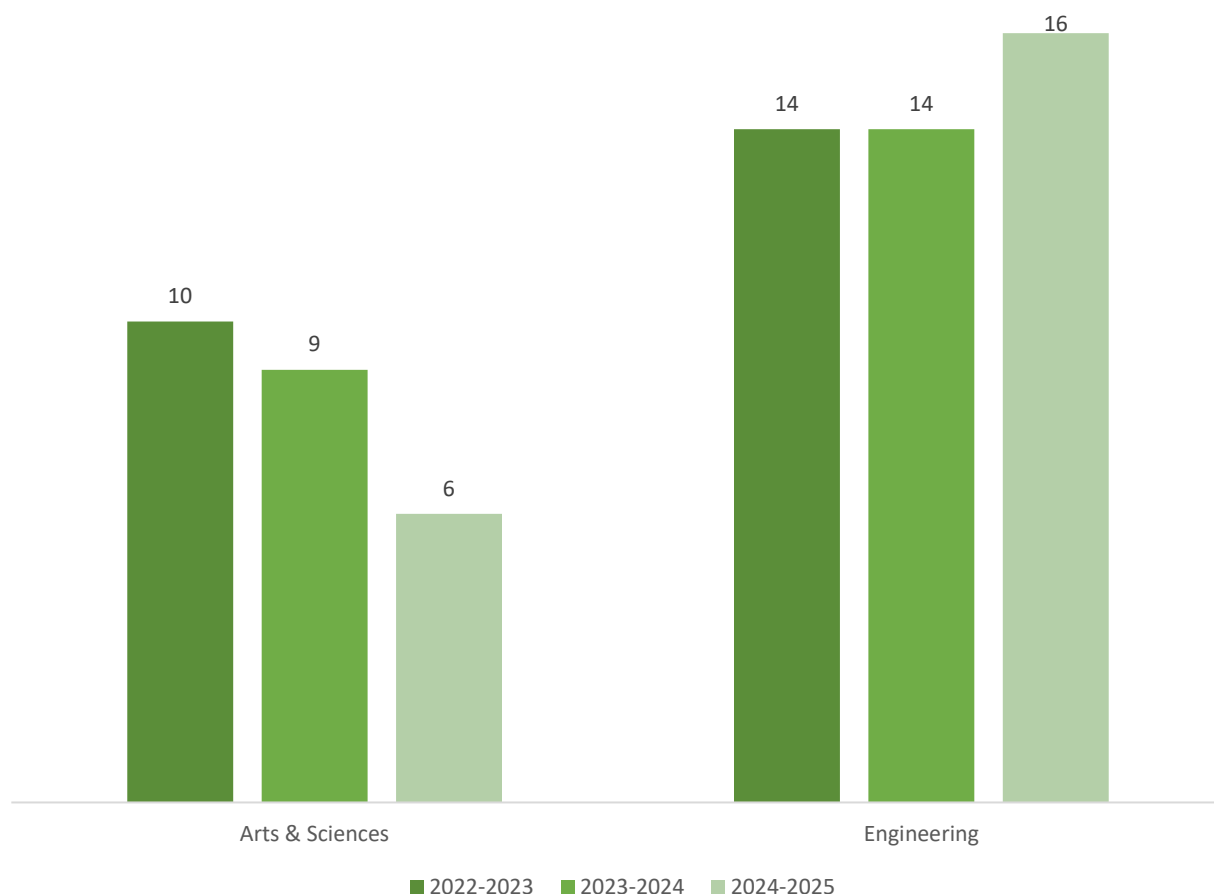


Figure 12. UPRM Awarded PhD's Degrees by Faculty

Table 13 shows the number of students admitted who completed the enrollment process by faculty for the academic years 2022-2023 through 2024-2025. For this year, a total of 1,767 students completed the enrollment process. This represents a reduction of 97 students (around a 5.2%). Figure 15 illustrates the enrollment trends.

| UPRM College                          | Academic Year |           |              |
|---------------------------------------|---------------|-----------|--------------|
|                                       | 2022-2023     | 2023-2024 | 2024-2025    |
| College of Engineering                | 721           | 898       | <b>899</b>   |
| College of Arts and Sciences: Science | 414           | 433       | <b>368</b>   |
| College of Agricultural Sciences      | 182           | 191       | <b>170</b>   |
| College of Arts and Sciences: Arts    | 179           | 172       | <b>134</b>   |
| College of Business Administration    | 195           | 170       | <b>196</b>   |
| Total                                 | 1,691         | 1,864     | <b>1,767</b> |

Table 13. Enrollment of Admitted Students by Faculty Trends

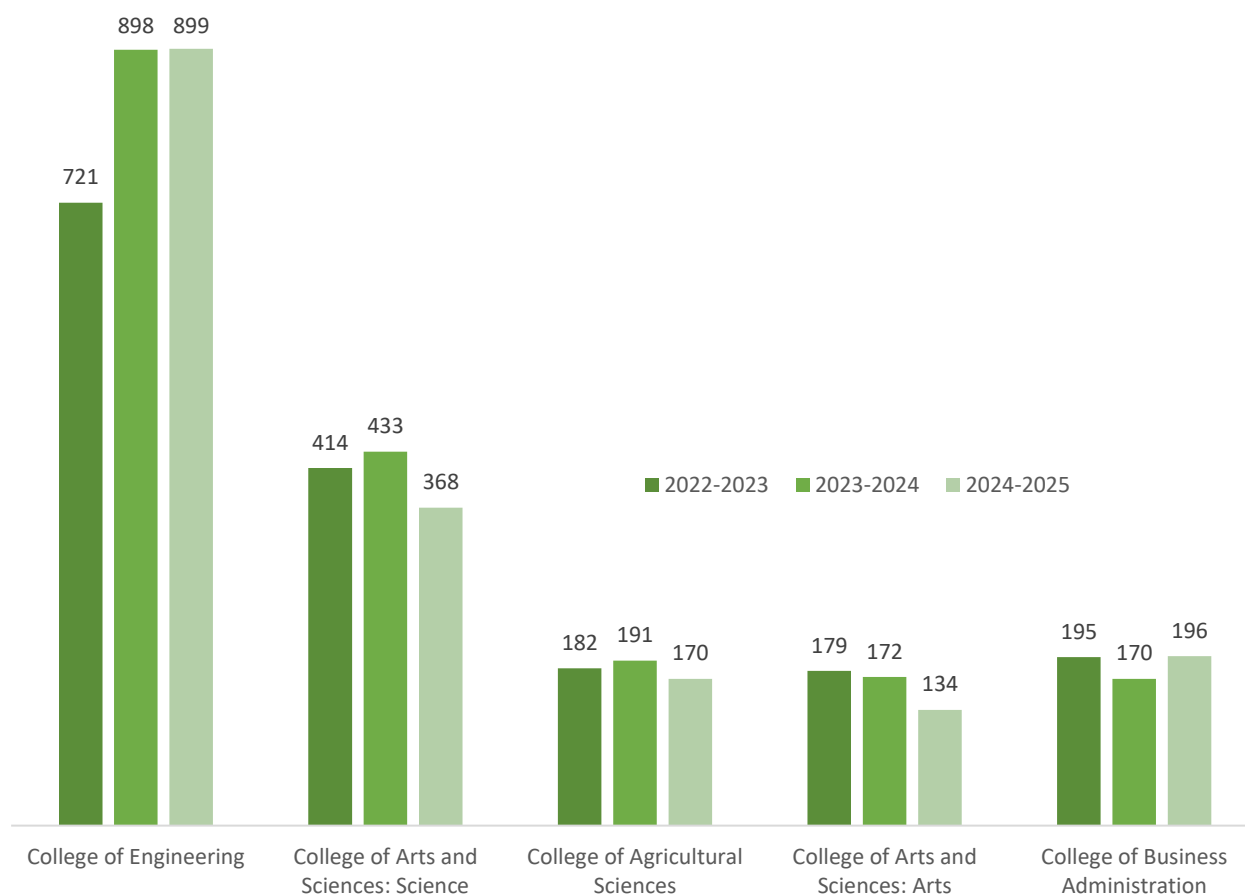


Figure 13. Enrollment of Admitted Students by Faculty Trends

In the 2024–2025 academic year, a total of 4,434 students applied for admission to the UPRM Mayagüez Campus. Of these, 2,513 applicants were admitted, representing 56.7% of total applicants. This reflects a 1.4% increase (61 additional applicants) compared to the previous year. Among the admitted students:

- 49.7% come from private schools
- 34% from public schools
- 3.2% from other educational institutions
- 13.1% were categorized as not defined

Due to the implementation of alternative admission methods, the General Index of Applications (IGS) is no longer a required criterion for admission to the campus. As a result, the minimum IGS value is now 0. For those admitted through traditional criteria, the maximum IGS recorded was 396, and the median IGS was 317. Figure 14 illustrates the distribution of new enrollment by school type and the corresponding IGS range.

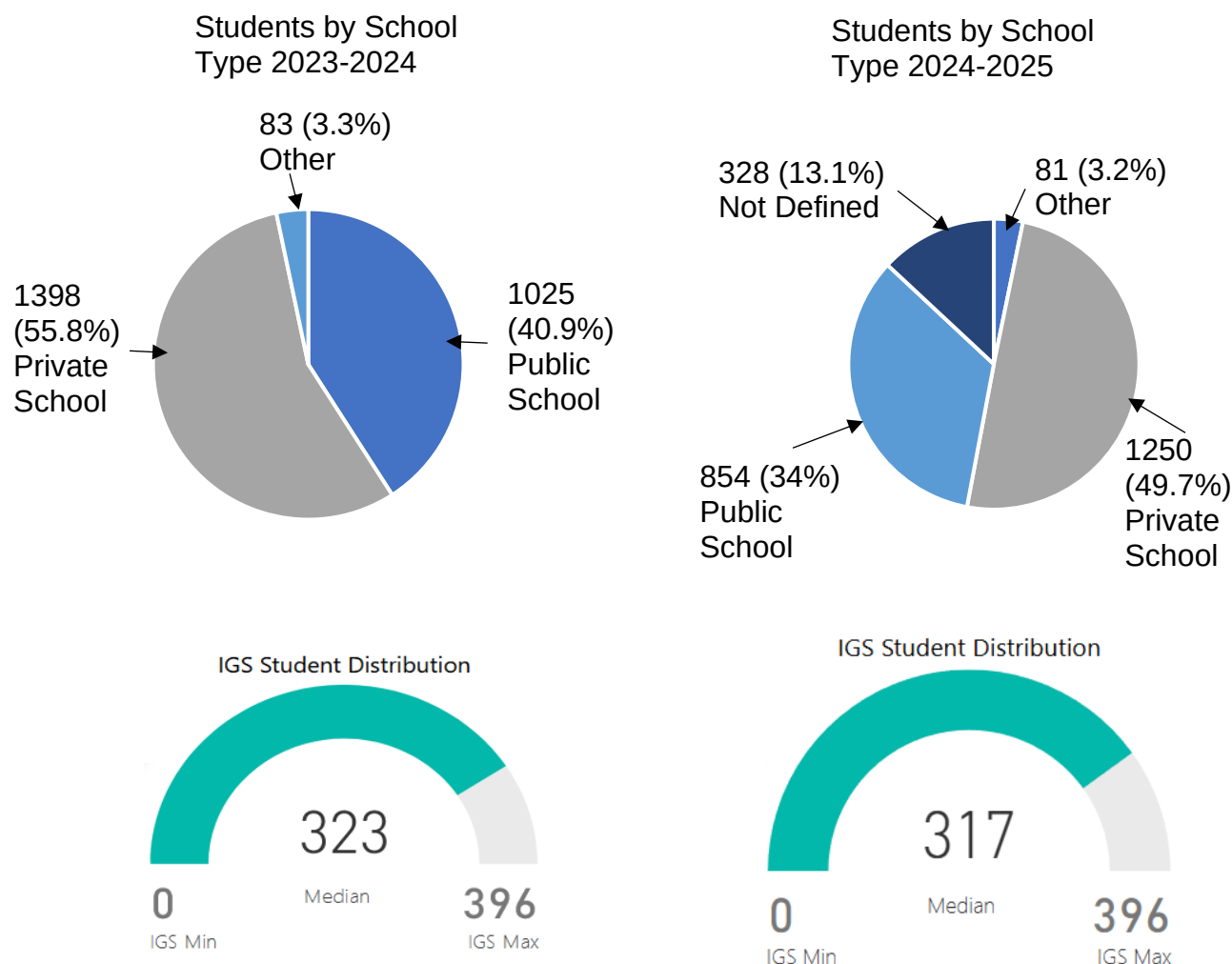


Figure 14. New Enrollment and IGS Distribution

Figure 15 presents the budget breakdown for the last three academic years (2022-2023, 2023-2024 and 2024-2025). In all three years, the largest accounts are the salaries of teaching and non-teaching employees, followed by other employer contributions.

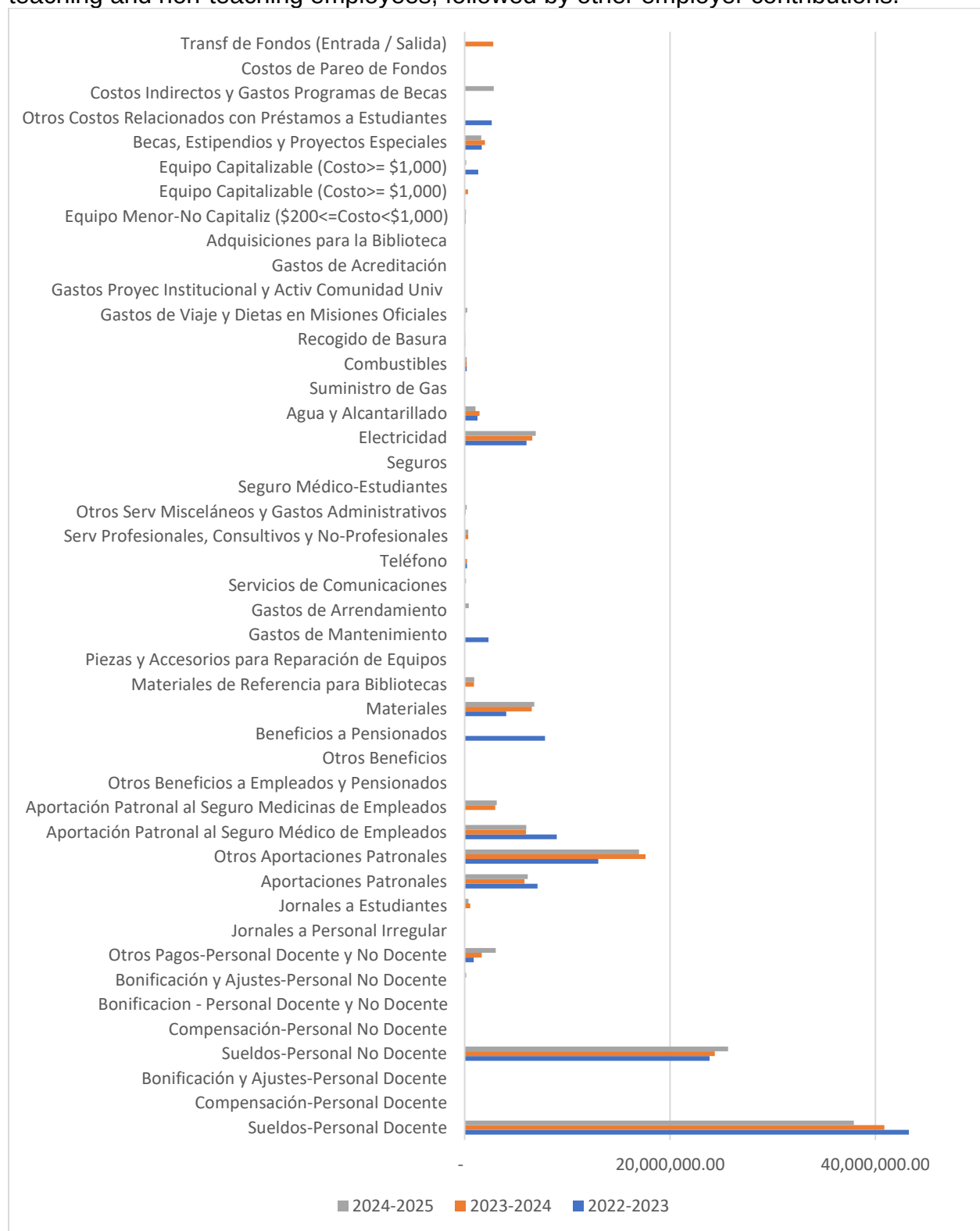


Figure 15. Budget per Description



## **Graduate Program Academic Offerings**

### **College of Business Administration MBA**

General Business Administration  
Human Resources  
Industrial Management  
Finance

### **College of Science MS**

Biology  
Marine Sciences  
Mathematical Sciences:  
    Scientific Computing  
    Applied Mathematics  
    Statistical Mathematics  
    Pure Mathematics  
    Teaching Mathematics at the  
    Pre-University Level

Physics  
Geology  
Chemistry

### **College of Science PhD**

Marine Sciences  
Applied Chemistry

### **College of Arts MA**

English Education  
English Literature  
Cultural and Humanistic Studies  
Hispanic Studies  
Kinesiology

### **College of Arts PhD**

School Psychology

### **College of Agricultural Sciences MS**

Agronomy  
Animal Sciences  
Food Science and Technology  
Agricultural Economy  
Remote Agricultural Economics  
Agricultural Education  
Agricultural Extension  
Horticulture  
Crop Protection  
Soils

### **College of Agricultural Sciences PhD**

Tropical Agriculture

### **College of Engineering MS and ME**

Bioengineering  
Materials Science and Engineering  
Civil Engineering  
Computer Engineering  
Electrical Engineering  
Industrial Engineering  
Chemical Engineering  
Mechanical Engineering

### **College of Engineering PhD**

Bioengineering  
Civil Engineering  
Computer Engineering  
Electrical Engineering  
Chemical Engineering  
Mechanical Engineering

## V. Strategic Plan Alignment: Initiatives, Activities, and Accomplishments

Objective #1: To institutionalize a culture of strategic planning and assessment

### 1. To maintain and to publish updated institutional metrics.

Maintaining and publishing institutional metrics is crucial as it provides transparent, data-driven insights that support informed decision-making, strategic planning, and continuous improvement. These metrics help track progress, assess effectiveness, and align resources with institutional goals, ensuring initiatives are evidence-based and aligned with long-term objectives. They also promote accountability and enable stakeholders to measure performance, enhancing overall institutional efficiency and credibility. The following paragraphs summarize how UPRM is achieving this goal.

- Units Attached to the Chancellor's Office
  - First, the Office of Planning, Institutional Research, and Improvement (OPIMI, by its Spanish acronym) is responsible for maintaining and updating institutional metrics through dashboards, tables, graphs, and diagrams. These tools provide valuable data to both the internal and external UPRM community, aiding informed decision-making and supporting various research projects. During the 2023-2024 academic year, the office resolved 151 information requests, with 47.0% addressed in two days or less and 55.0% in three days or less.
- Units Attached to the Deanship of Academic Affairs
  - The library collected comprehensive data on services, including consultations, activities, user visits, and use of spaces and technology. Most units employed the Integrated Library System (LIS) and Springshare to generate timely reports for strategic planning. Data showed 2,505 individual study room reservations, 3,547 group study room reservations, 6,203 uses of the Electronic Resources Center (CRE, per Spanish acronym) photocopy/printing machine, and 12,224 computer reservations, reflecting consistent demand.
- College of Agricultural Sciences:
  - The Puerto Rico Agricultural Extension Service (PRAES) reorganized and revitalized the Agricultural Extension Service Advisory Committees (CASEA) to enhance stakeholder engagement. This included hiring 21 new Agricultural Agents and Family and Consumer Sciences (FCS) Educators to improve collaboration with farmers, community leaders, and local organizations, aiming to make Extension services more responsive to community needs.

- PRAES launched the Program Evaluation and Reporting System (PEARS) to collect real-time data on personnel performance and support data-driven decision-making. Five months after launching the PEARS platform, it documented 1,821 programmatic activities with the support of 1,080 volunteers contributing around 13,000 service hours. Notably, 97% of these activities were conducted in person, highlighting its strong focus on face-to-face community engagement.
- 2. To develop an opportune updating system of the Strategic Plan based on the assessment of the institutional environment.  
 Developing a timely system for updating the Strategic Plan based on assessments of the institutional environment is crucial for keeping the plan dynamic. The following paragraphs summarize how UPRM is achieving this goal.
  - Units Attached to the Chancellor's Office
    - OPIMI, in collaboration with the steering committee, completed the new UPRM Strategic Plan 2025–2030. The office also continues to lead the development of the Infrastructure Strategic Plan, expected to be finalized in fiscal year 2025–2026, with contributions from two professors and two students. In addition, OPIMI prepared the 2023–2024 Annual Report, which served as an evaluation tool to measure progress toward the Strategic Plan's goals.
  - Units Attached to the Deanship of Academic Affairs
    - In coordination with the General Education Committee of the Academic Senate, CIVIS carried out biannual assessments to ensure it meets its objectives and operates effectively. These evaluations will review each component, the performance of coordinators, and the demand and usage of services.
    - The Teacher Preparation Program (PPM per its Spanish acronym) completed and submitted its Self-Study Report to the Council for the Accreditation of Educator Preparation (CAEP). CAEP granted accreditation with stipulations at the initial licensure level, effective from Spring 2025 through Spring 2027. A new review session format of the Teacher Certification Exam (PCMAS), required by the PRDE, was developed and delivered via Microsoft Teams at no cost to students. All of the 23 participants passed the exam; 22 passed, yielding a 96% success rate an improvement of 5% over the previous year.
  - Deanship of Administration
    - The Dean of Administration fostered strategic planning and assessment across nine departments through biweekly meetings, which streamlined processes, strengthened collaboration, and promoted continuous improvement. All units that are attached to this deanship follow the same approach.

- College of Business Administration (CBA)
  - CBA extended its plan through December 2025, with a new 2026–2030 plan to be finalized in early 2025–2026. As part of AACSB accreditation, the CBA revised the assessment plan for the B.S. in Business Administration and approved a new plan for the B.S. in Office Administration. These efforts align programs with international standards, enhance student learning, and support faculty development. To strengthen accreditation outcomes, the College also prioritized faculty research by providing resources to increase high-impact publications in peer-reviewed journals.
  - The Career Development Office introduced a new assessment form to improve data accuracy, supporting continuous improvement and data-driven decision-making across program initiatives.
- College of Arts and Sciences
  - The Geology Department is currently in the process of reviewing the Strategic and Assessment Plans. Assessment exercises were continued, especially related to the undergraduate research courses.
  - The Department of Hispanic Studies submitted an academic assessment plan for the 2024–2027 period and was approved by the faculty in December 2024.
  - The Department of Kinesiology aligned its initiatives with the institutional strategic plan through monthly faculty and staff meetings and the implementation of its KINE 2030 assessment plan. Strategies included analyzing metrics on student participation in community programs, retention and graduation rates, recruitment, achievements, and budget performance. The department also enhanced communication and transparency by publishing updates and metrics on its website, maintained by certified staff, and through social media channels. Information shared included academic programs, research, community engagement, faculty activities, and employment opportunities. To strengthen assessment practices, the department updated its strategic plan by incorporating exit surveys, student dialogues, and meetings with freshmen. Feedback informed curricular changes, new course proposals, adjustments to course schedules, and the expansion of internship opportunities.
  - The Department of Marine Sciences (DMS) is in the process of updating its Strategic Plan for the next five years.
  - At the Department of Economics, Dr. Carlos A. del Valle González was appointed to the Arts and Sciences Planning Committee and tasked by the Chancellor to contribute to the UPRM Infrastructure Master Plan 2024–2034, including leading collaborative planning events. The department reviewed the Center for Economic and Financial Education (CEEf, by Spanish acronym) mission and completed the required evaluation report (R-2425-17) for the Economics BA Program.

- College of Agricultural Sciences:
  - As part of the reaccreditation process, the Department of Agricultural Education implemented the standards of the Council for the Accreditation of Educator Preparation (CAEP) for assessing student performance and improving the curriculum. Program impact was evaluated using feedback from school principals, cooperating teachers, and alumni.
- Units Attached to the Dean of Students Affairs:
  - The Department of Counseling and Psychological Services (DCSP) efforts included the annual review of its strategic plan, systematic scheduling of workshops and educational activities, and evaluation of key services such as counseling, psychotherapy, the UNIV 3005 course, and Freshman Year Week. The Department also maintained comprehensive records and complied with institutional staff evaluation processes.
- College of Engineering
  - At the Department of Chemical Engineering assessment activities were conducted in preparation for the Engineering Accreditation Commission of ABET accreditation visit scheduled for 2026.
  - The Electrical and Computer Engineering program had an assessment process to evaluate their Program Objectives. They were revised and approved by the department on March 6th, 2025 with no change made to them.
  - The Department of Computer Science and Engineering continued its assessment program for the CIIC and INSO programs, collecting course data each semester. The plan was presented in faculty meetings and retreats, with minor adjustments based on discussions. This process is essential for maintaining accreditation, and the department remains on track for reaccreditation of both undergraduate programs.
  - At the Department of Mechanical Engineering
    - One ABET Coordinator and an Academic Orientation Official were allocated to support accreditation tasks and the departmental assessment process. The ABET Coordinator, reviewed all eight accreditation criteria, identifying potential shortcomings to maintain faculty awareness. Actions to address inadequate career or curricular advising included:
      - integrating documented professional advising in the Capstone Seminar.
      - implementing a student progress evaluation scheme applied at least four times during undergraduate studies.
      - The December 2023 ABET Closing the Loop Meeting revealed higher scores for outcomes evaluated solely by teaching assistants (TAs) than by faculty. To address this was launched a semesterly TA/Laboratory Coordinator orientation and held lab-specific meetings to standardize evaluation rubrics and protocols.

- College of Business Administration
    - The Initial Self-Evaluation Report (iSER) was submitted to and accepted by AACSB. Mentor Dr. Robert Scherer visited UPRM to review the IAC decision letter, assess accreditation standards, and provide feedback to faculty, staff, and students. Dr. Yolanda Ruiz attended the AACSB VS-2025 Societal Impact Seminar, focusing on measurement practices, stakeholder communication, and best practices. She also participated in the AACSB VS-2025 Strategic Planning Seminar (Americas), covering agile planning, KPIs, and micro-planning.
    - The Quality Assurance Report (QAR) was also submitted to ACBSP. Dr. Roberto Seijo and Dr. Luz Gracia represented UPRM at the ACBSP Annual Conference Bridges Across Borders in Las Vegas, emphasizing global collaboration, strategic planning, and stakeholder engagement.
3. To develop a system that allows to establish a relationship between the assignment of resources and the priorities established in the Strategic Plan. By generating and retaining income, a university gains financial autonomy, reducing reliance on external funding and enabling direct investment in research, infrastructure, and student services. The following paragraphs summarize how UPRM is achieving this goal.
- Units Attached to the Chancellor's Office:
    - Dr. Melissa Ramos Borges (UPRRP) and Dr. Emilia Quiñones Ota (UPRM) collaborated on a selection of works from the permanent collection, aligned with MUSA's strategic plan.
  - College of Business Administration
    - The External Advisory Board was reestablished, forming three subcommittees focused on Philanthropy, Accreditation and Curriculum Development, and Practical Experiences.
4. To develop an assessment plan that examines the performance-level of internal processes as well as the effectiveness of teaching-learning processes.
- Units Attached to the Chancellor's Office
    - The Pre-School Development Center continued to develop assessment tools aligned with early childhood needs, enhanced communication with families, and advanced its efforts toward accreditation by the National Association for the Education of Young Children (NAEYC).
    - The Academic Senate held thirteen meetings, issuing eighty-one certifications. It began the year with fifty-seven pending matters, received sixty-three new ones, and addressed ninety-two in total. The Administrative Board held twenty-two regular and three extraordinary meetings, issuing two hundred twenty-eight certifications. Five Ad Hoc Committees were created, bringing the total to seventeen actives

committees under review. For information regarding the certifications, acts, and meeting dates of the Academic Senate and the Administrative Board, visit [www.uprm.edu/senadojunta/](http://www.uprm.edu/senadojunta/).

- College of Arts and Sciences:
  - The Department of Mathematical Sciences created an Action Plan for Low-Enrollment Programs for 2025–2026. For Mathematics Education, two initiatives were launched: *Voces que Enseñan* promotes the profession through alumni stories; *Programa Puente* engages high school students with workshops, classroom observations, and partnerships to foster early interest in teaching. For Pure Mathematics concentration, the department launched two initiatives. One is Pure Mathematics: The Science Behind the Future showcases' applications of abstract concepts in technology, cryptography, and data science. Second initiative is Advanced Problem Solving and Logic Workshop that introduces students to the creative and analytical depth of the field through competitions, mentorship, and research pathways.
  - At the Department of Economics, Dr. Ricardo R. Fuentes Ramírez designed and implemented an Administrative Assessment Questionnaire, finalized the Departmental Assessment Plan, and coordinated the publication of *Avalúo Plus Magazine*, which featured departmental assessment efforts. A Student Recruitment Plan was approved. Also, the Personnel Evaluation Plan was reviewed.
- College of Engineering
  - Dr. Cristina Pomales met with accreditation and continuous improvement coordinators to review the work plan and proposals for laboratory improvement funding. An external consultation to evaluate self-study programs is scheduled for August 2025.
- College of Agricultural Sciences:
  - The Department of Agroenvironmental Sciences completed and submitted the five-year evaluation of the Plant Biosecurity curricular sequence.
  - The Department of Agricultural Economics and Rural Sociology conducted its quinquennial evaluation of its academic programs.
  - The Department of Agricultural and Biosystems Engineering approved two new assessment plans—one for student learning and another for resources and services. These plans outline evaluation frameworks and processes, with specific areas and metrics to be defined annually by the Assessment Committee.
  - The PRAES Planning and Evaluation Office identified key community needs and integrated them into the FY2026 Action Plan. These included infrastructure deficiencies (47.4%), senior services (42.1%), youth employment (34.2%), local food production (28.9%), leadership development (26.3%), and family and emotional health support (26.3%).

Objective #2: To lead higher education throughout Puerto Rico while guaranteeing the best education for our students

1. To maintain, to update, and to strengthen our academic programs by streamlining or redesign of the processes defined to effect curricular changes and to create new courses and programs
  - Units Attached to the Chancellor's Office
    - The Pre-School Development Center strengthened the curriculum through interest-based learning activities, integrated new educational materials, and offered staff training on innovative teaching and child safety practices.
    - At Information Technology Center (CTI, per its Spanish name) 163 requests for course creation on Moodle platforms were received and fulfilled. The Virtual Computing Lab (VCL) provides students with remote access to specialized course applications. The system supported 1,217 virtual machine reservations by 324 users. CTI supported the following Engineering's CAPSTONE projects:
      - Launched NEXO for student associations.
      - Developed SPARC for strategic plan management.
    - At MUSA, in collections management, two key documents—a release of liability and a copyright license—were established to support student projects and enrich collection records. Additionally, the draft collections policy was completed and is now under legal review.
  - Units Attached to the Dean of Students Affairs:
    - UNIV 3005 freshman seminar, Introduction to the Way of Life, was reviewed and updated to address the evolving needs of first-year students. Staff training, innovative teaching strategies, and student-centered activities enhanced the course's impact.
  - College of Agricultural Sciences:
    - The Department of Animal Sciences developed a curricular sequence in Meat Industries.
  - College of Business Administration
    - A letter of intent for a Master of Science in Digital Marketing (MSDM) was approved by the VP-AACA. Additionally, a proposal for a Master of Science in Supply Chain Management (MSSCM), was approved by the UPRM Academic Senate (Certification 25-39, 2024–2025) and is under Administrative Board budget review.
    - The following courses have been developed to strengthen our academic offerings and address emerging industry needs:
      - ADOF 3015 – Professional Communication with Deaf Individuals
      - SCMA 6XXX – Supply Chain Management Fundamentals
      - SCMA 6XXX – Global Supply Chain Management



- SCMA 6XXX – Technology in Supply Chain Management
    - SCMA 6XXX – Compliance & Risk Management in Supply Chain
    - SCMA 6XXX – Supply Chain Quality & Continuous Improvement
    - SCMA 6XXX – Finance for Supply Chain Managers
    - SCMA 6XXX – Distribution Excellence
    - SCMA 6XXX – Capstone: Supply Chain Simulation
    - SCMA 6XXX – Supply Chain Management Final Project
    - SCMA 6XXX – Demand Planning
    - SCMA 6XXX – Strategic Procurement and Sourcing in Supply Chain Management
    - SCMA 6XXX – Inventory Management
    - ADMI 5XXX – Data Science for Business
  - Additionally, the following courses have been updated to ensure their content remains current and aligned with industry standards:
    - ADMI 4039 – Business Research Methods
    - ESTA 3001 – Business Statistics I
    - CONT 4117 – Service Learning Through Voluntary Income Tax Assistance (VITA)
- College of Engineering
    - The Department of Chemical Engineering developed a new course, Fundamentals of Microorganisms in BioProcesses, and created a new Minor in BioProcess Engineering, which received official approval.
    - The Civil and Surveying Engineering Department approved modifications to INCI 4146 (Surveying and Topography Practice) and INCI 5065 (Bituminous Materials Production), along with the creation of INCI 6135 (Human Factors in Road Safety). The curriculum revision also introduced new required laboratories, with each area responsible for identifying and selecting an elective lab.
    - The Department of Engineering Sciences and Materials is developing a Sustainability curricular sequence and a four-years bachelor's program. The Central Administration recently approved both proposals.
    - The Department of Computer Science and Engineering in collaboration with the Puerto Rico Blockchain Trade Association, a Web3.0 course will launch in the first semester of 2025–26 as a professional elective for CIIC and INSO undergraduates and an elective for the new INSO graduate programs.
    - Recruiter and alumni surveys are conducted to assess the Electrical and Computer Engineering programs, providing valuable feedback to guide continuous improvement.
    - The INME Department approved several curricular updates:
      - INME 3815 – Computer-Aided Mechanical Drawing: For transfer students lacking CAD skills (Certification 24-67).

- INME 4014 – Introduction to Fluid Dynamics and Applications: Prepares students for Computational Fluid Mechanics and supports the planned Aerospace Engineering program.
- INME 4540 – Introduction to Ground Vehicle Dynamics: Supports vehicle design projects (Certification 25-27).
- INME 5105, 5106, 5107: Nuclear engineering courses for a proposed Nuclear engineering Minor (Certification 25-40).
- Units Attached to the Deanship of Academic Affairs
  - To support students seeking recertification in Special Education, the PPM adopted EDES 4039 – Techniques for Correcting Specific Learning Disabilities in Children from UPR-Río Piedras and developed two additional courses for Special Education K–12 certification. Following recommendations from the Teacher Certification Office, the program also revised its art methodology course. EDPE 4165 was updated and approved as EDPE 4167 – *Teoría y Metodología de la Enseñanza de las Bellas Artes* K–12, expanding coverage to visual arts, music, theater, cinematography, and dance. The PPM submitted a letter of intent to establish a Master's in Education with a Specialization in Learning Experience Design Integrating Artificial Intelligence. The proposal was endorsed by the Dean of Academic Affairs, the Chancellor, and the UPR Vice Presidency for Academic Affairs.
  - CREAD, in collaboration with the Puerto Rico Department of Economic Development and Commerce (DDEC), established an alliance to launch the Computer Science Professional Certification Educational Program. This initiative enables participants who complete the basic programming academy to advance to the CRODEMY academy, which offers an industry-endorsed short credential through nine fully online courses. Seven of the nine courses have already been developed, marking significant progress in delivering an innovative program aligned with market needs. Also, CREAD implemented the distance course evaluation rubric, awarding the first Quality Certification to the academic course ADOF 3016(the Keyboard and Its Applications, taught by Prof. Milagros Castro from the College of business Administration).
- College of Arts and Sciences
 

The Department of Economics updated master syllabi for all undergraduate ECON courses per UPR Certification No. 125 (2023–2024). An alignment report on Students Learning Outcomes (SLOs) across institutional, college, and program levels was approved, along with reports on academic profiles, grade trends, and student feedback from orientation. In addition, Dr. Eduardo Kicinski initiated a study on grade variations in ECON 3021. Also, the department launched a new undergraduate course, Economics for Wellbeing and Sustainability (ECON 3026). It also approved the full course list for a proposed Master's Program in Sustainable Development and made several curriculum revisions.

- The Department of Hispanic Studies established an ad hoc committee on program strengthening to lead the development of a comprehensive enhancement plan, including a curriculum review and an analysis of the student profile.
- At the Department of Marine Sciences, Dr. Johana Rotterová revised the syllabi for Marine Microbiology and Marine Parasitology, creating a two-course sequence—Marine Microbiology I (CMOB 8635) and Marine Microbiology II (CMOB 8636)—now available for enrollment.
- English Department undertook significant curricular reforms, particularly in the Writing and Communication minor. Grant funding supported the foundation of a Curricular Sequence in Media Studies, resulting in five new course proposals. Two INGL 3018 Media Aesthetics and Production and INGL 3019 Media, Power, and Representation were approved, with the former taught in spring 2025 and the latter scheduled for fall. The remaining three are under faculty committee review. Also, the letter of intent for the Film Program was approved by UPR Vice President.
- The Department of Geology approved a curricular revision of its bachelor's program, with most course updates finalized at the faculty level and the remaining courses under review by the faculty curricular committee.
- At the Hispanic Studies Program an online curricular sequence in Academic and Professional Writing in Spanish was developed. An interdisciplinary course in Forensic Linguistics was approved as part of the Criminality Curricular Sequence with the Department of Social Sciences. In addition, a course on Linguistics and Economics was proposed in collaboration with the Economics Program.
- The department began of Kinesiology updating its curriculum by reducing credit requirements and introducing new courses such as pickleball, first aid in sport settings, and anatomy and kinesiology.
- At the Department of Psychology, all master syllabi references were updated, and three minors were developed: one in General Psychology for non-majors, and two focused on Clinical and School Psychology for psychology students. At the undergraduate level, three new elective courses were approved Principles and Models of Psychotherapy, Behavioral Interventions for Children and Adolescents, and Introduction to Group Therapy. A new course, Introduction to Psychological Consulting and Collaboration, developed by Dr. Cristina Perea, was approved at the departmental level.
- The Department of Social Sciences submitted the creation of a new minor concentration in Criminology. This proposed sequence emphasizes a sociological and interdisciplinary approach to criminal behavior, public policy, and victimology, with new courses developed to support its academic framework. The creation of a joint Master's and Doctoral program in Applied Social Sciences was approved. This graduate program will be offered online and in the evening.

2. To support and to acknowledge those professors who are committed to teaching, to development of new professionals, and to excellence

- Units Attached to the Deanship of Academic Affairs
  - The University of Puerto Rico, Mayagüez Campus was accredited by the Middle States Commission on Higher Education (MSCHE) until 2035. This accreditation reaffirms the university's commitment to academic excellence, institutional integrity, and continuous improvement. It also ensures that the institution meets rigorous standards of quality in education, governance, and student support services.
  - At the PPM, the new Clinical Experiences Coordinator restructured the supervisor training process, creating a more rigorous and accessible certification model. Over 100 active teachers from the PRDE completed the online certification course to supervise practicum students.
  - At the Army ROTC, four faculty members completed the Army Instructor Course and three completed the University of Louisville Master Educator Course.
  - The Professional Enrichment Center (CEP, per Spanish acronym) hosted 44 activities for the university community, with an emphasis on themes relevant to faculty and graduate students. In collaboration with other offices, CEP accredited more than 40 activities aligned with its mission to enhance the quality of education.
  - CREAD has continued investing in the professional development of the university community, training more than 1,056 faculty members in essential skills for online teaching.
- College of Engineering
  - The Department of Civil Engineering and Surveying welcomed Dr. Magda S. Galloza Carrero as Assistant Professor and approved the probationary appointment of Dr. Luisa I. Feliciano Cruz as Assistant Professor, effective July 1, 2025.
  - The INME Department hired Dr. Brandon Colón, expert in Materials Science and Additive Manufacturing, to lead the curricular review of the Materials Science and Engineering laboratory.
- College of Arts and Sciences
  - At the Hispanic Studies Program a series of literacy workshops was organized to support faculty.

3. To provide an adequate and pleasing atmosphere to support teaching learning processes

- Units Attached to the Chancellor's Office
  - Ombuds Office managed a total of 186 situations (see Table #14 for details) Most were consultations and academic matters, followed by student-teacher issues, students services and grade appeals.

Cases were reviewed impartially, students received coaching on options, policies, and voluntary resolution—making the process educational for all parties.

Table 14. Ombuds Office Managed Situations

| Category            | Cases* | Notes/Examples                                                                            |
|---------------------|--------|-------------------------------------------------------------------------------------------|
| Consultations       | 101    | General inquiries handled by the Ombuds office                                            |
| Academic situations | 29     | Regulations, enrollment offerings, validations, withdrawals, exemptions, probation, exams |
| Student–teacher     | 19     | Civility, evaluation methods, attendance, make-ups, incompletes                           |
| Student services    | 15     | Issues with student-service offices                                                       |
| Grade appeals       | 15     | Guidance on policy and course-grade review process                                        |
| Student–student     | 4      | Interaction conflicts, libel, safety concerns                                             |
| Student–employee    | 2      | Service/interaction issues                                                                |
| Other               | 1      | Personal situations                                                                       |

\*Zero cases: Suspensions for lack of progress, sexual harassment, plagiarism, reasonable accommodation, safety, teacher–student (faculty reports about students).

- In 2024–2025, the Office of Services for Students with Disabilities (OSEI) supported its mission through the work of student contributors serving as annotators and readers, while also processing a significant number of new and renewal applications for services. These efforts ensured equitable access and academic support for students with diverse needs. (See tables 15 and 16 for details).

| Students Contributors         | Second summer (July 2024) | First semester | Second semester | First summer (June 2025) |
|-------------------------------|---------------------------|----------------|-----------------|--------------------------|
| Annotated in class            | 0                         | 6              | 7               | 1                        |
| Reader in mid-term exams      | 0                         | 2              | 1               | 0                        |
| Score/read on midterm exams   | 0                         | 2              | 1               | 0                        |
| Annotator/read on final exams | 0                         | 2              | 1               | 0                        |
| Volunteer Annotators'         | 0                         | 22             | 22              | 1                        |

Table 15. Office of Services for Students with Disabilities Summary

| Fiscal year 2024-2025     | New applications completed | Renewal applications completed | Total of applications |
|---------------------------|----------------------------|--------------------------------|-----------------------|
| Second summer (July 2024) | 21                         | 1                              | 22                    |
| First semester            | 610                        | 224                            | 834                   |
| Second semester           | 703                        | 56                             | 759                   |
| First summer (June 2025)  | 188                        | 2                              | 190                   |

Table 16. Office of Services for Students with Disabilities Applications per Period

- College of Agricultural Sciences:
  - Agroenvironmental Sciences acquired a projector and screen to support laboratory instruction in Soil Sciences and installed renewable energy systems in shade structures at Finca Alzamora. Instructional innovation included the integration of drone technology for weed monitoring in the Weed Control course (PROC 4017) and the use of mobile applications and digital platforms in the Pesticides and Their Use in Agriculture course (PROC 4019). In the Nursery Management course, sustainability practices such as a solar-powered irrigation system and the use of green manure were implemented. The Plant Breeding course (CFIT 4007) incorporated interactive genetics exercises through digital platforms. Additionally, Navure® statistical software was introduced in AGRO 5005 and AGRO 6600 to support advanced data analysis.
  - Agricultural Economics and Rural Sociology acquired 17 desktop computers and upgraded 17 licenses of the STATA statistical software.
  - The Department of Animal Sciences enhanced its research capacity by acquiring a real-time PCR system, a refrigerated centrifuge, and a laboratory-grade refrigerator.
  - AGRICULTURAL AND BIOSYSTEMS ENGINEERING strengthened its academic and research infrastructure by acquiring 21 workstation computers and a Leaf Porometer to support the future Remote and Proximal Sensing Center. Through HATCH Project 557, the department also obtained a Bambu 3D laser printer, a Falcon2 Pro 60W laser engraver and cutter, and an HP T210 thermal inkjet plotter, enhancing applied research and student training in agricultural processing and design. Also, undergraduate and graduate students engaged in research activities through HATCH projects (Dr. Huertas) and the NOAA-RISA project (Dr. Harmsen), contributing to modeling, data analysis, and processing. Additionally, Dr. Salvador F. Acuña led weekly mentoring sessions as part of the USDA-NIFA-RIIA FY 2023 project, involving eight undergraduate and two graduate students from the Colleges of Engineering and Agricultural Sciences.
  - At the Department of Agricultural Education, Dr. Janitza Saavedra, served as advisor to the Future Farmers of America (FFA) and collaborated with AE HORT students and the Five Days in Our Land initiative. She also mentored students Paola Santiago and Alondra Ramos Gerena as part of the USDA-NIFA-funded research project Fostering Agricultural Professionals: A Comprehensive Approach to Recruit and Retain Students in Food and Agricultural Sciences Programs in Puerto Rico. The project includes a School Counselor Academy, school visits, and career talks to promote agricultural sciences among youth.
- College of Arts and Sciences:
  - The Department of Economics received \$27,908 in Technology Fee funds to upgrade the SH-301 computer laboratory with 26 Dell OptiPlex PCs and to replace two classroom units.

- At the Department of Kinesiology, the physical spaces were improved, including updates to the exercise physiology, strength and conditioning labs and the addition of a new research and study room (Mangual B-7). Support services were strengthened with in-service training on emergency response and Title IX compliance, along with the development of a departmental safety manual.
- The Department of Social Sciences expanded its research capabilities through access to programs like IBM SPSS, Qualtrics.XM, End Note, and N Vivo, which supported both faculty and student research.
- College of Business Administration
  - Room AE-350 was designated as a dedicated study space for graduate students, equipped with seven computers, a projector, and meeting space. Additionally, 28 new computers were installed in AE-106 and 58 in the AE-102 and AE-105 labs, all configured with Windows 11 and academic software.
- Units Attached to the Deanship of Academic Affairs
  - At the library, IT staff optimized the library's technological infrastructure to improve operations and services. All staff's computers were renewed, and key workstations for student assistants, catalog access, and collections were upgraded with solid-state drives for higher performance.
  - RUMex extends academic offerings from 4:30 p.m. to 11:00 p.m. in a safe environment, allowing for the recruitment of new teaching resources without compromising academic excellence.
  - CREAD improved its physical facilities by remodeling and transforming two high-tech classrooms and upgrading its recording studios, providing an optimal environment for producing high-quality educational content.
  - The PPM director developed and implemented a new protocol to assist incoming students and advise them on updated teacher certification requirements. In parallel, the Academic Counselor created a protocol to accelerate inquiry processing. The four-transition points protocol was also completed to meet accreditation requirements for the PPM.
- Units Attached to the Deanship of Administration
  - The EHS Office strengthened its pest control program to ensure a safe and healthy environment. It also ensured compliance with the Resource Conservation and Recovery Act (RCRA) for proper management of hazardous and non-hazardous waste.

### Objective #3: To increase and diversify the Institution's sources of revenue

#### 1. Increase income generated by UPRM, withholding it completely for its particular needs.

- Units Attached to the Chancellor's Office:
  - Operationally, the CID processed 1,783 payment transactions totaling over \$6.5 million, issued 349 invoices worth \$21.8 million, and supported 560 purchasing orders totaling \$4.5 million—reflecting a substantial increase in procurement volume from the previous year. Total research expenditures reached \$20.5 million, with salaries, stipends, and subawards constituting the largest spending categories.
  - The university's Pre-School Program identified funds and submitted proposals to raise nearly \$60,000 to support employee initiatives and enhance the quality of services and facilities offered.
  - At the Natatorium, the winter rentals increased, with 11 universities using the facilities, generating additional income and enabling the reactivation of the diving-area Jacuzzi.
  - The Press Office, distributed 52 official press releases, which resulted in 476 earned media publications in local and international outlets (See figure #16).

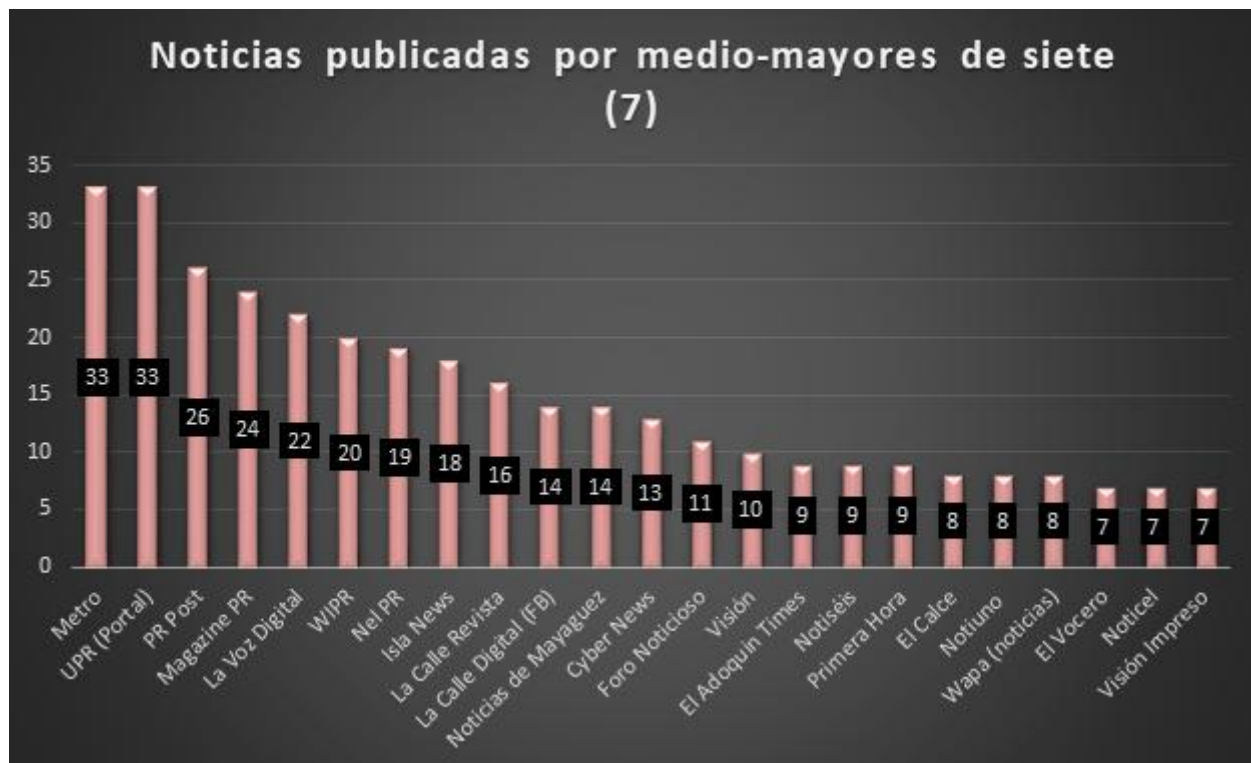


Figure 16. Media Publications in Local and International Outlets



- The Press office published 228 articles on the official UPRM website (uprm.edu), serving as a dynamic repository of institutional knowledge and innovation. A total of 358 requests for press coverage of UPRM events. A total of 193 Videos posted to UPRM YouTube Channel. The Return on Investment (ROI) serves as a key metric to quantify the communication value of press efforts. Common in public relations, ROI estimates the cost of replicating media exposure—through press, radio, television, and digital channels—if it were paid advertising. This approach allows the Press Office to present its reach, visibility, and reputational gains in economic terms. For the fiscal year 2024-2025, the ROI was \$8,298,588.25. (See tables below for details.)

| Traditional Media                                                    | Estimated ROI (USD)  |
|----------------------------------------------------------------------|----------------------|
| News published in the media, press releases sent by the Press Office | \$ 753,940.00        |
| Articles published on uprm.edu                                       | \$ 118,000.00        |
| Foro Colegial, Radio Universidad                                     | \$ 62,400.00         |
| <b>Total</b>                                                         | <b>\$ 934,340.00</b> |

| Social Media Platforms              | Estimated ROI (USD)    |
|-------------------------------------|------------------------|
| Facebook (UPRM + Prensa RUM)        | \$ 5,589,685.57        |
| Instagram (UPRM + Prensa RUM)       | \$ 674,429.40          |
| X (Twitter) @uprm + @PrensaRUM      | \$ 1,004,400.00        |
| You Tube (Prensa RUM @videocolegio) | \$ 86,111.20           |
| LinkedIn (Prensa RUM)               | \$ 9,622.08            |
| <b>Total</b>                        | <b>\$ 7,364,248.25</b> |

| Communication Channel      | Estimated ROI (USD)    |
|----------------------------|------------------------|
| Traditional Media Coverage | \$ 934,340.00          |
| Social Media Platforms     | \$ 7,364,248.25        |
| <b>Grand Total</b>         | <b>\$ 8,298,588.25</b> |

- At the UPRM Art Museum (MUSA per Spanish name) two fundraising initiatives were organized: GivingTuesday (Dec. 3, 2024): Focused on raising funds for conservation materials, Sábado de arte: Poetry for MUSA: Held in collaboration with the poetry collective *Todo lo arreglo con poesía*. This year, the museum director managed a total of \$11,688.00 in monetary donations: \$2,841.00 (online), \$4,650.00 (checks), \$197.00 (cash), \$3,000.00 (Fundación Flamboyán), and \$1,000.00 (Incubadora Creativa). Additionally, in-kind donations were secured, including equipment valued at \$730.58 and materials estimated at \$300.00, for a total of approximately \$1,030.58.

- Units Attached to the Deanship of Administration
  - The office through the UPRM Housing Facilities, Inc., presented a Request for Proposal (RFP) process for the Darlington Building, as a Long-term Concession Lease Project, including Design – Build – Finance – Operation - Maintenance (DBFOM). The proposal was approved under Certification 133 (2024-2025) of the UPR Governing Board.
  - The Dean's Office also submitted for evaluation a proposal to establish a new multi-level parking facility, to provide additional parking facilities for the university community.
  - Below is a list of some of the contracts administered by the Dean's office this past fiscal year:
    - Pepsi Co. (Vending machines)
    - B-Billboard NC, LLC (Advertisements wall at Darlington Building)
    - Space leases:
      - Popular Bank of Puerto Rico
      - Freedom Chiropractic, PSC
      - AT&T, Liberty and JI Sites (Communication Antennas) - located at Darlington Building and The Hotel Colegial (Students Athletes Residence)
    - Food service concessions throughout to the Campus:
      - Batatas Potatoes (Students Center and Food Truck)
      - RB Coffee, LLC (Food Truck)
      - Habibi Services, LLC (Cafe at ADEM and Food Truck)
  - The Property Office generated \$10,789.78 in income through the sale of junk vehicles, direct sales, and the recycling of unused equipment and surplus materials.
  - University Service Enterprises collected \$372,499.45 in fiscal year 2024–2025, generating a profit of \$120,751.63. Collections from internal invoices totaled \$56,101.20.
  - Printshop sales totaled approximately \$512,165.87, with \$224,877.16 (44%) from internal customers and \$287,288.71 (56%) from external customers.
  - Buildings and Grounds Department received income from:
    - The charging fees for the use of chairs, tables, and tents during official campus activities. The income was \$1,700.00.
    - Billing for Lost Keys: Assessing fees for the replacement of lost official keys, in accordance with established keys and locks procedures. income was \$74.50.
- Units Attached to the Deanship of Academic Affairs
  - RUMex helps retain tuition revenue on campus. After covering instructional costs, net income is distributed as follows: 50% to the Dean of Academic Affairs, and 25% each to the departments and Chancellor. These funds are placed in a discretionary account for departmental use

- At the Army ROTC, over \$1 million in scholarships were awarded, reducing students' financial burden and supporting recruitment and retention.
  - At the Educator Preparation Program (PPM per Spanish name), Noyce Teacher Scholars (NOTES) is a project, sponsored by the National Sciences Foundation, brings around \$240,000 per year to the institution during 5 years. Also, HELPERS project: Helping English Learners & Partners Excel with Research-based Practices & Support is a project, sponsored by the US Department of Education and the Ohio University, which provides \$20,000 for 5 years.
  - Title II tuition waiver from the PRDE brought more than \$10,000 to UPRM. This waiver program expanded to cover the second semester and summer sessions. The program benefited two PRDE teachers.
  - The PPM generated over \$37,000 in additional income. These funds are being reinvested in the remodeling of classrooms and administrative spaces, enhancing the physical infrastructure and overall learning environment of the program.
  - At the library, OHL collaborated with the Humanities Action Lab to secure a \$3,000 stipend for a UPRM student to produce the short film Water Protectors. Created by Carhianie Vargas Padín, the documentary was developed in partnership with the Surfrider Foundation Rincón's Blue Water Task Force and funded by the Mellon Foundation.
  - Veterans Affairs reported steady demand, with 563 requests under Law No. 203 and 312 Educational Benefit applications in Fall 2024, and 535 and 308, respectively, in Spring 2025—supporting veterans and eligible populations.
- Units Attached to the Dean of Students Affairs:
    - The Department of Social and Cultural Activities generates income through memorabilia sales and the Student Center Game Room. For the fourth time, it received a donation from BAE Systems Inc., funding \$6,000 in scholarships for 17 science and math students pursuing graduate studies.

| Concept                                   | Total income (\$)  |
|-------------------------------------------|--------------------|
| Online and office sale of memorabilia     | 8,540              |
| Revenue with graduation pin 2025          | 14,715.70          |
| Sale of memorabilia on Graduation 2025    | 4,638.11           |
| Game Room income                          | 3,516.50           |
| Revenue for Tarzán Room (Cert. 18-19-200) | 450                |
| <b>SUB-TOTAL</b>                          | <b>\$31,860.31</b> |
| BAE Systems Scholarship                   | 6,000              |
| <b>TOTAL INCOME FOR 2024-2025</b>         | <b>\$37,860.31</b> |

Table 17 Department of Social and Cultural Activities Income: 2024–2025

- College of Engineering:
  - Dean Cristina Pomales requested adding a dedicated section on the UPRM donations page for the College of Engineering. The page and fundraising account are now active at [uprm.edu/donaciones/coe](http://uprm.edu/donaciones/coe).
  - The Azmat A. Assur Foundation granted \$314,629 to UPRM to enhance academic facilities, support high school transitions to engineering, and expand scholarship access.
  - UPRM and Lilly del Caribe Inc. launched a \$6.1M scholarship program for students in Engineering, Science, Technology, and Business Administration, prioritizing first-generation and socioeconomically disadvantaged students. Benefits include financial aid, professional development, and potential internships, co-ops, or summer programs with Lilly.
  - The Department of Engineering Sciences and Materials offers a biannual Fundamental Engineering Revalidation Exam Prep Course, praised for exceeding exam requirements. In 2025, it was also delivered at Sargent & Lundy, enabling industries to train employees on-site. Also, the department's multidisciplinary faculty teach core engineering courses and secure external research funding, contributing to success in proposal submissions and indirect cost generation. Additionally, fundraising efforts support the development of the Bachelor in Sustainability, RUM's first transdisciplinary program. The initiative engages multiple academic faculties, provides scholarships and resources, and includes a 2025 Summer CAMP in ISOS to promote student involvement in sustainability.
  - The Department of Electrical and Computer Engineering hosted its Spring 2025 Industrial Affiliates Program (IAP, [iap.ece.uprm.edu](http://iap.ece.uprm.edu)) Annual Conference on May 7–8, coordinated by Dr. Raúl E. Torres. IAP promotes hands-on learning through industry-sponsored projects of up to \$5,000. This year's event featured 35 projects, 174 participants (including 28 women), and 8 sponsors. Students presented their work to faculty and industry representatives.
  - The Department of Civil Engineering and Surveying opened donation account RECA0401, accessible via the campus fundraising page. In collaboration with the Alumni and Philanthropy Office, the "Tu Huella, Tu Legado" campaign was launched to fund auditorium remodeling and a new audio system. Donors contributing \$500–\$8,000+ (Bronze to Platinum levels) will be recognized with plaques at the auditorium entrance.
  - The Department of Computer Science and Engineering received a \$513,284 NSF MRI grant (OAC-2407329) for the acquisition of a specialized GPU cluster with 16 NVIDIA H100 cards to support AI, hyperspectral imaging, and optics research. The project supports Large Language Models (LLM) and Large Vision Models (LVM) training and is part of the Center for the Advancement of Wearable Technologies (CAWT). The facility will be unique in Puerto Rico and the Caribbean.

- College of Agricultural Sciences:
  - The Gurabo Substation generated approximately \$25,687 in revenue from the sale of agricultural products and livestock, with an additional \$37,400 recorded from livestock transfers to the Lajas Substation. Key research initiatives included Project H-372 (IR-4 Integrated Pest Management), which involved harvesting pineapples, bananas, and papayas, generating approximately \$5,372. The breeding and sale of Holstein cattle produced approximately \$57,715, while land leasing contributed an additional \$1,000 in revenue.
  - As of April 30, 2025, the Juana Díaz Substation generated \$114,084 in revenue for fiscal year 2025. An additional \$27,000 is projected through June 30, 2025, bringing the expected total to \$141,084.
  - The Pesticide Applicator Program (PAP) offered 100 training courses, generating \$219,141, and secured an external contract with Development of Agricultural and Livestock Industries (ADEA) for \$200,000, totaling \$419,141 in annual revenue. The FCS Program generated \$34,850 through its Food Safety Certificate Course. The Master Gardeners Program enrolled 150 participants, generating \$22,500 in revenue.
  - At the Adjuntas Substation generated \$56,551.00 in equity for this fiscal year.
- College of Arts and Sciences
  - At the Department of Geology, the NOAA/NTHMP grant for the Puerto Rico Seismic Network (PRSN) was approved at \$150M. The Landslide Hazard Mitigation Office launched the LandslideReady Community Engagement Program (2024–2026), funded by USGS with a \$473K budget, enabling expansion of outreach, hiring of Assistant Researcher Ms. Isabella Camara, and acquisition of a community engagement vehicle. In addition, Profs. Raiza Quintero and Thomas Hudgins secured \$499,917 through a Cooperative Agreement with USGS for the project Assessing the Industrial Mineral Potential of Puerto Rico (2025–2028), which will provide opportunities for undergraduate and graduate research.
  - At the Department of Kinesiology, through facility rentals (per Certification 20-21-090), \$7,743.08 was processed. Faculty also secured targeted donations, including \$800 for student conference travel (Dr. I. Figueroa), safety equipment (Dr. Álvarez), \$20,800 for new lab equipment (Dr. Martínez), and \$300 from the Exercise is Medicine on Campus Mascot Challenge (Dr. Torres). Research proposals by new faculty further expanded funding, with Dr. Martínez obtaining \$4,952 and Dr. Torres acquiring new equipment through an interdisciplinary initiative.
  - The Department of Nursing was certified as a continue education provider by the Boards of Pharmacists, Counseling Professionals, Technology and X-Ray Technicians, and Psychology. The department scheduled 11 Continuing Education (CEU) activities, including five in-

person sessions and six online modules. Faculty provided CEU services at Bella Vista, Perea, and La Concepción hospitals. Participation in the Puerto Rico College of Cardiology's 2024 Scientific Convention generated \$1,000 in revenue, with the 2025 convention expected to yield \$1,875.

- The Department of Marine Sciences partnered with the Department of Natural and Environmental Resources (DNRA), ISER-CARIBE, and private donors to provide \$276,237.42 in graduate student support, benefitting over 75% of the department's student body. The department secured nearly \$300,000 to fund 72 research assistantships (RA) through external grants, donations, and collaborations. Highlights include \$14,265 from NASA-OCEANOS for 4 undergraduate assistants, and \$96,676 in support from EcoElectrica (2 RAs), CARICOOS (2 RAs, \$18,000), and the DNRA-CRCD/NSF-RAPID Microbiome Project (1 RA, \$20,000). Additionally, 15 teaching assistantships were funded by the UPRM Biology Department. Eight graduate students received hourly wages for research and collection maintenance, and one for administrative tasks, totaling \$22,524. The department also received \$15,000 from the Maxwell-Hanrahan Foundation to support graduate fieldwork, funding proposals from 6 students (two Ph.D. and four M.S.). In addition, ISER-CARIBE hired 14 graduate students, contributing \$219,039 in salaries. The department renewed MOUs with CARICOOS, EcoElectrica, Sea Grant, and ISER-CARIBE through 2026, including space rentals on Isla Magueyes. New agreements are being developed with ISER and DNRA for coral reef restoration, and with the Puerto Rico Council on Research and the Department of Energy and Development to install a photovoltaic system at the main building (MG831) in Magueyes, currently under legal review. Revenue from space rentals reached \$211,554, reinvested in infrastructure and facilities maintenance. Dormitory rentals generated \$3,251 to support dormitory upkeep. Boat usage generated \$32,141.28 to support vessel maintenance. Diving services and tank rentals produced \$4,536, contributing to compressor and tank maintenance. In total, DMS revenue reached \$251,446.91, of which \$135,964.12 was reinvested in fuel, equipment maintenance, boat consoles, air conditioning, vehicle repairs, and other essential needs to sustain Isla Magueyes operations.
- The Department of Mathematical Sciences develops instructional materials for core mathematics courses. INFOMATE also generated income by offering preparatory resources for students taking the Mathematics Diagnostic Exam. All revenue generated through these initiatives is allocated to strengthen teaching, research, and the administrative infrastructure.

- College of Business Administration
 

CRECEN significantly diversified the CBA's revenue by managing nearly \$4 million in federal resources to support academic innovation, infrastructure, and student services. From July 2021 to June 2025, \$2,226,882.87 of these funds were utilized.

The Business Center secured multiple grants as the following: BEDC funded by Economic Development Administration (EDA), \$265,313.26, BPPR Seed Fund (\$200,000, PAGM-TAP (EDA, \$830,932), and AREA-E

  - (Housing Fund, \$613,732 annually). A Build 2 Scale proposal (\$3,054,000, with \$600,000 in matching funds from PRTRUST and CytolImmune) remains under review. One proposal, submitted by Dr. Moraima de Hoyos, was sent to EDA's Build to Scale program.
  - EDUCON generated a total revenue of \$149,020.00. This income is broken down as follows:
    - \$42,918.00 from direct participant payments.
    - \$64,962.00 from participants sponsored by CRECEN.
    - \$180.00 from inter-institutional account billing.
    - \$3,600.00 from office rental to the CRECEN Cluster
    - \$37,360.00 from agreements with Team 1144 for the delivery of professional certifications.
    - Total expenses amounted to \$110,769.71, distributed among salaries, materials, technology platforms, and instructor compensation. This resulted in a net income of \$38,250.29, reflecting efficient and sustainable financial management.
  - The CBA hosted its inaugural Golf Tournament at Aguadilla Golf Course to raise funds for the STEAM Business Summer Camp 2025. The event raised \$29,380.19 through registration, sponsorships, and donations, enabling 100 high school students (grades 9–11) to explore Business Administration through educational and developmental activities.
- Units Attached to the Deanship of Academic Affairs
  - The OHL and GRIC completed the project *Archivo de Respuestas Emergencias de Puerto Rico* (AREPR), funded by a \$172,588 Mellon Foundation sub-award through Michigan State University, which supported hiring a metadata librarian, assistant students, and researchers. In addition, Dr. Chansky and Prof. Alvarez secured a three-year \$1.833M Mellon Foundation grant to expand OHL initiatives, enabling the hiring of two full-time researchers, a librarian, and multiple student assistants.
  - Twenty-three students received Air Force scholarships covering tuition, fees, books, and stipends, totaling approximately \$340,000. Additionally, 11 cadets were awarded scholarships to obtain their Private Pilot's License (PPL), amounting to \$180,000.

CREAD launched five new courses, bringing its total offerings to more than 96. It also began offering professional certification packages that bundle existing courses into comprehensive programs. Course enrollments and certifications generated approximately \$62,000 in income during the year.

Objective #4: To implement efficient and expedient administrative procedures

1. Dedicate human and fiscal resources to automation and streamlining of critical internal processes.
  - Units Attached to the Chancellor's Office
    - The CID implemented key modernization and capacity-building initiatives, including:
      - Launching the post-award component of Streamlyne, comprehensive research administration platform, improving grant and amendment tracking.
      - Collaborating with the Post Award Grants Management – Technical Assistance Program (PAGM-TAP) to identify areas for administrative improvement and conduct a needs assessment.
    - The CID Budget Office introduced updated procedural manuals and digital calendars for improved tracking and compliance, while also conducting training and needs assessments.
    - CTI contributed to the efficiency of administrative procedures through the following initiatives:
      - In collaboration with the Human Resources Office, CTI developed a digital ID application now available to all UPRM employees.
      - Together with the Finance Department, CTI continued migrating applications and sales portals to the NEXT payment platform, creating a standardized and secure payment process. Migration will continue until all applications are fully integrated.
      - CTI supported multiple offices in the transitioning of its official pages to the institutional WordPress platform, ensuring compliance with digital accessibility requirements. Updated pages included UPRM webpage, Academic Affairs, Registrar, Admissions, Financial Aid, Medical Services, Counseling and Psychological Services, Student Affairs, Administration, Human Resources, Transit and Surveillance, and the Colleges of Agricultural Sciences, Engineering, Business Administration, and Services for Students with Disabilities.
      - In joint work with the Office of Auxiliary Services, access to the RUM telephone box via Voice over IP is being incorporated into the same system, allowing employees to use the extension of the Campus box at home. During this year 1,492 accesses for employees and professors and students for academic use were created in this system.
      - The CTI responded to 4,496 requests. These include user support, technical problems, systems access, and programming changes.
      - During the Section Selection and Enrollment Adjustment processes of the academic year 2024-2025, 22,450 tickets were attended using Academic Communication Platform ([ajustes.uprm.edu](https://ajustes.uprm.edu)).



- Units Attached to the Deanship of Administration
  - The Auxiliary Services Departments implemented several electronic processes: electronic submission of certifications and invoices for telephone and cellular services; also, online payments for phone, cellular, and postal meter maintenance; electronic requests for telephone access codes and postage fund disbursement; secure document signing through Sign Request/Adobe Sign; and ACH payments for campus PO Box fees via the USPS Enterprise Payment System.
  - At the Buildings and Grounds Department, eMaint software was implemented in March 2025 for managing maintenance work order requests.
  
- Units Attached to the Deanship of Academic Affairs
  - The Registrar's Office expanded the use of online platforms ([services.portal.upr.edu](https://services.portal.upr.edu) and [solicitud.upr.edu](https://solicitud.upr.edu)). The office also implemented systematic collection and analysis of service data (e.g., graduates by college and municipality, online service volumes) to guide planning and resource allocation. In addition, it advanced to the fourth year of the Readmissions and Transfers reengineering plan, incorporating agile workflows, fee processing, and automated communications to improve transparency and reduce cycle times.
  - CREAD completed the development of a new online payment platform, aligned with the highest standards of usability, security, and user experience. It also updated its web presence by redesigning both the main site and the online course portal (<https://decepenlinea.uprm.edu>). As part of its branding and modernization efforts, both portals will be merged under a new institutional domain ([cread@uprm.edu](mailto:cread@uprm.edu)) creating a unified digital identity, improving navigation, and centralizing all CREAD services in one modern platform. The resources and guidance page for faculty and students on distance education (<https://adistancia.uprm.edu>) was updated to ensure access to relevant, up-to-date, and user-friendly materials for the university community.
  - The Professional Enrichment Center (CEP, per Spanish acronym) webpage was redesigned to better serve the community, and a new user registration system is being developed to improve access to data for statistics and reporting.
  - The Oral History Lab (OHL) expanded its capacity through new external funding. Researcher Natalia Betancourt-Malavé implemented a project-management framework in Microsoft Teams Planner, streamlining task tracking, deadlines, and cross-unit coordination. This tool improved resource allocation and reduced duplication. In parallel, Prof. Natalia Hernández collaborated with Circulation staff to fully automate equipment lending via the Integrated Library System (SyrsiDynix). As a result, equipment loans rose from 71 in 2024 to 413 in 2025—a 481% increase. Automation also enhanced OHL's partnership with the Center for the

Development of Bibliographic Research and Information Skills (CEDIBI). Using Springshare's LibCal and related tools, the units now manage registrations, evaluations, and attendance statistics electronically. Users can book editing and interview rooms online, while staff access real-time analytics to optimize scheduling. The Graduate Research and Innovation Center (GRIC) enhanced efficiency by automating visitor tracking and user-account updates, streamlining workflows and data accuracy. It also systematized recurring tasks such as thesis and dissertation deposits into Scholar@UPRM. After migrating the repository to Atmire's cloud platform, staff redesigned submission forms by document type, simplifying student self-deposits and reducing processing time. GRIC is also collaborating with the Office of Graduate Studies (OGS) to reconcile student-information spreadsheets, aligning datasets, eliminating duplicate communications, and establishing a support pipeline from thesis defense scheduling to repository deposit.

- Units Attached to the Dean of Students Affairs:
  - Short instructional videos were developed to guide students on Office of Services to Students with Disabilities (OSEI per Spanish name) services, including how to complete forms and access the portal to confirm reasonable accommodations.
  - At the Department of Social and Cultural Activities, a Capstone engineering team developed the first phase of NEXO (<https://nexo.uprm.edu/>), a digital platform designed for student organizations. NEXO includes features such as organizational profiles, event calendars, user engagement tools, and report generation. Future Capstone cohorts will continue to enhance the platform, working toward a fully functional application. Phase I is scheduled to launch in August 2025.
  - The Financial Aid Department annually implements internal administrative processes, including student support at the Information Center, document management, task scheduling, and regular internal audits.
  - The Band and Orchestra Department automated digital form for recording activities. This tool enables organized, comparable data collection to support future annual reports. New classification categories, such as 'special grouping' and 'outside the school period,' were added to better reflect operations. Also, this department implemented an automated Excel template to document and analyze activities by semester, type, group, and location. With integrated analytical tools, this system generates accurate statistics that streamline annual reporting and strengthen long-term planning.
  - The Department of Medical Services (DSM) ensured compliance, expanded access to health resources, and optimized operations to serve the UPRM community. With an estimated impact of 6,000 individuals, including students and visitors, DSM strengthened clinical services, prevention initiatives, and administrative efficiency. (See Table 18)

| Focus Area                   | Initiatives and Achievements                                                                                                                                                                                                                                                                                        |
|------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Compliance & Operations      | Maintained over 12 credentials, licenses, and operational certificates from the Puerto Rico Department of Health and federal agencies. Continued opioid management and emergency/urgent care protocols. Maintained service contracts and achieved a significant reduction in operational costs.                     |
| Billing & Insurance          | Launched Service Billing Program with contracts approved by Triple-S, MCS, Mapfre, and Humana. Updated health insurance records for more than 10,000 active students.                                                                                                                                               |
| Telemedicine & Accessibility | Certified medical faculty to practice telemedicine in Puerto Rico. Expanded follow-up medical and psychological services via telemedicine to ensure flexibility and quick access.                                                                                                                                   |
| Health & Prevention          | Sponsored disease-prevention clinics, vaccination, and educational lectures. Secured \$10,000 for the <i>Mano Amiga Colegial Project</i> to provide health education, prevention, and student support. Obtained \$69,500 funding for Family Planning PPFTX/PREVÉN.                                                  |
| Student & Community Services | Completed evaluations for new, transfer, readmitted, graduate, special permit, and career enhancement students remotely. Facilitated research initiatives including the CRUSADA/CORE Study.                                                                                                                         |
| Facilities & Safety          | Established PPE protocols that ensured uninterrupted operations during COVID-19. Began certification of the FORSSA area (Sexual and Domestic Violence Victim Management). Implemented a “paperless” process by digitizing medical-legal documents. Completed pigeon-proofing of the DSM building roof (\$5,396.50). |
| Personnel Development        | Renewed administrative appointments and hired a new full-time registered nurse. Staff participated in workshops on prevention and treatment of prevalent conditions among youth.                                                                                                                                    |

Table 18. Department of Medical Services Initiatives and Achievements

- College of Agricultural Sciences:
  - PRAES conducted a comprehensive review and update of its planning and administrative documents to align with the new PEARS platform. Revised documents include evaluation forms, demographic and reporting templates (PE-1, PE-2, PE-3, CE-9), a digital attendance form, and methodological guides for CASEA activities. All updated resources are now available on the PRAES website.
  - The PRAES Planning and Evaluation Office enhanced its Stakeholders and Merit Review process by applying qualitative research methods. In February 2025, 38 CASEA and 4 Merit Review meetings were held across PRAES's four regions, engaging 435 stakeholders. Also, two events led by Dr. Verónica Negrón welcomed 15 students each for tours of the Agricultural Experiment Station and the Animal Reproduction Research Center. Dr. Alfredo Aponte Zayas led the Agroecological Producers and Promoters Course in collaboration with El Josco Bravo (approx. 20 participants). Here was hosted the 2024 Annual

Meeting of the Eastern Soil and Water Conservation District, fostering collaboration among 30 farmers and community members.

- College of Engineering:
  - The Department of Engineering Sciences and Material developed custom electronic forms for semester guides, academic load analysis, and room reservations.
  - The Department of Computer Science and Engineering fully implemented the Flightpath application to streamline academic counseling. Additionally, the academic evaluation form for program transfers was improved, expediting the transfer process for undergraduate students.
- College of Arts and Sciences
  - The Department of Hispanic Studies administrative personnel completed a government contracting course offered by the *Oficina del Contralor de Puerto Rico*, strengthening compliance expertise. The Department Director participated in the Academic Leadership Academy for Deans and Chairs, further developing leadership skills. The department digitized student and faculty records and implemented a cloud-based Excel tool to monitor income and allocate special account funds by category (wages, meals, compensations, equipment).
  - The Department of Economics advanced its Digitization Plan by converting budget files and purchase orders from 1991–2014 into digital format, improving compliance with UPR regulations and optimizing storage space in SH-302A, SH-305, and SH-309E.
  - The Department of Kinesiology digitized accident reports using QR codes, enabled online scheduling of academic appointments, and began storing student evaluations and administrative documents in Microsoft Teams. Academic program requirements were made accessible via QR codes, while faculty and staff adopted shared electronic calendars. Departmental meetings also transitioned to digital attendance reports.
  - The administrative staff of the Department of Marine Sciences developed a comprehensive OneDrive-based spreadsheet to track each step of the purchasing process, from initial quotes to final receipt of goods and services.
  - The Department of Mathematical Sciences digitized departmental files, streamlining processes such as approvals for the Mathematics Diagnostic Exam and INFOMATE. A redesigned website ([math.uprm.edu](http://math.uprm.edu)) was launched, while INFOMATE's upgraded server and refreshed content expanded access to Precalculus resources for UPRM students and users across Puerto Rico. Enhancements to the online Mathematics Diagnostic Test also improved data management and accessibility, particularly for incoming students with lower PAA scores.
  - The Department of Psychology implemented Google Drive to manage undergraduate academic evaluations, enabling real-time updates to

student records, documentation of advising sessions, and tailored academic recommendations. The Department also standardized administrative procedures for CAISPE and the School Psychology graduate program through the development of a student handbook, practicum and internship manual, service protocols, and other operational documents.

- College of Business Administration
  - At the Research and Graduate Affairs Assistant Deanship, several initiatives were implemented:
    - A standardized process was established for evaluating time buyout requests submitted by professors seeking external funding or engaging in academic research, such as writing articles for peer-reviewed journals or preparing conference presentations.
    - Forms related to academic leave for research purposes were reviewed and updated, including the form used by professors to report the outcomes of work conducted during their leave.
    - Processes at the Business Research Center were standardized to better support academic research activities involving graduate student collaboration.
    - To more effectively manage information requests and provide guidance to prospective graduate students, a new email account (orientaciongrad.adem@uprm.edu) was created. Communications sent to this account are directed to the advisors in the Office of Student Affairs.
    - To ensure the integrity and accessibility of all work conducted within the graduate program, the activities of the research committee, the graduate committee, and committees tasked with developing new program proposals are now stored in designated master files on the Graduate School's shared drives and Microsoft Teams.
  - At CRECEN, 8 student program assistants contributed to developing guides, manuals, and SOPs. Key student-led projects from the ININ 4090 course optimized participant enrollment, reducing processing time by 10% and minimizing errors through Google Workspace tools, and developed an AI-powered chatbot for the CRECEN website, aiming to significantly reduce email response times and improve efficiency.

2. Guarantee that personnel are adequately trained to perform the work and responsibilities entrusted to them and therefore are accountable for compliance.

Throughout the year, UPRM offers a wide range of training opportunities tailored to meet the evolving needs of its personnel. All institutional deaneries, offices, departments, and programs regularly provide seminars, workshops, courses, and training sessions on various topics, including ethics, academic improvements, human resources issues, and more. These training sessions are available in multiple modalities— in-person, hybrid, and fully online—ensuring flexibility and accessibility for all employees. In many cases, these opportunities

are extended to both the internal and external communities, reinforcing the university's commitment to shared learning and development. Some examples of these trainings could be found in the Appendix A.

3. Promote and encourage service attitude and a sense of responsibility in all units. Educate all personnel about the relevance of their duties and negative impact of noncompliance on the university community.
- Units Attached to the Chancellor's Office:
    - MUSA advanced in collections management, two key documents—a release of liability and a copyright license—were established to support student projects and enrich collection records. Additionally, the draft collections policy was completed and is now under legal review.
  - Units Attached to the Deanship of Academic Affairs
    - The Graduate Research and Innovation Center (GRIC) organized workshops on the ethical use of generative AI in research, introducing emerging platforms and discussing benefits and risks. The sessions received highly positive feedback, confirming their value for graduate students. GRIC also collaborated with the Office of Graduate Studies to address recurring concerns about the thesis submission process through an informative session that clarified requirements, challenges, and solutions. The recording was published on the GRIC website for ongoing access.

Objective #5: To strengthen research and competitive creative endeavors

1. To provide support and essential resources necessary for efficient research and creative endeavors
  - Units Attached to the Chancellor's Office:
    - The CID managed an active research portfolio totaling \$117,782,810.12, distributed among 462 accounts within 236 projects funded by 104 sponsoring agencies. Of these funds, 88% came from federal agencies, 6% from private and 6% are state and institutional funds. (See tables below)

| Fund Type    | Portion     |
|--------------|-------------|
| Federal      | 88%         |
| Private      | 6%          |
| Other        | 6%          |
| <b>Total</b> | <b>100%</b> |

Table 19. Distribution of active research portfolio

- The CID received \$23,269,273.38 in new external funding during the year.

| Fund Type    | Amount                  | Portion     |
|--------------|-------------------------|-------------|
| Federal      | \$ 18,482,579.41        | 79%         |
| Private      | \$ 3,498,071.74         | 15%         |
| State        | \$ 1,288,622.23         | 6%          |
| <b>Total</b> | <b>\$ 23,269,273.38</b> | <b>100%</b> |

Table 20. Distribution of received research funds by source

| College                 | Received Funds          |
|-------------------------|-------------------------|
| Engineering             | \$ 14,090,040.21        |
| Arts & Sciences         | \$ 7,819,790.17         |
| Business Administration | \$ 926,142.00           |
| Academic Affairs        | \$ 241,315.00           |
| Agricultural Sciences   | \$ 146,881.00           |
| CID-COHEMIS             | \$ 45,105.00            |
| <b>Grand Total</b>      | <b>\$ 23,269,273.38</b> |

Table 21. Distribution of received research funds by college or unit

- This year, a total of 151 proposals were submitted by UPRM researchers, requesting \$ 790,273—a 10.22% increase in submissions and a 27% increase in funds requested over the previous year. The Colleges of

Engineering and Arts & Sciences led both in submission volume and requested funds, accounting for a combined 98% of activity. As of June 30, 2025, 24 proposals had been awarded, totaling nearly \$8.8 million.

| Deanship                  | Submitted Proposals | Percent Submitted Proposals | Requested Funds          | Percent Requested Funds |
|---------------------------|---------------------|-----------------------------|--------------------------|-------------------------|
| Engineering               | 85                  | 56%                         | \$ 56,874,073.00         | 45%                     |
| Arts & Sciences           | 64                  | 42%                         | \$ 67,816,200.00         | 54%                     |
| Business Administration   | 1                   | 1%                          | \$ 1,000,000.00          | 1%                      |
| Academic Affairs Deanship | 1                   | 1%                          | \$ 100,000.00            | 0%                      |
| <b>Grand Total</b>        | <b>151</b>          | <b>100%</b>                 | <b>\$ 125,790,273.00</b> | <b>100%</b>             |

Table 22. Distribution of submitted proposals and requested funds by college or unit

- College of Engineering
  - On August 22, the new Metal 3D Printer facilities were inaugurated, a project initiated by Dr. Marcelo Suárez with a Department of Defense donation and completed by Dr. Ricky Valentín and the Chancellor's Office with support from the Science and Technology Trust. The facilities will be available to RUM researchers and industry under a forthcoming management plan.

## 2. Increase external funding for research and creative work that provide Campus income

- College of Agricultural Sciences:
  - PRAES submitted 18 competitive proposals totaling \$4,048,033.68. Of these, 12 were awarded, securing \$1,290,040.96, while 2 proposals valued at \$44,750.00 remain pending. The Agricultural Experiment Station (AES) submitted 25 competitive proposals totaling \$4,328,660.21, of which 14 were approved, resulting in \$2,832,286.00 in awarded funds, and 5 proposals are still pending. Table 23 presents the number of proposals submitted by departments in each unit (PRAES and AES). Table 24 details the amount and sources of external funding for research and creative work in PRAES and AES, while Table 25 provides a summary of the new research and creative projects for this fiscal year.



| CAS Unit | Department                                                                        | Number of proposals: |           |          |          |
|----------|-----------------------------------------------------------------------------------|----------------------|-----------|----------|----------|
|          |                                                                                   | Submitted            | Approved  | Declined | Pending  |
| PRAES    | Animal Science                                                                    | 0                    | 0         | 0        | 0        |
|          | Agroenvironmental Sciences                                                        | 5                    | 4         | 1        | 0        |
|          | Agricultural Economics and Rural Sociology                                        | 2                    | 2         | 0        | 0        |
|          | Agricultural Education                                                            | 4                    | 1         | 3        | 0        |
|          | Agricultural Engineering and Biosystems                                           | 1                    | 1         | 0        | 0        |
|          | Other (includes agricultural agents who are not assigned to academic departments) | 6                    | 4         | 0        | 2        |
|          | <b>Total</b>                                                                      | <b>18</b>            | <b>12</b> | <b>4</b> | <b>2</b> |
| AES      | Animal Science                                                                    | 3                    | 2         | 1        | 0        |
|          | Agroenvironmental Sciences                                                        | 18                   | 11        | 3        | 4        |
|          | Agricultural Economics and Rural Sociology                                        | 1                    | 0         | 0        | 1        |
|          | Agricultural Education                                                            | 1                    | 0         | 1        | 0        |
|          | Agricultural Engineering and Biosystems                                           | 2                    | 1         | 1        | 0        |
|          | <b>Total</b>                                                                      | <b>25</b>            | <b>14</b> | <b>6</b> | <b>5</b> |

Table 23. CAS Proposal Status for 2024-2025 Fiscal Year

| CAS Unit | Agency/Entity Name                                      | Amount                 |
|----------|---------------------------------------------------------|------------------------|
| PRAES    | USDA-NIFA                                               | \$859,834.10           |
|          | USDA-NRCS                                               | \$1,152,874.99         |
|          | SOUTHERN RESEARCH & EDUCATION                           | \$91,089.00            |
|          | USDA-FS                                                 | \$135,000.00           |
|          | FOUNDATIONS                                             | \$38,062.00            |
|          | NIFA/SMITH LEVER 3(B) & (C) FY 2024 (Capacity Funds)    | \$7,575,792.00         |
|          | EFNEP (Capacity Funds)                                  | \$1,474,452.00         |
|          | RREA (Capacity Funds)                                   | \$13,500.00            |
|          | <b>Total</b>                                            | <b>\$11,340,604.10</b> |
| AES      | Hatch, McIntire Stennis, Animal Health (Capacity funds) | \$2,310,642.36         |
|          | National Institute of Food and Agriculture (USDA-NIFA)  | \$441,719.72           |
|          | Other                                                   | \$5,354,806.36         |
|          | <b>Total</b>                                            | <b>\$8,107,168.44</b>  |

Table 24. PRAES and AES: Amount and Sources of External Funding

| CAS Unit | Department                                                                        | Number of new research and creative work projects |
|----------|-----------------------------------------------------------------------------------|---------------------------------------------------|
| PRAES    | Animal Science                                                                    | 6                                                 |
|          | Agroenvironmental Sciences                                                        | 4                                                 |
|          | Agricultural Economics and Rural Sociology                                        | 2                                                 |
|          | Agricultural Education                                                            | 1                                                 |
|          | Agricultural Engineering and Biosystems                                           | 1                                                 |
|          | Other (includes agricultural agents who are not assigned to academic departments) | 4                                                 |
|          | <b>Total</b>                                                                      | <b>18</b>                                         |
| AES      | Animal Science                                                                    | 2                                                 |
|          | Agroenvironmental Sciences                                                        | 10                                                |
|          | Agricultural Economics and Rural Sociology                                        | 0                                                 |
|          | Agricultural Education                                                            | 0                                                 |
|          | Agricultural Engineering and Biosystems                                           | 1                                                 |
|          | <b>Total</b>                                                                      | <b>13</b>                                         |

Table 25. PRAES and AES new research and creative work projects 2024-2025

- During this fiscal year, PRAES administered 23 projects, while AES managed 128 research projects. AES projects were carried out across six experimental substations—Adjuntas, Corozal, Gurabo, Lajas, Isabela, and Juana Díaz—as well as at the Research Center in Río Piedras (see Table 22 for details). Appendix B provides a brief description of research collaboration agreements within the College of Agricultural Sciences (CAS). Appendix C provides a summary of the project names at PRAES and AES. Appendix D shows publications and presentations at the Colleges of Agricultural Sciences.

| CAS Unit | Department                                                                        | Number of ongoing research and creative work projects |
|----------|-----------------------------------------------------------------------------------|-------------------------------------------------------|
| PRAES    | Animal Science                                                                    | 3                                                     |
|          | Agroenvironmental Sciences                                                        | 7                                                     |
|          | Agricultural Economics and Rural Sociology                                        | 4                                                     |
|          | Agricultural Education                                                            | 1                                                     |
|          | Agricultural Engineering and Biosystems                                           | 1                                                     |
|          | Other (includes agricultural agents who are not assigned to academic departments) | 7                                                     |
|          | <b>Total</b>                                                                      | <b>23</b>                                             |
| AES      | Animal Science                                                                    | 23                                                    |
|          | Agroenvironmental Sciences                                                        | 87                                                    |
|          | Agricultural Economics and Rural Sociology                                        | 9                                                     |
|          | Agricultural Education                                                            | 1                                                     |
|          | Agricultural Engineering and Biosystems                                           | 8                                                     |
|          | <b>Total</b>                                                                      | <b>128</b>                                            |

Table 26. Active Projects at PRAES and AES, 2024–2025

- College of Engineering
  - Appendix E presents the extensiveness and impact of the creative work and research undertaken within the College of Engineering at the University of Puerto Rico at Mayagüez during the reporting period. It compiles significant accomplishments across multiple departments, including awarded and submitted research proposals, ongoing projects, peer-reviewed publications, patents, invention disclosures, and conference presentations. The initiatives described reflect robust collaborations with national and international institutions, contributions to scientific and technological advancements, and the successful acquisition of competitive funding from diverse agencies such as NSF, NIH, NASA, DOE, and industry partners. Together, these achievements showcase the commitment of faculty and students to advancing innovation, expanding knowledge, and strengthening the university's role as a leader in engineering education and research excellence.
- College of Arts and Sciences
  - Faculty of the Department of Chemistry published 18 scientific articles in 2024–2025.
  - At the Department of Economics, Dr. Ivonne del C. Díaz Rodríguez contributed to the release of the final report for the AgroEnergy research project, which included participation from UPR students, among them an economics major.
  - Dr. Ricardo R. Fuentes Ramírez published Volume XI of the departmental journal *Ceteris Paribus* and peer-reviewed articles in the *Review of Radical Political Economics*. He presented at several national conferences, including the keynote Economy for Peace at the 1st Congress for Peace, collaborated technically with the Puerto Rico Planning Board, and was appointed to the editorial board of *Atenea* journal.
  - The English Department, in collaboration with the College of Arts and Sciences, promoted faculty research, external funding applications, and publication efforts by encouraging professors to apply for release time. Of the nine professors granted release time, five participated in interdisciplinary grants. Tenured faculty received support from the College's Office of Investigation and regularly submitted reports detailing their work, which includes interdisciplinary research (with Hispanic Studies and Computer Engineering), creative projects (such as film production), community engagement (via the Oral History Lab), and academic publications. The Oral History Lab has managed a \$1.8 million grant to support various community projects in Puerto Rico and the Caribbean, leading to additional funding. Professor Raisa Bonnet joined the department with a \$1.7 million budget for her feature film, which involved and compensated local communities.
  - At the Department of Geology, the faculty submitted five major proposals, including an NSF collaboration led by the University at Albany, FEMA's

- \$30M PRMesonet proposal, and a NASA ICAR initiative. Three major proposals were awarded: the NOAA/NTNHP Tsunami Hazard Mitigation Grant for PRSN (\$150M, FY24–25), the USGS-funded LandslideReady Community Engagement Program (\$473K, 2024–2026), and a USGS Cooperative Agreement for Assessing the Industrial Mineral Potential of Puerto Rico (\$499,917, 2025–2028). The Landslide Hazard Mitigation Office advanced resilience efforts through the NSF-funded Landslide Hazard Mitigation Project (2023–2026, \$500K) and continued leadership in risk reduction and infrastructure planning. Research expanded into planetary science, mineral resource assessments, and seismic hazard mapping. A major NSF-funded collaboration continues with Auburn University, led by Prof. Thomas Hudgins and Dr. Laura Bilenker. Faculty and students from the Department of Geology presented at major venues, including the Geological Society of America Southeastern Meeting (March 2025), USGS virtual workshops (September 2024), the IDRIM 2024 conference in Colombia, and the PRVI NSHM workshop (August 2024).
- At the Department of Hispanic Studies, Dr. Carmen Rivera Villegas presented her book *Cuentos desastrosos* and published an essay on Marta Aponte Alsina's Borinquen Field. Dr. Mairym Lloréns Monteserín published in the Journal of the Acoustical Society of America, joined an International Pragmatics Association panel, and was selected for a computational data science workshop co-hosted by UPRM and Clark Atlanta University. Dr. José Santos published *Crestomatía interior* and *Flechas son de Diana: Ensayos* and was interviewed by Letralia. Dr. Jaime Martell released *Monstruos, portentos y metamorfoseados* and *Microbestiario*. Dr. Ángela Valentín Rodríguez presented internationally in Croatia, London, Colombia, and Puerto Rico, performed at the *Festival Internacional de Poesía del Bío Bío*, delivered multiple keynotes, published *De la carne y otras fatalidades*, contributed to anthologies, and received a Humanities Puerto Rico–Mellon Foundation grant for Empowerment through Poetry. Dr. Dalia S. González published on poetry and urban narratives, coordinated the *Proyecto de Escritura Creativa sobre el Cambio Climático*, and presented research in London, Croatia, and Paris on geohumanistic, colonial, urban, and Caribbean literature.
- Department of Kinesiology
  - Dr. Christian Martinez Rivera (PI), Coralys Flores Rivera, Karol Herrera & Mathew Almodovar (UPR, Mayaguez), Dr. Samuel Hodge (The Ohio State University) & Dr. Luis Columna (University of Madison, Wisconsin) (2024). Community-Based Physical Activity Intervention for Autistic Children to promote healthy living in Puerto Rico. Funded by NAKHE - National Association for Kinesiology in Higher Education through Hellison Interdisciplinary Research. Grant \$5,000.
  - Dr. Carlos X Torres Ramos. EIM-OC Franklin Microgrant, Physical Activity Assessment and Referral Grant. \$1,500. Submitted to American College of Sports Medicine. October 2024.

- Dr. Juan Patarroyo & Dr. Carlos X. Torres Ramos (CO PI). Equipment: MRI: Track 1 Acquisition of 3D Motion Capture Equipment to support research on wearable technologies and edge AI computing at UPRM. Submitted to National Science Foundation (NSF). November, 2024.
- Dr. Christian Martínez Rivera. Physical Activity and Nutrition Intervention for Hispanic Children and Families to Promote Healthy Living. Submitted to National Research Center on Hispanic Children & Families, April 17, 2025.
- Dr. Bryan Rivera. Functional Training Center for Older Adults (CEFAM). Submitted to AARP Community Challenge Grant Program, February 19, 2025.
- Carlos X. Torres Ramos (2025). The impact of physical activity levels and physical fitness on the functional capacity of university faculty employees. Unpublished.
- Christian Martinez & Carlos X. Torres Ramos (2025) Community Based Physical Activity Intervention for Autistic Children to promote Healthy Living. Unpublished.
- Rivera, B. (2025). Impact of Sustainability Practices in Sports Facilities: A Case Study of the Mangual Coliseum at the University of Puerto Rico at Mayagüez. Unpublished.
- The Department of Marine Sciences (DMS) managed 11 active externally funded projects, led by five faculty Principal Investigators, totaling \$3,383,565. Seven additional projects from 2022 remain active under no-cost extensions. Notably, a NOAA-funded collaboration with ISER-CARIBE, launched in August 2023 with a budget of \$11,189,000, will continue through 2027. Other notable projects concluded in 2024–2025, including the Inland Pilot Marine Integrated Multitrophic Aquaculture System in Magueyes (PI: Dr. Ernesto Otero, retired), a pilot algae cultivation project led by Dr. Loretta Robertson, and an EPA–DNRA project on water quality and coral reef systems, which ended in June 2025. Eleven new proposals submitted to agencies such as NSF, ONR, NASA, and NOAA during the year, totaling \$9,935,793 in requested funding. Of these, three proposals (27%) were funded, securing \$1,544,411 in new external support. Thirty four manuscripts were submitted to peer-reviewed journals and one technical report produced. Of these, 15 manuscripts were published, five accepted or in print, and the remainder under review. Faculty authored five publications, while students were senior authors on 13 and contributed to 57% overall. Additionally, faculty and students delivered 26 presentations across 11 professional meetings and workshops.
- At the Department of Mathematical Sciences, Dr. Xuerong Yong submitted a manuscript on matrix theory, and Dr. Liliana Esquivel applied to NSF's LEAPS-MPS program with a proposal on fractional dispersion and complex analysis. Dr. Edwin Flórez submitted proposals to Microsoft and Google on AI-driven mathematical problem generation. Other proposals

remain under review. Dr. Luis Cáceres published a book chapter and multiple works on calculus and analysis. Dr. Almodóvar contributed articles in AI, data science, cancer epidemiology, and infectious disease modeling. Dr. Romero published several high-impact studies on mathematical modeling of antimicrobial resistance, HIV/ZIKV co-infections, and Zika virus dynamics. Dr. Calderón is advancing work on G-invariant Boolean functions with other UPR campuses; Dr. Flórez is leading projects on honeybee behavior and AI in streaming platforms; Dr. Castillo is developing numerical methods for PDEs; and Dr. Narciso is guiding undergraduate research on AI for emergency medical diagnostics and educational technology.

- The Department of Nursing faculty continued joint initiatives with the Rutgers University School of Nursing, focusing on clinical preceptorship and leadership development with affiliated agency nurses.
- The Department of Nursing faculty continued joint initiatives with the Rutgers University School of Nursing, focusing on clinical preceptorship and leadership development with affiliated agency nurses. Also, the Close Encounters of the First Kind study on hypertension continued, with findings presented as a poster at the 25th Scientific Convention of the American College of Cardiology Puerto Rico–Cardiovascular Section. Additionally, two faculty members collaborated with Rutgers University on evidence-based research, with future projects planned in mental health and maternity.
- At the Department of Psychology, Dr. Eduardo Lugo was appointed Executive Director of the Commission to Combat Child Poverty and Social Inequality and collaborated on grants addressing energy justice and resilience. Faculty including Drs. Milagritos González, Ana Nieves, Irmarié Cruz, and Bernadette Delgado led projects on education, trauma, cognitive assessments, violence, and STEM education. Five laboratories were established, including the School NeuroLab, TRIN Lab, Neuropsychanalysis Lab, and Play Shift Cognition Lab, creating platforms for interdisciplinary research and training. The PAIS Undergraduate Research Training Program engaged 64 students in six projects through PSIC 499/4992. Faculty and students presented at international conferences, the XXX Social Sciences Symposium, and national venues, with research on trauma, neuropsychology, sustainability, and childhood experiences. Scholarly output included peer-reviewed articles, book chapters, and editorial contributions, notably in the *Revista Iberoamericana de Neuropsicología*. Publications on decolonial psychology and political communication reflected engagement with critical social issues. Also, the faculty members served as guest editors for international journals, and students presented at the First Central American and Caribbean Congress of Neuropsychology and the Student Meeting of Neuropsychology hosted by Carlos Albizu University. Additionally, efforts were underway to expand summer internship experiences abroad, including partnerships with institutions such as the

University of North Carolina-Chapel Hill, *Universidad Iberoamericana*, *Universidad de Guadalajara*, and Harvard Medical School's Cambridge Health Alliance. Undergraduate student Rocio Quintana Guzman participated in the prestigious Brown University SR-EIP summer internship, conducting psychiatric research.

At the Department of Social Sciences, the Center for Applied Social Research (CISA) led interdisciplinary projects on social issues and public policy and co-sponsored the annual student research symposium.

Proyecto Siempre Vivas, directed by Prof. Luisa Seijo, continued its advocacy and support for survivors of gender-based violence. The Interdisciplinary Center for Coastal Studies (CIEL) conducted research on coastal social processes and engaged students in applied work. The Public Safety and Urban Affairs Observatory, led by Dr. Edwin Asencio Pagán, addressed gender-based violence and public security, involving students in research and practice. Dr. José Lee-Borges published widely on geopolitics, migration, and history; Dr. Manuel Valdés Pizzini led projects on climate vulnerability and coastal communities while producing several publications; Dr. Melody Fonseca Santos contributed a chapter on postcolonial studies in a major international relations handbook; and Dr. Ingrid Rodríguez Ramos advanced research on service-learning, community development, aporophobia, and women's empowerment.

- College of Business Administration
  - In January 2025, Dr. De Hoyos began serving as Co-PI on the NSF-funded project Collaborative Research: EPIIC – Strategic University Practices to Expand Research (SUPER) with Drs. Ubaldo Córdova and Ingrid Padilla. The \$400,000, three-year project funds two MBA student scholarships tied to master's thesis research under Dr. De Hoyos' supervision.
  - A grant from *Banco Popular de Puerto Rico* was received to establish the NeuroLab MindMarket Lab, an innovation and competitiveness initiative affiliated with the Business and Economic Development Center (BEDC).
  - During this academic year, several faculty members were identified and granted research course releases.
  - Two faculty members published scholarly articles during the academic year:
    - Marcano Nieves, L. M., Sosa Varela, J. C., Ortiz, M., & Montalvo, F. (2024). Networking capabilities on organizational networking in entrepreneurial SMEs. *Management Research: The Journal of the Iberoamerican Academy of Management*. <https://doi.org/10.1108/MRJIAM-11-2023-1485>
    - Villavicencio Mattos, J., Palomino Lescano, V. R., & Torrez, J. (2024). CEO compensation and gender pay gap. *Journal of International Finance and Economics*, 24(4), 19–28. <https://dx.doi.org/10.18374/JIFE-24-4.2>
    - At CRECEN, an article title "Enhancing Research Administration

Service Quality with Artificial Intelligence and Neuromarketing" was also finalized and submitted for publication.

- Units Attached to the Deanship of Academic Affairs
  - At the library, a total of \$2,120,580 in external funding across four major projects supporting research, teaching, and community engagement were received:
    - Infrastructure Support for the OHL – A grant of \$1,833,000 from the Andrew W. Mellon Foundation (Grant #2305-15699), supporting a three-year initiative that includes staffing (two full-time researchers, a librarian and administrative assistance), and financial support for six undergraduate and five graduate students.
    - Speaking into the Silences: Building Community Archives across the Puerto Rican Archipelago – Final installment of \$100,000 awarded by the American Council of Learned Societies (ACLS).
    - Climates of Inequality: Stories of Environmental Justice – A proposal accepted by the Humanities Action Lab, awarding \$15,000 plus exhibition transportation costs to host this international traveling exhibit at UPRM.
    - *Archivo de Respuestas Emergencias de Puerto Rico* – AREPR – Final payment of \$172,580, received via subaward from Michigan State University with funding from the Mellon Foundation. Project completed in October 2024.
  - A total of three new research projects were initiated this year by members of the OHL:
    - Prof. Natalia Hernández-Mejías is leading a research project examining the inclusion of Sensitive Personal Information (SPI) in the oral histories published by the Lab. The project explores ethical considerations related to privacy and archival practices.
    - Researcher Natalia Betancourt-Malavé is curating a collection of oral histories documenting human experiences during climate disasters, such as flooding, loss of life, health complications, and limited access to emergency care. The collection includes stories from diverse communities across Puerto Rico and aims to inform climate scientists and policymakers. These narratives were originally collected by UPRM students after Hurricane María in courses led by Dr. Ricia Anne Chansky and Dr. Jocelyn Géliga-Vargas.
    - Researcher Natalia Betancourt-Malavé is also conducting a study titled "Sustaining Mutual Aid through Multiple Crisis Events: Ten Years of Come Colegial in Puerto Rico" This project focuses on the growth, sustainability, and leadership strategies of the Come Colegial mutual aid initiative, particularly in response to overlapping crises such as economic hardship, natural disasters, and the COVID-19 pandemic.
    - This year, interlibrary loan transactions included 1,614 journal articles and 230 books.



- A total of two ongoing research projects are in the works during this academic year:
  - OHL in collaboration with a master's student from the internship program, conducted research on the presence of Sensitive Personal Identifiable Information (SPII) in oral history. As part of this project, new assessment tools were created and integrated into OHL's workflow to reduce risks and protect the privacy of narrators. Preliminary findings were presented at the Association of Caribbean University, Research and Institutional Libraries (ACURIL) conference in Curaçao in a session titled "Protecting Oral Histories: Navigating Privacy Challenges in Digital Environments."
  - At the Graduate Research and Innovation Center (GRIC), a research project was commissioned to evaluate the primary academic communication needs of graduate students and to assess the effectiveness of the Graduate Writing Facilitators (GWF) program. The study, led by Dr. Luisa Feliciano-Cruz, began in the 2023–2024 academic year. Data analysis and reporting were completed during 2024–2025, and results are expected to be published and presented at academic events in the upcoming semester.
- A total of three impactful ongoing projects were identified, each contributing meaningfully to research visibility, skills development, and community collaboration:
  - GRIC staff continue to manage Scholar@UPRM, the institutional repository that archives all theses, dissertations, and project reports submitted as degree requirements. Each submission is assigned descriptive metadata and a unique identifier, making the scholarly output of UPRM students globally accessible. This initiative enhances the visibility, reach, and academic reputation of the institution.
  - GRIC also leads a wide-ranging educational program that supports research skill development among students and faculty. These offerings include workshops and online resources on database use, citation management, scholarly communication, research ethics, data analysis and visualization, academic writing, and more. These services are regularly reviewed and updated to align with evolving needs, with recent content focused on the ethical use of generative AI tools in research.
  - With funding from the Mellon Foundation, the OHL has been advancing its role as a central hub for oral history work in Puerto Rico. The Lab supports community organizations, such as Loíza Vive, by offering guidance in data management, metadata creation, long-term digital preservation, and file-naming protocols. These collaborative efforts amplify the impact of community-centered oral history projects and promote ethical archival practices.

3. To develop assessment procedures to assure efficiency in research and creative endeavors
  - Units Attached to the Deanship of Academic Affairs
    - At Institutional Review Board (CPSHI), 279 research protocols were reviewed. The IRB renewal with OHRP through 2028 ensures continued eligibility for federally funded research, while the election of a new President for a three-year term provides governance continuity.
4. To promote and to give relevancy to Graduate Studies
  - Units Attached to the Deanship of Academic Affairs
    - The Office of Graduate Studies (OGS) presented a summary of actions by objective in the following table:

| Objective                                                                                                                                            | Action                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
|------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Implement best practices in the management of graduate programs to improve retention and graduation rates.                                           | Established ad-hoc committees to review and update Academic Senate certifications 09-09 (about graduate studies at UPRM) and 05-62 (about assistantships at UPRM) to reflect recent changes in UPR and UPRM regulations and provide direction for recently identified situations. Work on this objective continues.                                                                                                                                                         |
| Have the necessary talent to fulfill the mission and objectives of the Office of Graduate Studies.                                                   | An Associate Director was appointed and starts in August 2025. The position of Student Affairs Officer II was opened and recruited. The new Officer is expected to start in July 2025. The duties of Administrative Assistant, position no longer available at the OGS, are currently covered by undergraduate students participating in the work-study program. Also, a student under the wages system (i.e., "jornal") supported the update process of the OGS's website. |
| Establish a follow-up and early alert program for graduate students.                                                                                 | Established a set of performance metrics in collaboration with the Office of Institutional Planning, Research and Improvement (OPIMI, for its name in Spanish) to support future assessment efforts of graduate programs.                                                                                                                                                                                                                                                   |
| Improve the transparency of the graduate assistantship process.                                                                                      | A counter was programmed in the R3 system (application for assistantship) to count the number of semesters the student received teaching and research assistantship. This helps to identify if the student still qualifies for the benefit.<br>An audit process was conducted at the end of the Spring term to verify proper matching of credit-hours to dedicated weekly time, and adequate application of tuition exemption, during the assistantship assignment process. |
| Increase the production of scientific articles as dissemination tools for the technological or scientific contributions of theses and dissertations. | In collaboration with the Library's GRIC, all graduate theses and project reports were checked for originality using the iThenticate system and published in the institutional repository.                                                                                                                                                                                                                                                                                  |

Table 27. Office of Graduate Studies: Actions by Objective

- The following table summarizes the promotional and orientation efforts attended or supported by the OGS.

| Date              | Description                                               |
|-------------------|-----------------------------------------------------------|
| January 9, 2025   | UPRM's new graduate student orientation                   |
| January 28, 2025  | UPR-Humacao graduate studies fair                         |
| February 6, 2025  | UPRM's graduate studies fair                              |
| February 26, 2025 | UPR-Rio Piedras's graduate studies fair                   |
| February 27, 2025 | UPR-Carolina graduate studies fair                        |
| February 28, 2025 | UPRM's job fair                                           |
| March 19, 2025    | Purdue University at UPRM                                 |
| April 24, 2025    | Rochester Institute of Technology info session at UPRM    |
| May 21, 2025      | Educational Tourism symposium at the PR Convention Center |

Table 28. Office of Graduate Studies: Promotional and Orientation

- In terms of financial support, the OGS processed a total of 2133 applications benefiting 683 students with a combined total of \$7,604,535.31. The following table presents detailed information.

| Term   | Assistantship type | Students impacted | Number of assistantships | Total amount    |
|--------|--------------------|-------------------|--------------------------|-----------------|
| Summer | Corrector          | 0                 | 0                        | --              |
|        | Teaching           | 19                | 21                       | \$ 28,831.78    |
|        | Service            | 47                | 111                      | \$ 65,486.71    |
|        | Research           | 172               | 196                      | \$ 535,736.31   |
| Fall   | Corrector          | 5                 | 5                        | \$ 6,382.50     |
|        | Teaching           | 346               | 364                      | \$ 1,334,218.18 |
|        | Service            | 80                | 84                       | \$ 163,391.77   |
|        | Research           | 292               | 391                      | \$ 1,904,610.97 |
| Spring | Corrector          | 7                 | 7                        | \$ 11,885.00    |
|        | Teaching           | 335               | 382                      | \$ 1,252,378.80 |
|        | Service            | 95                | 136                      | \$ 184,850.74   |
|        | Research           | 332               | 436                      | \$ 2,116,762.55 |

Table 29. Financial Support Processed by the Office of Graduate Studies

- The Institutional Review Board (IRB) renewed its registration (IRB 00002053) with the Office for Human Research Protections (OHRP), maintaining authorization through 2028.
- In March, UPRM hosted a graduate studies fair with participation from UPR Río Piedras and UPR Medical Sciences campuses.

- College of Business Administration
    - The Graduate Program promoted courses and academic offerings through social media, the Brevo platform. On August 2025, raising total enrollment to 52—a projected 108% increase. Additionally, an alliance with UPR-Ponce allows its undergraduate Business Administration students to enroll in graduate-level courses at UPRM.
  - College of Agricultural Sciences:
    - The Department of Animal Science coordinated three veterinary school orientations with North Carolina State University, Louisiana State University, and Ana G. Méndez University.
5. To identify, among existing graduate programs, world-class niches of specialized research
- College of Engineering:
    - The Department of Computer Science and Engineering's graduate programs in Software Engineering, fully approved, will launch in August 2025.

Objective #6: To impact our Puerto Rican society

1. To promote the use of expertise within our university community to meet both our campus' and our country's needs.
  - Units Attached to the Chancellor's Office:
    - CTI participated in *Explora y Avanza: Descubre tus Recursos Universitarios*, an activity organized by the Dean of Academic Affairs to welcome new students for 2025. CTI assisted participants with access to the portal.upr.edu and institutional Outlook email.
    - At MUSA, efforts advanced on developing a comprehensive collections policy, supported by a consultant for archaeological holdings. The consultant is finalizing a specific management policy, along with templates and an exhibition plan to guide the organization and presentation of a permanent display of this cultural heritage. MUSA hosted an exhibition organized by the Museum of History, Anthropology, and Art (UPR-Río Piedras), which occupied three first-floor galleries. MUSA organized the exhibition *Abstract Expressions: A Selection from the Permanent Collection*, curated by professors from the UPR system. The exhibition highlighted emblematic works from RUM in dialogue with internationally recognized trends in abstraction within the visual arts and was enriched by complementary public programming activities. Finally, MUSA presented *Surcos*, a major collaboration with the Pontifical Catholic University of Puerto Rico. This exhibition, featuring 80+ works and 40+ lenders, required a year of planning and three months of production, culminating in a robust public program currently underway.
  - Units Attached to the Deanship of Academic Affairs
    - Patent and Trademark Resource Center (PTRC) expanded educational outreach by focusing on the patent application process. Content on patents, applications, and prior art searches was developed and shared through multiple platforms, benefiting local users and other UPR campuses. PTRC also increased Spanish-language resources on its website.
    - This year, the PRDE's Mayagüez Regional Office included the PPM Director in orientations for its new subject-matter facilitators.
    - Accomplishments of the UPRM General Library:
      - The Puerto Rican Collection organized multiple cultural and educational events, including *Navidad del Ayer: Recuerdos y Tradiciones*; a conversation on Roberto Clemente's legacy; Dr. José Augusto Acevedo-Rodríguez's lecture *The Bibliotecologism: Towards a Humanism of Knowledge*; Dr. Roberto Fernández Villedor's talk *My Meeting with Cofresí*; and an extensive conference on coffee cultivation in Puerto Rico. Public events included RUManimadas, offered by Dr. Noemí Maldonado.
      - The library extended its collaboration with the Center for Conservation

and Restoration of Puerto Rico (CENCOR) and the Conservation Center for Arts and Historic Artifacts (CCAHA) through May 2025, hosting a fellowship in Preventive Conservation of Documentary Collections and advancing professional training in cultural heritage preservation.

- The National Reading Month was celebrated with four in-person talks by UPRM English and Humanities faculty and children’s literature authors, complemented by a special Dr. Seuss exhibition featuring theoretical works, rare books, and collectibles. Open Access Week 2024 included the eBook presentation.
  - Librarians delivered 251 workshops to 4,991 participants, fostering information, digital, and data literacy skills. Sessions included 163 in-person, 17 hybrid, and 73 virtual workshops, with recordings shared and select content uploaded to YouTube for wider access. Librarians also offered professional development, facility tours, and customized instructional guides. Impact extended beyond UPRM, reaching K–12 students (e.g., CROEM), entrepreneurs, legal professionals, and community members.
  - CEDIBI offered library workshops to CROEM students on plagiarism, style manuals, and artificial intelligence, as well as sessions for the Transportation Summer Institute, providing research experience to 20 high school students.
  - Library Week 2025, themed *Cautivados por la Biblioteca*, featured events such as *Las Historias detrás de la Superheroína: La Borinqueña* and the book presentation *Décimas por sacos* by Teófilo Torres.
  - CREAD collaborated with DECEP to coordinate training projects for government employees through the OATRH and PRDE, positively impacting hundreds of public servants by enhancing their skills and contributing to the island’s socioeconomic development.
- Units Attached to the Dean of Students Affairs:
    - The Department of Social and Cultural Activities accredits about 200 student organizations annually, many of which, including sororities and fraternities, support the community through blood drives, visits to elderly and children’s homes, and food donations.
    - The Placement Office organized diverse activities to strengthen student career readiness and employer engagement. (See table below)

| Activity                                | Number |
|-----------------------------------------|--------|
| On-campus job fairs                     | 2      |
| Information tables (companies/agencies) | 53     |
| Information sessions/presentations      | 40     |
| Resume & interview workshops            | 2      |
| Webinars                                | 3      |
| Networking events with students         | 2      |

Table 30. Placement Office Activities

- DCSP also expanded outreach to raise awareness of its services by updating its website, visiting departments, issuing campus-wide communications, and offering prevention workshops on suicide awareness, self-care, and crisis management. Signature initiatives included the Happy Day Colegial and participation in the Suicide Prevention March Abraza tu Vida. Also, a therapy animal proposal was submitted and approved, introducing Julieta, a therapy dog, as a free resource to support student well-being. The initiative, aimed at improving physical, cognitive, emotional, and personal functions, made UPRM the first educational institution in Puerto Rico to implement this therapeutic technique.
- The Quality-of-Life Office expanded student engagement through Puppy RUM, promoting the human–animal bond, and the National Society of Leadership and Success, fostering leadership skills. Partnerships with the Department of Health supported HIV prevention efforts, while collaboration with the UPR-wide Substance Use Study advanced integrated initiatives to strengthen student well-being resources. The Educational and Professional Improvement Program offered conferences and talks to schools and university personnel on topics relevant to professional development and societal needs. In addition, the Office produced a podcast aligned with its four pillars, addressing issues that promote students' personal, academic, and social well-being.
- The Financial Aid Department offers in-person and virtual orientations for high school students in Mayagüez and nearby towns, promoting higher education and financial aid opportunities. Staff also support FAFSA Day, guiding students through application completion to ensure accessibility.
- The Band and Orchestra Department enhanced its formative approach through rehearsals, technical guidance, and participation in major events. A highlight was *Songs and Strings... a Harmony in Concert*, a collaboration with the Pontificia Universidad Católica de Ponce Choir. The Department also created original arrangements for OCRUM, expanding its repertoire and contributing to Puerto Rican university musical literature, with formal editions prepared for future publication.
- The Student Exchange Program, aimed at UPRM students and school-aged youth, prepared an information table during the UPRM Open House in October 2024, impacting approximately 1,200 students.
- OSEI-RUM Magazine, launched by the Office of Services to Students with Disabilities (OSEI), promotes education and awareness on functional diversity. The publication includes statistical data, reflections, and recommendations of related films and series. To access the magazine and explore its insights, knowledge, and reflections, click the following link: [OSEI-RUM Journal - Vol. 2, December 2024 \(PDF\)](#).
- The Department of Medical Services provided comprehensive health services to the UPRM community, including medical consultations, urgent and emergency care, ambulance transfers, laboratory services, family

planning, and prevention clinics. These efforts supported students, staff, faculty, and visitors, ensuring access to essential care and reinforcing DSM's role as a cornerstone of campus well-being. (See table below for details.)

| Service Area               | Volume / Activities                                                                                                                                                 | Impacted Community                                                    |
|----------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------|
| Medical Consultations      | 3,679 patient visits over 203 workdays                                                                                                                              | Students, staff, visitors                                             |
| Emergency / Urgent Care    | 1,785 services, including 485 emergency patients (387 students, 81 employees, 17 visitors)                                                                          | Students, staff, faculty, visitors                                    |
| Ambulance Services         | 146 trips (83 ER transfers, 64 emergencies; some patients required both)                                                                                            | 75 females, 69 males, students, staff, visitors                       |
| Family Planning / PREVEN   | 787 patients (713 females, 74 males); 11 preventive gynecology patients; tests performed: 70 HIV, 110 Chlamydia/Gonorrhea, 76 Syphilis, 3 Hepatitis C, 21 pregnancy | Students, families, staff, external community                         |
| Clinical Laboratory        | 885 tests (CBC 227, COVID-19 193, Mycoplasma 95, Influenza 83, others)                                                                                              | Students* (highest demand among low-income students), staff, visitors |
| Psychological Services     | 328 visits (up to Feb. 2025; service paused due to lack of clinical psychologist)                                                                                   | Students, staff, psychological emergencies                            |
| COVID-19 Protocols         | 193 tests conducted for suspected cases                                                                                                                             | Students, staff, faculty, visitors                                    |
| Vaccination Clinics        | 50 flu vaccines administered (external resource)                                                                                                                    | Students, staff, faculty                                              |
| STD Screening Clinics      | 280 tests conducted                                                                                                                                                 | Students, staff, faculty, visitors                                    |
| Community Education        | Awareness and prevention activities across campus                                                                                                                   | Students, staff, faculty, visitors                                    |
| Special Incidents Reported | 34 incidents (falls 21, wounds 3, traumas 3, accidents 7)                                                                                                           | 22 students, 10 employees, 2 visitors                                 |

Table 31. Department of Medical Services: Services Summary

- College of Engineering:
  - Over 170 high school students attended a free Math Review workshop for the PAA and PNA (university admission exams), led by IAB member Eng. Barillas. Dr. Acevedo briefed parents on UPR admissions and engineering programs. The event, organized by the Dean of Engineering's Recruitment and Retention Office was supported by Engineering Ambassadors.



- Dr. Miguel F. Canals Silander and Dr. Sylvia Rodríguez, from the Department of Engineering Sciences, regularly deliver public talks on real-time and forecasted sea conditions, with Dr. Canals featured in radio and TV segments. Their work includes research-to-implementation efforts in ocean forecasting.
- Dr. Marcel Castro is in charge of Oasis de Luz 2.0. This is an energy resilience initiative inspired by a student-led project in Jayuya after Hurricane María. With support from the IEEE Foundation and UPR entities, the project has evolved into a pilot funded by the U.S. Department of Energy to install solar systems in 10 communities.
- Celebrating its 39th anniversary in April 2025, the PR-LTAP Center has supported over 45,000 participants across 4,720 transportation training and technology transfer events since its founding. In 2023–2024, the Center reported 65 training events, 243.5 contact hours, and nearly 2,500 participants.
- CREATE project researchers presented on road infrastructure vulnerability and disaster impacts at an Earth Day event in Isabela, engaging the public and collecting community input.
- The XXII Summer Transportation Institute was held from June 6 to July 3, 2024, engaging high school students through conferences, hands-on activities, and field trips to sites such as Luis Muñoz Marín Airport and Tren Urbano. The 2025 edition is scheduled for June 16 to July 2.
- The UPRM HACKS 2025 summer camp, held June 8–14, welcomed 60 high school students in a residential format. It was organized by Dr. Bienvenido Vélez, Dr. Heidy Sierra, Dr. Wilfredo Lugo, and Mrs. Celínés Alfaro.
- College of Agricultural Sciences:
  - The Gurabo Substation carried out several educational and research activities, including: Dr. Julia O'Hallorans led two workshops: "Soil Sampling and Analysis" and "Discover Forestry and Organic Coffee Production." Also, agroecological and Organic Agriculture Workshop at Finca La Zafra, presented by Dr. O'Hallorans and Dr. Alfredo Aponte. Organic Certification Preparation Workshop in Moca, with participation from Gurabo researchers.
  - Research Associate Victor González coordinated and participated in various community and school-based activities, including multiple events at the Río Hondo Community Forest—the Forest Bird Workshop with 4th- and 5th-grade students from Olga Mas School, Mayagüez (Nov. 8 and Dec. 10, 2024); Game Day and Nature Walk with the W.E.A.V.E.R. homeschool group (Apr. 25, 2025); and the Pollinator Gardens Short Course (Apr. 29, May 6, and May 13, 2025)—as well as the Agricultural Festival at Eugenio María de Hostos School, Las Marías (Feb. 20, 2025) and the Grand Agricultural Fair at Juan B. Soto School, Aguada (Apr. 25, 2025). Additionally, Lab Technician Luis Collazo participated in the

- Agricultural Fair at Pedro Perea Fajardo School, Mayagüez (April 22, 2025), presenting a booth on Entomology and Tissue Culture.
- At the Department of Animal Science, faculty, graduate, and undergraduate students developed and presented educational videos to 14 elementary and high schools in western Puerto Rico, reaching a total of 466 students.
  - At the Department of Agricultural Education, Dr. Ircha I. Martínez Rodríguez, representing FCS, participated in *Letras de Esperanza* through the Puerto Rican Association of Family and Consumer Sciences, preparing holiday letters and cards to uplift older adults in nursing homes or receiving services from nonprofit organizations.
  - This year, the FCS program at PRAES focused on supporting the elderly population. Educators offered short courses and workshops on community gardening and food preservation in Elderly Centers and remote communities across Aibonito, Maricao, Loíza, Canóvanas, Ciales, and Añasco, leading over 300 individuals to adopt food safety and preservation practices. In Cidra, Río Piedras, San Sebastián, Bayamón, and Naranjito, more than 200 elderly adults benefited from initiatives promoting emotional well-being and Alzheimer's prevention. In Utuado, Río Grande, Adjuntas, and San Lorenzo, projects promoted healthy lifestyles and chronic disease prevention, resulting in over 400 participants adopting healthier diets and increasing physical activity. Finally, families in Corozal and school children in Río Grande improved their financial management skills through FCS-led financial education initiatives.
  - The Community Resources Development (CRD) at PRAES: provided direct guidance for the development of 5 community action plans and 3 business plans to support local enterprises. In collaboration with the Natural Resources Conservation Service (NRCS), the program also helped establish 11 community gardens and 1 butterfly garden, promoting ecological education and community-based food systems.
  - Agriculture, Marketing, and Natural Resources (AMNR) – Rescuing the Criollo Cattle of Puerto Rico: This Project was launched following a needs assessment identifying key challenges in Puerto Rico's cattle sector. To promote awareness, the project published two articles in *Agrotemas* and four in *Revista del SEA*, and created a Facebook page and messaging group for stakeholder communication. A forum with 69 participants, including farmers and researchers, further supported the promotion of the breed through educational presentations.
  - PRAES developed the Los Cafetaleros educational project to equip local coffee producers with essential knowledge and skills to improve coffee quality. Over the past five years, the project has reached more than 500 coffee farmers through diverse educational methods, including courses, seminars, workshops, and field days.
  - A collaborative program between PRAES and AES was established to promote best practices in beekeeping and pollinator protection. To date,

over 200 community members, 300 4-H Club members, and 30 farmers have been trained. The program also hosted six pollinator festivals across Puerto Rico and the U.S. Virgin Islands, serving as interactive educational events and attracting more than 3,000 participants, significantly raising regional awareness about the importance of pollinators.

- The NIFA Rapid Response to Extreme Weather Events project developed a Nutrient Balance Calculator to improve nutrient management in agriculture and support sustainable practices. It also produced a children's activity book on home gardening to promote early awareness of soil conservation and local food systems.
- The Sustainable Rotational Grazing Systems for Small Ruminants project provided technical support for establishing forage sorghum at Costa Sur Farm, aiming to validate varieties suited for silage production and subsurface irrigation. The silage will be used at the Lajas Agricultural Experiment Station dairy.
- The Water Harvesting and Irrigation Systems project offered workshops on the importance and application of water harvesting in Puerto Rico. Training included presentations, site visits, and hands-on demonstrations to encourage sustainable water management practices.
- The Agricultural Engineering Office achievements include 59 technical consultations, 21 management plans, 8 irrigation system designs (7 implemented), and 3 structural layout plans, all aimed at improving productivity and efficiency. Additional milestones include optimizing existing irrigation systems, integrating the WebODM SEA platform, and acquiring IRRICAD Standalone software to advance precision agriculture.
- Capacity-building efforts in Irrigation Engineering and ongoing environmental assessments in partnership with livestock enterprises further strengthen support for sustainable farming practices.
- The Socially Disadvantaged Farmers & Ranchers project offered non-formal education and technical support in Spanish to farmers, ranchers, and fisherpersons in agribusiness development (3,272 participants), grant writing (1,872 participants), and USDA program orientation (285 participants). It also produced the Agribusiness Agenda, which includes the Toolkit for Agribusiness Entrepreneurs, Developing the Agribusiness Plan, and the Publication Guide for Agribusiness Entrepreneurs to strengthen decision-making and build capacity.
- Department of Agroenvironmental Sciences:
  - Farmers facing plant disease issues submit samples through Agricultural Agents to the Plant Disease Diagnostic Clinic for analysis. Diagnostic reports and management recommendations are provided.
    - Training sessions are offered to agents, farmers, and family and consumer sciences educators, who later deliver home gardening workshops to 4-H youth and adults using crop guides for sweet potato, taro, and yam, along with planting materials.
    - Through the RREA initiative, resources were developed to help communities prepare for natural disasters such as hurricanes.

- Trainings focused on identifying and managing diseases in tree nurseries support healthy tree production for planting across Puerto Rico, contributing to environmental and community well-being.
  - The University Institute for Community Development leads ongoing initiatives to build resilience in Puerto Rican communities.
- At Agricultural and Biosystems Engineering, Dr. Eric W. Harmsen provided weekly data on soil moisture, crop stress, and rainfall deficits to the Puerto Rico Scientific Drought Committee and participated in its virtual meetings. He also collaborated with the NOAA RISA Caribbean Collaborative Action Network to support regional adaptation to drought, heat, and flooding.
- Dr. Jeffry Valentín Mari organized a conference on "The Policies of the Fiscal Oversight Board and its Results".
- Dr. Felipe Veluk from Agricultural Economics and Rural Sociology, organized UPR-2025 Climate Action Week (April 21–26, 2025), engaging students, faculty, staff, and communities across UPR campuses in climate resilience dialogue and action.
- At the Department of Agricultural Education:
  - Dr. Janitza Saavedra Lugo led a workshop for Agricultural Education teachers on November 1, 2024, at the Mayagüez Campus. On December 7, 2024, during the Expo CFC at the UPR Botanical Garden, Dr. Ircha Martínez Rodríguez coordinated a personal finance learning experience in a pavilion simulating a store, bank, information center, and Extension office, engaging about 50 participants in this interactive activity. On April 22, 2025, she delivered a Professional Leadership workshop to 12 education students at UPR-Humacao as part of the Leadership Academy, providing strategies to foster leadership development and entrepreneurial thinking in their teaching careers.
  - On March 13, 2025, Dr. Martínez presented the "FCS Empower Yourself" conference to 45 Family and Consumer Sciences professionals as part of the International Day of FCS Professionals.
  - Appendix F shows the PREAS participation in community initiatives summary.
- College of Arts and Sciences
 

At the Department of Psychology, the School Psychology Graduate Practicum Program placed students in schools across Puerto Rico's west coast to deliver mental health services under faculty and licensed supervision. Also, a new graduated practicum and internship agreements were established with the PRDE, Centro Ponceño de Autismo, Reading School District (PA), UPRM Counseling and Psychological Services, Creciendo Juntos 360 LLC, Fundación Mi Ángel Manuel LLC, and UPR Aguadilla. Graduate student Cristina Perea-Nieves served as President of the Association of School Psychologists of Puerto Rico (APEP), which offers free professional forums through *Entre Colegas* and engages in public policy advocacy. Faculty member Mary A. Moreno-Torres served as Executive Secretariat of the Neuropsychology Society of Puerto Rico.

CAISPE is a service clinic offering psychological support for children and adolescents in Puerto Rico's western region. It was designed as a practicum and internship site for doctoral students in School Psychology. It will provide services in four areas: evaluations, psychological interventions, training and educational outreach, and program evaluation.

- At the Department of Physics Mr. Omar Vázquez offered a demonstration of Tesla Coil and Star Lab in Physics' Lobby. Also, he conducted a planetarium demonstrations with the Star Lab at the Church 7mo Día Leguísamo in Mayagüez.
  - The Department of Marine Sciences engaged in extensive outreach by providing multiple local and international media interviews on issues affecting Puerto Rico's coastal marine communities, reaching the widest public audience. The department has hosted several hybrid seminars and a workshop. Students organized 10 departmental seminars, while visiting researchers contributed two sessions: Dr. Fabio Bulleri (Università di Pisa, Experimental Design in Marine Ecology, Nov. 21, 2023) and Dr. Jen McWhorter (NOAA, Biogeochemical Argo Research Applications, Feb. 1, 2024). Also, the department participated in the development of a marine science program for the new Montessori School Alejandro Tapia Rivera in La Parguera. This initiative was coordinated with the school's leadership, Mr. Efraín Figueroa, the Sea Grant Program, and CARICOOS. Collaboration with the DNRA was strengthened, particularly regarding the La Parguera Natural Reserve (LPNR). In addition, the department is conducting research on the increasing influx of floating Sargassum seaweed, a phenomenon that has intensified since 2016. Data from these projects will support the development of forecasting tools to help mitigate the impacts of Sargassum on coastal ecosystems and local communities.
- At the Department of Economics, Dr. Ricardo R. Fuentes Ramírez presented at the Eastern Economic Association and published with international collaborators. He also delivered a personal finance workshop at Eugenio María de Hostos High School. As President of the Association of Economists of Puerto Rico, he led initiatives to strengthen the island's statistical infrastructure, co-authored the Visitor Profile Report for the Puerto Rico Institute of Statistics, and coordinated the 3rd National Meeting of the Social and Solidarity Economy. Dr. Fuentes and Prof. Dahil Colón Arbelo collaborated with the Puerto Rico Planning Board on the Technical Assistance in the Production Quarterly Accounts of the Gross Product and the Output-Input Matrix 2017 (Z-410) project, receiving research credit and funding that supported student assistants. Faculty approved the proposal by Drs. Dahil R. Colón Arbelo and Ricardo R. Fuentes Ramírez to relaunch the Center for Economic and Financial Education (CEEF) as a hub for economic literacy, housed in SH-310. Dr. Carlos A. del Valle González delivered a webinar for the National Institute for Congestion Reduction. The department delivered an economics workshop for public school teachers in collaboration with the Puerto Rico

Department of Education (PRDE). The department co-organized the conference Economic and Environmental Justice: Ecofeminism and Sustainability from Borikén, led by alumna Marianna Defendini Torres under the coordination of Dr. Ivonne Díaz Rodríguez. Faculty also collaborated on resilience planning with the UPR Institute of Communities. Dr. César Rey Hernández delivered a well-attended public lecture on Puerto Rico's educational challenges on September 19, 2024. Faculty and students of the Department of Economics participated in the eighth Economic Sciences Week conferences. and the March 2025 departmental conference. Faculty also shared expertise at national and international venues: Dr. Ricardo R. Fuentes Ramírez presented at the Eastern Economic Association and co-authored publications with international collaborators, while Dr. Carlos A. del Valle González delivered a webinar for the National Institute for Congestion Reduction.

- The Department of Social Sciences events included forums on feminicides, gender-based violence, and international conflicts, as well as book presentations and Earth Day initiatives on environmental awareness. A new internship agreement with the Municipality of Aguadilla, provided the students with hands-on experience in public service. The department also hosted the Latin American Studies Association Puerto Rico Section. The department hosted the summer camp, Reimagining the Possible: Youth, Society, and Change, which enhanced visibility among high school students, introduced participants to departmental programs and research centers, and identified new recruitment strategies.
- The Department of Nursing a new proposal was launched in partnership with Hospital Perea and the PRDE to establish a Certification Program for Operating Room Instrument Technicians, targeting adult learners. The department supported HIPAA compliance training for medical office personnel through an online Continuing Education module, successfully certifying 18 professionals. The department faculty contributed to the 25th Scientific Convention of the American College of Cardiology – Puerto Rico Cardiovascular Section, with Dr. Abigail Matos, Dr. Miriam Nieto, Prof. Kevin Torres, and Prof. Elba Caballero presenting on various topics during the April 11–12 event at the Caribe Hilton, San Juan. Faculty also delivered conferences and health education services to elder care institutions, medical offices, and other community organizations. Faculty contribute to the orientation of caregivers who request assistance in caring for patients with Alzheimer's disease, cardiovascular disease, diabetes, and cancer. Faculty of the Department of Mathematical Sciences delivered invited talks at institutions and conferences in Puerto Rico and abroad. Highlights included plenary lectures by Dr. Portnoy on mathematics, music, and art; presentations by Dr. Calderón on Boolean functions in Puerto Rico and Honduras; and talks on origami, AI in education, mathematical biology, and numerical methods, reflecting the department's diverse expertise. Continued promotion and recruitment of gifted students through the Puerto

Rico Math Olympiad (OMPR) and research-oriented activities. Organization of national and international competitions such as Bebras PR (computational thinking), Scratch Jam, and team selection for the International Olympiad in Informatics (IOI).

- At the Department of English, the Cinémathèque organization contributed to a short film showcasing Puerto Rican heritage. Faculty and students also engaged in the CUA program, providing pre-college experiences for high school students through CARSE grant-supported initiatives.
- The Department of Geology, in collaboration with the Student Geological Society (SGE), the Puerto Rico Seismic Network (PRSN), and the Puerto Rico Landslide Hazard Mitigation Office, advanced extensive outreach efforts with schools, families, municipalities, and emergency management agencies across Puerto Rico. LandslideReady certified Utuado as the first municipality officially recognized as LandslideReady. The Office expanded the program through partnerships with Utuado, Ponce, Adjuntas, Jayuya, and Maricao, hosting workshops with local agencies and FEMA centers. It also submitted a *Memorial Explicativo* to the Puerto Rico House of Representatives regarding the Guánica landslide. National and international visibility was gained through media interviews and an appearance on MeterGroup's podcast. Faculty and students collaborated with the *EcoExploratorio* science museum and hosted events such as *Volcanismo en el Caribe, Hawai y Puerto Rico*, *Geología de la Luna*, and student-led research presentations in Mayagüez and Ponce. Outreach in schools included activities in Corozal, Las Piedras, Moca, and with homeschool groups, including a dinosaur workshop at UPRM. The department showcased 10 exhibits at the Museo de Historia Natural de Puerto Rico, supported by 20 student and faculty volunteers. Additional outreach included activities at the *Museo del Niño* and the 10th Conference on Environmental Issues in Mayagüez.
- The Department of Humanities, is part of the *Proyecto de Escritura Creativa sobre el Cambio Climático* (PECC), faculty led creative writing workshops in public high schools across Mayagüez, Aguada, and Rincón, using poetry, love letters, and short narratives to explore climate change themes. The department also hosted *Semana de la Lengua*, dedicated to science fiction and horror in Puerto Rican literature, which featured panel discussions and a book presentation by UPRM alumna Carolina Cardona. Faculty contributed to the celebration of International Mother Language Day with lectures on language acquisition and Puerto Rican Spanish, and collaborated with the Teacher Preparation Program on a seminar in children's and young adult literature for educators, librarians, parents, and students. Additionally, the department launched *Encuentros Literarios*, a community-based literary initiative focused on the emotional well-being of older adults, integrating literature, music, writing, and visual arts. These efforts were further complemented by hosting an International Poetry Festival with writers from Bolivia, Palestine/Lebanon, and Puerto Rico.

- At the Department of Kinesiology, the “Exercise is Medicine” program promotes physical activity across campus. Community initiatives include “*La Academia de Actividad Física*”, serving youth with disabilities; the Wellness Pediatric Program, addressing childhood obesity; physical activity programs for older adults in nursing homes; and *Programa Metas*, which provides physical evaluations for elite athletes and summer internships for students.
- Colleges of Business Administration
  - CRECEN (*Capacitación Estratégica mediante Resiliencia, Competitividad y Expansión en los Negocios*) advanced student-centered learning through Lego Serious Play workshops, subsidized professional courses, and targeted cohorts in Sports Management. The program acquired 200 Coursera licenses, benefiting 600+ students who completed nearly 1,000 hours of training with an 89% completion rate. CRECEN incorporated FaceReader software, hosted professional development activities like the AI for Entrepreneurs webinar, and supported *El Ropero de ADEM* by promoting donations of professional attire. *El Ropero* provided free professional attire to over 170 students across both events, distributing nearly 470 clothing items to help them dress professionally and access employment opportunities with confidence and dignity. CRECEN led a resume-writing session at Eugenio María de Hostos High School.
  - EDUCON reached a total of 366 participants, including 233 sponsored by CRECEN. The average participation per course was approximately 9 individuals, reflecting a steady demand for continuing education.
- 2. To promote, to develop and to facilitate research, focused in the application and marketing of results to meet the country’s needs.
  - Units Attached to the Deanship of Academic Affairs
    - Army ROTC offers students opportunities to attend national conferences that foster research and professional growth. Cadets participated in the George C. Marshall Conference at Fort Knox, Nursing Summer Training at multiple sites, and events hosted at West Point, Norwich, MIT, and other Ivy League institutions.
    - AFROTC conducted six high school visits to promote Air Force careers alongside college studies. These orientations informed 12th-grade students of scholarship opportunities available for activation in their first fall semester at UPRM.
  - College of Engineering:
    - The Department of Industrial Engineering established the Center of Excellence for Transportation and Logistics (CETL) in partnership with Saltchuk Resources. Located in the Model Factory (II-101), CETL



promotes talent, innovation, and industry collaboration in Puerto Rico's logistics sector. Led by Dr. Héctor J. Carlo, the center strengthens the department's academic and research impact. As outlined in the agreement, UPRM will prioritize hiring two tenure-track faculty to support the development of PhD and D.Eng. programs. CETL has reserved \$150,000 per hire to support research in transportation and logistics, reinforcing its long-term commitment to graduate education and faculty development.

3. To promote student participation in community projects, providing opportunities for these activities within university curricula.

- Units Attached to the Chancellor's Office:
  - The museum hosted *Desvelo: A Look at Healing and Trauma* and the Annual Student Exhibition, with staff guiding students in exhibition planning, installation, and preventive conservation.
- College of Engineering:
  - Civil Engineering:
    - The Water and Environmental Engineering Young Researchers Symposium 2024 (WaterEEYRS-2024) was held on October 29, 2024, showcasing projects from emerging researchers.
    - The 2025 Research Academy Symposium, "Graduate Force: The Hidden Engine Behind Academic Research", was held on April 25, 2025, organized by Dr. Ivette Cruzado Vélez, Dr. Magda S. Galloza, and Mr. Juan A. Padilla Ortiz. It included student oral and poster presentations, with participation from four Civil Engineering and Surveying students.
- College of Arts and Sciences:
 

At the Department of Kinesiology, student participated in departmental and community events such as 5Ks, health awareness days, and triathlons. Numerous courses integrate practical community experience, including coaching, adapted physical education, and seminars on recreation and special populations.

4. To strengthen fundamental values such as ethics, justice, and honesty among our students and employees.

- College of Agricultural Sciences:
 

The Gurabo Substation partnering with the Boy Scouts of America and the 4-H Program, offering facilities and workshops, including sponsorship of Troop 432 – Gurabo. Three youth leaders from OYE, under the Youth and 4-H Clubs Program, collaborated with a local blind association on field visits to pollinator gardens and worked with the Pollinator Ambassador Squad to redesign the 4-H garden at the San Juan Botanical Garden. Two Collegiate 4-H members at UPR-Mayagüez created *En Señas*,

a video series presenting educational topics in American Sign Language.

- Units Attached to the Deanship of Academic Affairs
    - The Army ROTC follows U.S. Army Cadet Command doctrine, assessing Cadets through leadership situational observation and assessment report cards. This structured framework ensures consistent evaluation, enabling progress tracking, feedback, and targeted improvements to strengthen leadership, responsibility, and effectiveness.
    - At the library, CEDIBI and GRIC co-organized the Research Integrity Series, addressing the use of AI tools for literature reviews and the ethical use of images. Aimed at graduate students, faculty, and researchers, the series also offered professional development hours through the Center for Professional Development (CEP). The Patent and Trademark Resource Center (PTRC) coordinated the workshop Taller Propiedad Intelectual para Todos, presented by Ing. Edgar Guerra-Erazo, Primary Patent Examiner at the USPTO, as part of the agency's Inspiring Hispanic Innovation and Entrepreneurship Program during Hispanic Heritage Month. The Center also hosted free virtual sessions on prior art searches, intellectual property for entrepreneurship, patent essentials, and IP in academia, broadening awareness of intellectual property rights in academic and entrepreneurial contexts.
    - The PPM's Future Teachers Association, a student initiative, organized fundraising activities that fostered entrepreneurial skills and leadership development, while workshops reinforced the values of ethics, justice, and honesty.
5. To promote entrepreneurial and leadership approaches among our students throughout all fields of knowledge.
- Units Attached to the Deanship of Academic Affairs
    - AFROTC hosted the Zone Blitz project on campus, a day of events promoting resiliency in Puerto Rico. Air and Space Force officers and enlisted personnel engaged students by answering career-related questions. In April, 50 cadets participated in an Overnight Field Training Exercise at the Guajataca Scout Reservation. The two-night, three-day training enhanced leadership skills and simulated a deployed environment.
  - College of Agricultural Sciences:
    - At the Department of Agricultural Economics and Rural Sociology, the 5th Applied Economics Congress was held on May 9, 2025. Dr. Tatiana A. Méndez invited guest speakers to her classes to strengthen ties with the educational community and industry. These efforts promoted knowledge exchange, student leadership, and innovation through conferences and applied research.

- The Agro Market fostered student leadership and entrepreneurship by offering a space to promote and sell their products, encouraging initiative and practical business skills.
- College of Engineering:
  - On February 4, 2025, the Aero Meet and Talk was held in TurboLab (L-008), organized by the Aerospace Sciences Committee and advisor Yolanda Pérez, and sponsored by the Center for Aerospace and Unmanned Systems Engineering and Pratt & Whitney Puerto Rico. The event offered students informal mentorship, academic guidance, and career insights in the aerospace field.
- College of Business Administration
  - BEDC lead institution of the Caribbean Regional University Center (CRUC) with University of the Virgin Islands (UVI-CELL), completed its scope of work. At UPRM, results included 40 jobs created, 209 retained, and \$959,011 in investment; UVI-CELL reported 15 jobs created, 92 retained, and \$172,975 in investment. BEDC also delivered 197 hours of individualized assistance to 175 new clients, supported by 31 student interns (15 graduate). It continues to serve as hub of the UPRM E-Ship Network, with partners such as the Mayagüez Chamber of Commerce, NSF I-Corps, Banco Popular's Echar Pa'lante, Engine 4, PRIMEX, West Gravitel Agency, the PTRC at UPRM, and Colmena 66. Key initiatives included the conclusion of the NPO-SIED Program, which supported 40 nonprofits, and the launch of the two-year Post-Award Grants Management Technical Assistance Program (PAGM-TAB), funded by EDA. The Seed Fund Program, supported by a \$200,000 Banco Popular grant, provided direct aid to 25 businesses annually. Área E produced 113 outreach materials, received 58 applications, and oversaw the Acceleration Program. In Cohort 5, 43 of 52 businesses completed the program, with 23 achieving measurable improvements such as websites, marketing plans, business permits, and revenue growth. Sixteen mentors—including faculty, staff, and external experts—provided 74.25 hours of mentoring and 16.5 hours of technical assistance, significantly expanding business support.
  - Eli Lilly, Boeing, the Naval Surface Warfare Center, Pharos Solutions, and Bank of America engaged ADEM students through info sessions, lobby tables, and classroom visits. Pharos Solutions awarded \$3,000 scholarships to three students through its summer internship program. On March 18, 2025, the Naval Nuclear Laboratory presented career opportunities in the energy sector.
  - With the support of the Dean of Academic Affairs, AFROTC Det 756 established the Distinguished Graduate (DG) award for the first time at UPRM, ensuring that the top-performing cadet is recognized during the UPRM graduation ceremony.

Objective #7: To strengthen school spirit, pride, and identity

1. To provide excellent support and infrastructure services to our students and to the entire college community

- Units Attached to the Chancellor's Office
  - During this academic year, OPIMI also undertook numerous projects, some were categorized as permanent improvements: *Hotel Colegial* Renovation and Athletic Track. Maintenance projects included work on: repaving project and improvement to the electric system. The list of projects, along with their details and status, can be found online at <https://oiip.uprm.edu/> under the project dashboard.
  - At CID major technological infrastructure achievements include:
    - Upgrading internal network infrastructure by replacing outdated switches and increasing backup storage capacity from 6TB to 30TB.
    - Implementing new security protocols, including YubiKey-based authentication, in preparation for federal systems access.
    - Conducting an internal technology assessment in anticipation of the end-of-support for Windows 10 and planning the phased acquisition of Windows 11 compatible devices.
    - Supporting remote work capabilities and mitigating cybersecurity risks, while maintaining core services, such as server uptime, software management, Help Desk support, and website updates.
    - Coordinating infrastructure changes to support office relocations, user setup, and network expansion, thereby ensuring seamless technological transitions across departments.
  - At the Natatorium Complex, reconstruction projects addressing hurricane and earthquake damage were reactivated, incorporating mezzanine needs into the amended plan. Surface reconstruction of the warm-up pool (Pool 2) began, enabling the future reactivation of courses, community activities, and sports practices. A classroom was designated for academic proposals from the Department of Kinesiology and research initiatives, including the RUMARINO project.
  - At the Information Technology Center (CTI per its Spanish name), advanced several key projects aimed at strengthening the Campus' digital infrastructure and support services. These initiatives focused on expanding wireless and network capacity, upgrading cabling systems, enhancing hybrid education facilities, and responding to a wide range of user service requests. The improvements are part of a broader effort to ensure reliable, modern, and efficient access to information technologies across the campus community. See Appendix G for details.
- Units Attached to Deanship of Administration
  - At the Buildings and Grounds Department, five trolleys equipped with wheelchair ramps were acquired for use in the College Routes collective

transportation system. The department also collaborated in the maintenance of the existing infrastructure. Some examples of their efforts are in Appendix H.

- Hotel Renovations and Improvements:
  - Rooms 400, 424, 500, 511, 523, 623, and 711 received updated shower and bathroom facilities. Renovations are still pending for rooms 411, 412, 512, 600, 611, 612, 700, 710, and 722.
  - The laundry, kitchen, and study areas were remodeled to better serve student-athletes and support their daily needs.
- College of Agricultural Sciences:
  - At PRAES:
    - Extended Unit in Río Piedras renovated and furnished its conference room (\$69,995) for formal and non-formal educational activities.
    - The Finance Office in the Roberto Huyke Building was renovated and furnished (\$187,000) to support administrative functions, while the building itself was repainted and received roof safety upgrades (\$68,000).
    - The Northeast Extended Unit underwent facility improvements, including repainting, parking rehabilitation, a backup generator, and roof waterproofing (\$103,411). Its conference room was also renovated and furnished (\$49,995) to enhance educational services.
  - At the Gurabo Substation, electric fences were installed for small ruminant grazing, and a solar energy system will power the CIRAT laboratory to reduce research disruptions from power outages. The Juana Díaz Substation built a safety staircase for its diesel tank, and the Lajas Substation reconstructed a 60' x 25' roof over the cattle weighing area used for livestock care and veterinary treatments.
- College of Engineering
  - The INME Department redesigned academic and administrative areas to enhance student engagement. A new deck was built at the Luchetti Building.
  - The Civil Engineering Department acquired A/C ducts for the Soil Lab, 10 Total Stations with accessories for the Surveying Lab (ABET funds), and 24 computers for the undergraduate computer center (Technology Fee funds).
  - The “El Museo” area at the RUM Research and Development Center was remodeled with access keys, a new machine shop for special project manufacturing, and 15 computers installed in the “PACE” section.
  - The Computer Science and Engineering Department co-organized the Second International Symposium on Intelligent Computing and Networking 2025 (ISICN) in San Juan. Faculty members participated as presenters, authors, and members of the organizing and technical program committees.

- Colleges of Arts and Sciences
  - The Department of Psychology improved its infrastructure by creating a new research lab in CH- 404, relocating services to the renovated Celis 104 building, and acquiring two new classrooms (CH-322 and CH-404). CH-322 was painted and both rooms were equipped with new TVs. Graduate courses are now also held in Celis 103.
  - Through RUMex funds, the Department of Economics acquired three desktop computers for teaching staff (\$3,417) and continues to seek funding for additional units. Also, \$10,958.86 in RUMex funds supported two more faculty computers, audiovisual equipment, office supplies, and activities of the Economics Student Association. Additionally, \$2,770 from RUMex and CEEF resources financed the installation of two glass doors in SH-307 as part of facilities improvements.
  - At the Department of Geology, Residencia 4A was reconditioned to house the Puerto Rico Landslide Hazard Mitigation Office, coordinated by Dr. K. Stephen Hughes. Residencia 2 was reassigned to the Geology Department for the reorganization of the Museum of Geology, expected to reopen, at least partially, in 2025–2026.

## 2. To encourage student participation in college student organizations

- Units Attached to the Dean of Students Affairs:
  - At the Department of Social and Cultural Activities, in 2024–2025, 187 student organizations were recognized. The department supported activities such as music for the April 24 Pep Rally and decorations for the Animal Science Student Association's Spooky Paws event. A total of 1,004 events were authorized and promoted through Vida Colegial mailings and UPRM's official social media.
- College of Arts and Sciences
  - AECIMA, the Department of Marine Sciences student organization, strengthened community engagement through the annual Scientific Symposium, workshops, open houses, facility tours, and cultural activities. It also led beach cleanups and supported departmental promotion across Puerto Rico.
  - The American Chemical Society (ACS) student chapter visited three schools and participated in the San Juan Chemistry Festival in April, part of National Chemistry Week, engaging the community through experiments and demonstrations. The chapter also organized coastal cleanups, contributing to environmental conservation.
  - The Sigma Theta Tau International Honor Society of Nursing (Epsilon Lambda Chapter), based in the department and the only chapter of its kind in Puerto Rico, hosted a formal induction ceremony and an international virtual conference titled Human Trafficking: International Crime, led by Dr.

Luis Rivera-Cintrón. The event engaged Sigma Theta Tau chapters across South America, Spain, and Puerto Rico via Microsoft Teams.

- College of Engineering
  - The Electrical and Computer Engineering students advanced projects in solar and electric boat design and transitioned its racing team to Formula SAE Electric, completing key systems and components in preparation for 2026 international competitions.
  - The ASEE Student Chapter hosted the 9th Engineering Fun Day on March 22, 2025, promoting UPRM engineering programs to high school students. Participants engaged in hands-on research activities, while parents attended sessions highlighting opportunities within the College of Engineering.
  - Draco – Competed in NASA University Student Launch; placed 26th/50 with improved landing accuracy, near-predicted apogee, and successful parachute deployment.
  - UPRM Moonbuggy – 5th place overall in NASA Human Exploration Rover Challenge 2024–2025 (Huntsville, AL); 32 members from 5+ concentrations; previous Moonbuggy exhibited at EcoExploratorio.
  - UPRM Aero Design – 40 members from 5+ concentrations participated in 2025 SAE Aero Design West (Los Angeles, CA) the achievements were: 2nd place Overall and Mission Performance (Advanced Class); 4th place in Micro Class presentation and report. They also hosted workshops, project fairs, and industry demos.
  - UPRM Roboboat – Semifinalists at 2025 RoboNation (Sarasota, FL); 1st place Best Website.
  - Rumblebots – NHRL (Norwalk, CT): competed in 3 lb and 12 lb categories; “Arsenal” placed 9th/30+; gained key design improvements.
  - AON Robotics VEX – 2nd place locally; qualified for 2025 VEX Worlds (Dallas, TX); 40% of members obtained internships/co-ops.
  - RASC-AL – NASA 2025 finalist with MORPHN rover concept.
  - SPARC – Student-led aerospace group combining RASC-AL and IONIC-S teams; earned multiple NASA RASC-AL awards since 2018; IONIC-S developing CubeSat for planetary defense. Grew to 62 members with 25% in competitive internships; reached 1,000+ students through STEM outreach and aerospace events.
  - Project-AV – Presented at Yuri’s Night 2025 to industry leaders, sponsors, and astronauts in training.
  - ASME – Hosted career development activities including a resume workshop with Pratt & Whitney, job fair preparation with Eastman, and an “Internships & Co-ops” discussion panel. Student Design Competition (ASME project) – Competed at ASME E-Fest (Dallas, TX).
  - IEEE-EMBS – Organized professional and technical events including talks on research opportunities, research facility tours, healthcare innovation,

3D printing for prosthetics, starting research, research showcases, stress management for grad applications, Ansys design optimization, industry applications of Power BI, and personal statement writing.

- AFIM – 110 members; 19 internships/co-ops; launched “Mechdrinas” mentorship program; reached 150+ students through outreach; participated in ILEW Conference (California).
- SERRT – Competed in Formula Sun Grand Prix 2025 (16th/26 SOV class); built and tested Boricua Bolt-89 solar car; expanded outreach and sponsor relations.
- Colegio Racing Engineering (Formula SAE Team) – Building first EV; design completed, manufacturing in progress; attended FSAE EV Workshop; industry tours.
- Loxodon-1 Liquid Propulsion – 25 members; manufactured first aluminum thrust chamber and wireless sensor system; hosted propulsion workshops; engaged in STEM outreach events.
- SEDS-UPRM – Now under Mechanical Engineering; launched ASTRA project; gained industry mentors; presented at major aerospace events; initiated aerospace lab; partnered with PR NASA Space Grant for CubeSat project; won Space Vision Art Competition.
- Athletics – Alejandro Emanuel Iriarte Quiñones – Fourth-year student-athlete; bronze in 4x110m hurdles relay and 4x800m relay at LAI Relays; bronze in 400m hurdles and 4x400m relay at 2025 LAI Justas.
- Athletics – Thaís M. Chaparro Méndez – Mechanical Engineering student; undefeated LAI judo champion (-45 kg) for four years; three-time Women’s Olympic Festival gold medalist.
- Athletics – Nnanazom Uwakweh – Mechanical Engineering student; silver and bronze medalist representing UPRM in LAI.
- Department of Industrial Engineering – Student Achievements:
  - IE Department Scholarships (Dr. Armando Riesco):
    - \$1,000: Yamieleny M. Meléndez, Alondra Collazo, Emmanuel Nazario
    - \$500: Jaime M. Rodríguez, Gerard Hernández
  - Capstone Project Award: "Mejorando las Operaciones de la Empresa Café Oro..." – Abdiel Ocana Colón & Elvin Ramos Valentín
  - IIE Annual Conference: Participation of 8 students
  - Alpha Pi Mu: 2nd Place – Outstanding Chapter Award
  - Paul E. Givens Scholarship awarded to Alondra Collazo
  - ININ Research and Design Expo:
    - 9 research projects presented by 20 students
    - 31 capstone teams (62 students) showcased senior design projects
  - Achievement Activity 2023–2024
    - Held on September 28, 2024, and sponsored by Banco Popular and the Popular Foundation, the event recognized:
      - 159 students on the Honor Roll
      - 40 student-athletes



- 19 student participants in the band and orchestra
  - Department of Civil Engineering and Surveying
    - ASCE Student Chapter – Placed 3rd overall at the 2025 Southeast Student Symposium; won 1st in Timber Strong, 2nd in Concrete Canoe, 3rd in Steel Bridge, and multiple event awards, including Spirit and Sustainable Solutions Fan Favorite.
    - ACI Student Chapter – At the ACI Fall 2024 Convention (Philadelphia), won 3rd place Best in Show in the Pervious Cylinder Competition. At ACI Spring 2025 (Toronto), earned 2nd place in Analysis and Esthetics for the FRC Bowling Ball competition.
    - AGC Student Chapter – With advisor Dr. Francisco Maldonado Fortunet, earned 1st in Heavy Civil, 2nd in Concrete Solutions, and 1st in Alternate Leadership at the ASC Competition (Nov 2024).
    - Steel Bridge Team 2023–2024 – Placed 2nd overall at the Canadian Nationals (May 2024), winning in Overall Performance, Construction Speed, and Circular Engineering. Competed at U.S. Nationals (May–June 2024), placing 4th in Lightness and 7th in Construction Speed and Economy.
    - Student Recognitions:
      - Fenella Vicente Sandoz and Nicole N. Román Correa received the Ing. Luis M. Carrillo Jr. Scholarship.
      - Edwin Santana Caraballo received a \$5,000 AASHTO/DTOP scholarship and began a Master's in Structural Engineering.
      - Ilán Sebastián Álvarez Nieves received the Ing. Max Figueroa Award for the highest GPA in Civil Engineering.
      - Solar District Cup – A multidisciplinary team with four CE students won the national competition by NREL.
      - TRB and Eisenhower Fellowships – UPRM students presented nine research projects at the 104th TRB Annual Meeting in Washington, DC (Jan 2025).
      - Seismic Design Team – Returned to competition after years of inactivity, participating in the 2025 Seismic Design Competition (Berkeley, CA).
- College of Agricultural Sciences:
  - The Student Organization Fair enhanced student engagement by uniting associations to share their missions, recruit members, and encourage interdisciplinary collaboration.
  - Agroplug, held March 27–29, 2025, by *Cinco Días en Nuestra Tierra*, welcomed thousands of visitors, especially students from all educational levels, to showcase the College's departments, student groups, and academic offerings.
  - Junely Nieves, from the General Program in Agricultural Sciences, represented UPRM in the Future Farmers of America (FFA) State Competitions.

- At MUSA, Víctor A. Robles Molina (Food Science) exhibited an acrylic painting titled *"Miedo a soñar"*, while Eliudes S. Camps Marcano (Agroenvironmental Sciences) presented two ceramic pieces: *"Las quenepas del expreso"* and *"Las últimas guanábanas de Goyín"*.
- Jafet Santos, Agroenvironmental Sciences student and 4-H member, was named 4-H National Bee Champion and finalist in the 4-H Youth in Action Leadership Program for his contributions to beekeeping and community leadership.
- A 4-H student delegation received a \$3,800 scholarship to participate in the 2025 Ignite 4-H Conference, where they presented *"Safe Space"*, a youth-led initiative at Juan Ponce de León School.
- After a two-week field experience in Belize (May 19 – June 7, 2024), students held a forum on October 29, 2024, to share their learning on Mayan soils. Students and faculty presented a research poster on Belizean soil types, highlighting Vertisols, Mollisols, and Alfisols (December 2024).
- At the SOPCA Annual Meeting (December 2024) Karla N. Ormaza-Rivera won 1st place in the oral presentation category and Adriana P. Lugo-Tosado won 1st place in the poster presentation category.
- Twenty undergraduate and graduate students participated in the 5th Applied Economic Annual Congress held on May 9, 2025.
- The student associations of the Department of Agroenvironmental Sciences organized the 3rd Agroenvironmental Camp at the Adjuntas Agricultural Experiment Station. The camp featured educational activities on coffee production as well as workshops on insects and beekeeping. Recreational events included game nights, karaoke, movie screenings, a river visit, and a guided hike to Cerro Monte Guilarte.
- Horticulture Student Association Activities were:
  - Garden Design Workshop: Focused on green space enhancement, plant selection, and garden styles, applied in the Piñero Forest.
  - Agricultural Law Workshop: Provided an overview of agricultural legislation in Puerto Rico.
  - Floral Arrangement Workshop & Sale: Hands-on training in basic floral design, culminating in a Valentine's Day flower sale.
  - Alanys Nicole Farm Visit: Field trip to learn about plantain production and farm management.
  - Campo Alegre Farm Tour: Visit to a pineapple farm to study its production process and current challenges.
  - Voluntary Cleanup Brigade at Ricura Caribeña: Community service activity promoting environmental stewardship.
  - Campus Picnic: Social event to foster community among members, featuring food, music, and games.
  - Association Fair: Promoted student organizations and encouraged student participation.

- Animal Science Student Association outreach activities included Orientation Week for freshmen, UPRM Open House, Association Fair, and Agroplug. Social events featured Game Night, Spooky Paws, Agrovalentine, and Paint and Wine. Educational talks covered topics such as rabies management, veterinary school applications, equine clinical cases, pet chemotherapy, shelter medicine, pollinators, and milk nutrition. Volunteer work and visits included animal shelters, vaccination and adoption events, dairy goat judging, and farm visits in Gurabo, Lajas, and other locations for workshops and hands-on learning.
- At the Department of Agricultural and Biosystems Engineering, the Asociación de Estudiantes de Sistemas Agroambientales (AESA) held its first initiation ceremony since 2019 on April 29, 2025, marking its reactivation after the COVID-19 pandemic. In 2024–2025, AESA offered workshops on welding and drone use in agriculture, and the department hosted one student gathering per semester to strengthen student-faculty connections.
- Colleges of Arts and Sciences
  - At the Department of Economics, students were recognized for excellence, with Alexis Wu and Félix Arostegui securing top awards at the 4th and 5th Applied Economics Congresses and Wu earning.
  - Student achievements were also notable Yolimar Vera Avilés received the Hilda Baco Award. students Keyla M. Ortiz Ramos and Alejandro M. Vargas Rosario were among the recipients of First Bank's "You First" scholarship. Also, a collaborative paper involving faculty and students was awarded Best Paper in the Multidisciplinary Engineering Division at the ASEE 2024 Annual Conference.
  - The Department of Social Sciences students achievements include: sixty-six students were recognized on the Honor Roll, and Daniela M. Iturrino Betancourt received the prestigious Salvador Brau Award. At the the Puerto Rico United Nations Congress competitions two students earned first and fourth place, under the mentorship of Dr. Waldemar Arroyo. Faculty were active in scholarship and public service, with Dr. Ingrid Rodríguez Ramos receiving a grant from the Puerto Rican Endowment for the Humanities and the Mellon Foundation, and Dr. Carlos Hernández being named Official Historian of Puerto Rico.
  - The Department of Mathematical Sciences continued to foster a culture of excellence through initiatives such as the Departmental Colloquium, the Gauss Medal for academic achievement, and outreach programs including the Pre-Calculus and Calculus Competency events and the COMATEQ International Competition.
  - For the first time, the Department of Nursing participated in the 2024 Toyota Mobility Challenge, securing a \$25,000 award to develop the Home Racer, a vehicle designed for individuals with mobility challenges. The

interdisciplinary project was led by Dr. Abigail Matos in collaboration with three nursing students and one mechanical engineering student.

3. To provide adequate areas for extracurricular and co-curricular activities which promote healthy lifestyles
  - College of Engineering
    - The Mechanical Engineering Department (INME) held two orientation events for freshmen in 2024—on October 29 and October 31—with 54 and 152 students attending, respectively.
  - Units Attached to the Deanship of Academic Affairs
    - AFROTC advanced cadet training and development through multiple competitive programs. Capt. Michael Deaton completed Cyber 200, a one-month advanced cyber operations course at the Air Force Institute of Technology (Dayton, OH). Seven cadets were commissioned in Summer 2025, while another seven attended a six-week Field Training program at Maxwell AFB (AL), preparing them for entry into the Professional Officer Corps. Five cadets trained at the U.S. Air Force Academy (CO) in parachuting, space operations, combat survival, powered flight, and combatives. One cadet studied abroad in Kyrgyzstan through Project Global Officer, a two-month foreign language immersion program. Additionally, three cadets completed summer internships at the Air Force Institute of Technology focused on immersive cyber operations. Detachment 756 took 18 cadets to MacDill AFB for an immersion in operational missions, including Explosive Ordnance Disposal, K-9 and Security Forces demonstrations, and an Engineering Squadron visit. Eighteen cadets from Detachment 755 also participated.
    - OHL and GRIC strengthened their partnership with ¡Loíza Vive! (LV), a community group dedicated to preserving Loíza's history and culture through community archiving. GRIC supported LV in organizing archival materials, designing metadata, and developing an online collection to enhance visibility and access. OHL strengthened engagement with the Archivo de Respuestas Emergencias de Puerto Rico (AREPR) and UPR-Río Piedras. The project developed digital collections showcasing grassroots organizations across Puerto Rico. GRIC librarians contributed by creating and revising metadata for Come Colegial, a community initiative based at UPRM.
  - College of Arts and Sciences
    - The Department of Psychology fostered a vibrant culture of student engagement, community service, and international collaboration. Eight active student associations are affiliated with the department: AEPE, AEPSIC, PSI CHI, Puppy RUM, Emotional Intelligence Alliance, Neuro RUM, Active Minds, and PRISM ROOM.

- The Department of Kinesiology promotes student engagement through the Kinesiology Student Association and its chapters, including the Sport Psychology Association, Exercise is Medicine on Campus, Surfing, Officiating, Ultimate, Volleyball, and Pickleball associations. Students also collaborate across disciplines, such as with Biology in the Chiropractic Association.
  - The Student Geological Society advanced outreach, recruitment, and departmental activities by leading educational sessions for homeschool and K–12 students and co-organizing the Annual Geology Symposium (Feb. 28–29, 2025), dedicated to Prof. James Joyce.
  - The English Department supports nine student organizations at both undergraduate and graduate levels, fostering activities such as Camp ARCI, community service, film screenings, workshops, among others. Faculty from across ranks mentor groups including the Bookworm Society, Cinémathèque, the English Department Student Association, Her Campus, and the Pop Culture Student Association. These interdisciplinary organizations enrich the academic and cultural life of the department and campus.
4. To strengthen ties with alumni and surrounding communities sponsoring their participation as partners in academic endeavors
- Units Attached to the Chancellor's Office
    - At MUSA, an important donation was processed, featuring works by the late Mayagüez-born artist Noemí Ruiz, including her own pieces, works by master artist María Emilia Somoza, and a collection of posters. The donation process was also initiated for a sculpture by master artist Melquiades Rosario, previously owned by art critic and historian Nelson Rivera.
  - Units Attached to the Dean of Students Affairs:
    - The Placement Office provides resume reviews for all alumni requesting its services and grants them access to participate in job fairs.

At the library, new collaborations were established to expand education on artificial intelligence, intellectual property, data analysis, thesis and dissertation submission into Scholar@UPRM, and community projects. Partnerships in intellectual property education included academic units (UPR Río Piedras' Centro para la Excelencia Académica – Ciclo de Innovación y Emprendimiento, UPRM's Centro de Negocios y Desarrollo Económico, UPR Bayamón), federal agencies (USPTO and its Patent and Trademark Resource Center Program, Office on Innovation, and Eastern Regional Outreach Office), local organizations (Ruta Artesanal Boricua, Colmena 66, Puerto Rico Science, Technology and Research Trust), universities (Universidad Central del Caribe, Ohio State University), and private firms (Aldarondo IP, Ferraiouli LLC, Alvarez Legal, Zerodamage,

Emu Comfort, DECA Analytics, Advisor and Taxes, Taller Jurídico Educativo, Marsellesa Coffee Shop). These collaborations significantly strengthened outreach and training opportunities for students, faculty, and the community.

- College of Arts and Sciences
  - A key philanthropic milestone was the establishment of the José Bauermeister Scholarship, a \$10,000 fund dedicated to supporting undergraduate students pursuing research internships in applied psychology and public health outside Puerto Rico beginning in summer 2026. Dr. José A. Bauermeister, an alumnus and current professor at the University of Pennsylvania, generously endowed the fund.
  - The Rita Walsh MD Scholarship, established in 2012 to support graduate students in Marine Sciences and the School of Medicine in Ponce, was created through an agreement signed by then UPR President Dr. Miguel Muñoz and Mrs. Carmen Walsh Rivera. Funded through dividends from Mrs. Walsh's investments, Central Administration records indicate two deposits totaling \$452,838.79; however, information on deposits from other years and the total endowment for assistantships remains pending clarification.
  - At the Department of Economics, on May 8, 2025 was the inauguration of the Founders Library Museum, featuring a collection donated by Prof. Alfredo González Martínez.
  - A Political Sciences Alumni, Orlandy Cabrera Valentín, was confirmed as Prosecutor I at the Puerto Rico Department of Justice.
- College of Agricultural Sciences:
  - At the Department of Agricultural Education, the Collegiate FFA Alumni Organization participated in activities including association fairs (August 1 and September 10, 2024), chapter meetings (September 3, 2024, and February 4, 2025), a leadership workshop (October 3, 2024), movie and game nights, and a fellowship event. Community service included a beach cleanup in Aguadilla on November 16, 2024, and a coffee harvest with local farmers on November 23, 2024.
- College of Engineering
  - As part of her communication plan, Dean Cristina Pomales hosted monthly "Coffee with the Dean" sessions during the second semester of 2024–2025, engaging students, parents, alumni, and CAAM Parents' Association members.
- College of Business Administration
  - The 2025 Honor Roll Celebration was held on April 24, recognizing top-performing CBA students with \$3,500 in scholarships funded through partnerships coordinated by a retired faculty member.

- Units Attached to the Deanship of Academic Affairs
  - ROTC secured over \$5,000 annually in alumni and peer-organization support, supplementing U.S. government funding and reinforcing student success and achievement.

5. To make evident our school pride throughout the country

- Units Attached to the Chancellor's Office
  - MUSA was joining the Bloomberg Connects cohort, sponsored by the Flamboyán Foundation. This opportunity integrates the museum into a global network, enabling the sharing of educational content on its exhibitions and collections and offering MUSA new international visibility. The museum also launched a collection of donated catalogs and publications for a future research room and began drafting a collaborative agreement with the MUSA Foundation, among other initiatives.
- Units Attached to the Deanship of Administration
  - During the week of August 12–16, 2024, the Purchasing Agents was honored as part of the annual Purchasing Agents' Week. In addition, purchasing personnel participated in the annual "Puerto Rico Compra" Convention, organized by the General Services Administration (ASG), furthering their professional development and engagement with the broader procurement community.
- Units Attached to the Dean of Students Affairs:
  - On November 21, 2024, the Financial Aid Department held a recognition event to honor its staff, featuring a motivational talk, gift distribution, and certificates of recognition.
  - The musical groups of the Band and Orchestra Department actively fostered institutional identity and strengthened the sense of belonging at the Mayagüez Campus.
  - In 2024–2025, the Student Exchange Program sent 89 UPRM students abroad through UNIV 4000 courses, 79 of whom studied in international destinations including Canada, Japan, Mexico, Spain, and South Korea. The campus also welcomed 10 incoming exchange students. Collaboration agreements were further strengthened with universities in the Netherlands, Spain, and the United States, specifically Iowa State University, Middlebury College, and the SUNY Oswego program.
- Units Attached to the Deanship of Academic Affairs:
  - The PPM strengthened collaboration with the PRDE. PRDE supervisors trained teacher candidates on current educational policies and procedures through two workshops, one per semester, reaching over 60 students enrolled in methodology courses.

- The library actively fosters belonging and collegiate pride through collaborations with student organizations. The OHL continues its partnership with *Come Colegial* to document community-driven work and has collaborated with Cinémathèque and the Film Certificate Program on student-directed documentaries. Joint initiatives with the English Department, Pop-Culture Student Association, English Department Student Association, and RUM Linguistics Association included a notable exchange with Edgardo Miranda Rodríguez, creator of *La Borinqueña*. Additionally, the Library supports student groups by providing physical spaces to promote their missions and fundraise, further cultivating institutional pride and engagement.
- UPR-Mayagüez currently hosts 368 active international students and 64 newly admitted for Fall 2025—the largest international student population in Puerto Rico. The campus attracts top talent from Latin America, India, Europe, the Caribbean, China, and beyond, enhancing UPRM's global reputation in academics and research. The guidance of Dr. Frances Santiago (PDSO) and Mrs. Janet Estrada (DSO) ensures students complete their studies successfully and return home as ambassadors who encourage others to apply. Each semester, the integration of new international students and faculty fosters intercultural exchange and belonging, enriching academic, social, and cultural experiences. Activities—supported by the International Student Association (CIU-RUM)—promote community building through food, music, films, and other cultural expressions. UPRM also benefits from its affiliation with associations such as NAFSA: International Educators Association and the Interuniversity Alliance for International Education in Puerto Rico, which enhance integration efforts and advance internationalization through symposiums, conferences, and cultural initiatives.
- College of Agricultural Sciences:
  - Back to CCA (August 29, 2024), a welcome event for doctoral students (December 3, 2024), the Honor Roll recognition (February 3, 2025), Open House events at Plaza Las Américas (May 2–3, 2025) and UPRM (May 17, 2025), and the Promotion to Professional Life ceremony (June 11, 2025).
  - Recognitions:
    - Dra. Merari Feliciano-May 9, 2025, received the “CAS Chancellor’s Distinguished Research & Innovation Award 2025”.
    - Dr. Oscar Abelleira (Department of Agroenvironmental Sciences) Received a Plaque of Appreciation – Natural Resources Association (ARENA) – April 23, 2025
    - Dr. Janitza Saavedra Lugo (Department of Agricultural Education) was recognized as Outstanding Woman of the Northern District 2025 by the College of Agronomists in March 2025.



- On May 1, 2025, the Faculty celebrated Administrative Professionals Day to acknowledge the dedication, hard work, and outstanding performance of its support staff.
- College of Engineering Recognitions:
  - Dr. Umberto Ciri received the 2023–2024 Outstanding Professor Award in Mechanical Engineering.
  - Athletics – Nilsa Paris – INME secretary; gold in 100m, 200m, and 400m at Puerto Rico Government Employees Association Games (May 2024), earning Most Valuable Athlete. Bronze in 4x200m relay at World Masters Indoor Championship (Mar 2025). Gold in 4x200m and silver in 100m at National Masters Athletics Championship (Jun 2025). Honored by Puerto Rico Legislature and UPRM.
  - Dr. Aidsa I. Santiago was named Distinguished Professor 2023–2024 for her professional excellence and service. She and Dr. Christopher Papadopoulos also received the 2024 ASEE Best Paper Award in the Multi Engineering Division for their research on students' mindsets toward sustainability.
  - Dr. Héctor Carlo Colón and Dr. Samuel Bonet Olivencia were recognized as 2023–2024 Distinguished Professors in the Department of Industrial Engineering.
  - Dr. Evi De La Rosa received the "Mujer Destacada en Iberoamérica EIMIAA 2024" award, was elected President of the III EIMIAA Symposium Committee, and participated in the 1st Distinguished Women's Forum. She also earned Engineer in Training status after passing the FE exam (March 25, 2025).
  - Dr. Alberto Figueroa was elected President of the Puerto Rico Section of the Institute of Transportation Engineers (ITE) for 2025.
  - Dr. Benjamín Colucci Ríos was honored at the 56th Collegiate Return by the Alumni Association and Collegiate Foundation, Inc.
  - Alumni Engagement and Recognitions:
    - Ing. Andrés Matos delivered a guest lecture on geotechnical aspects of concrete construction to ACI and ASCE student chapters.
    - Damaris Santiago, Civil Engineering alumna, was featured in Minority Engineer magazine (2024) and achieved Senior Executive Service (SES) status at FHWA.
    - Ing. Eileen Vélez Vega, Secretary of DTOP and UPRM alumna, will be inducted into the Space Camp Hall of Fame in 2024—the first Puerto Rican to receive this honor.
- College of Arts and Sciences Recognitions
  - At the Department of Social Sciences, Dr. Ingrid Rodríguez Ramos receiving a grant from the Puerto Rican Endowment for the Humanities and the Mellon Foundation, and Dr. Carlos Hernández being named Official Historian of Puerto Rico.

- At the Department of Mathematical Sciences, Dr. Edwin Flórez received PR-INBRE awards for projects in neuroscience, instrumentation, and curriculum development. Drs. Omar Colón and Luis Cáceres obtained multiple grants from the American Mathematical Society, the Mathematical Association of America, and institutional sources (CRRSAA and UPRM Chancellor Funds) to support co-requisite instruction and the Math Tutorial Lab.
- On June 11, 2025, the Department of Psychology recognized staff and faculty for their service and contributions. Staff members Anita Martínez and Deyka López were honored for their dedication, while Dr. Douglas Santos and Dr. Bernadette Delgado received plaques for their pivotal role in launching and developing the doctoral program.
- College of Business Administration Recognitions
  - Dr. Moraima De Hoyos Ruperto was honored on May 9 during the inaugural Chancellor's Distinguished Faculty Research & Creative Endeavor Award ceremony.

## VI. UPRM Anthem

Entonemos compañeros  
un himno rudo y marcial  
el poema de optimismo  
que levanta el corazón  
es el canto del Colegio  
Hecho de un astral fulgor  
y la música divina  
que un rayo le rubricó...  
Alma Mater colegial  
epopeya del saber  
norte de nuestro deber  
este canto llevará  
a la cumbre nuestra grey  
que en marcha está.

Autores

Letra: Sra. Laura Honoré de Cuebas

Música: Dr. Rafael Sánchez Día

## **VII. Appendices**

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## Appendix A. Examples of trainings

- Units Attached to the Chancellor's Office:
  - The CID delivered targeted training workshops for faculty and staff on budgeting, proposal development, and compliance through the Center for Professional Enrichment (CEP).
  - Pre-Award division personnel completed various training activities related to different topics in proposal submission and compliance and other emerging and innovation topics. The list includes the following:
    - NSF Foreign Financial Disclosure Report Demonstration
    - NGMA Best Practices Pre-Award y post-award Webinar
    - NGMA 2024 Grant Management Body of Knowledge Training Part 1
    - NGMA 2024 Grant Management Body of Knowledge Training Part 2
    - NGMA New Member Orientation Webinar
    - NGMA Webinar: Audit-Proof Your Organization: Mastering the Art of Financial Transparency
    - HSI Federal Grants Bootcamp
    - NIH Grants Process Primer: Application to Award
    - SAM.gov Subaward Reporting Workshop: Roles and Permissions
    - Taller: Fundfit with ORCID y SciENcv Workshop
    - NGMA: Risk Management in Grants Management: Identifying, Assessing, and Mitigating Risks
    - USPTO Webinar - Fundamentos básicos de las patentes
    - Taller práctico sobre Microsoft Copilot Chat
    - 3er Coloquio sobre Propiedad Intelectual (UPRM)
    - 2025 AUECO Annual Conference (Houston, Texas)
    - 2025 Sanctions and Export Enforcement Trends Webinar
  - At CID Budget Office, a workshop was offered on how to process the creation of accounts.
  - At MUSA, workshops, talks, and training sessions included a lecture on trauma by Yan Serrano (Counseling and Psychological Services, RUM); a gallery attendants and customer service training by Program Coordinator Alba G. González Valentín; gender justice workshops by Yinaria Reyes Gutiérrez; and Basic Tips for the Care and Maintenance of Our Collections, led by undergraduate Joharis Ramos Abreu, librarian Katherine Irizarry Rivera (Puerto Rican Collection, RUM), and collections registrar Pedro D. Fortunato Velázquez (MUSA).
- Units Attached to the Deanship of Academic Affairs
  - At the Office of Immigration Affairs, Dr. Frances Santiago conducted ten orientation sessions covering topics such as on-campus employment for F-1 students, OPT/CPT processes with USCIS, visa eligibility (including DACA and undocumented students), institutional crisis management protocols, and recruitment processes for faculty and postdocs (H1B, J1, OPT, STEM-OPT, CPT). These sessions kept international students,

scholars, and administrators informed on federal regulations, ICE guidelines, SEVP requirements, and DHS updates. Participant evaluations guided the selection of future topics and ensured relevance to community needs. These orientations also updated the Admissions Office, OEG, CID, academic departments, and deans on international student and scholar services, while helping identify emerging issues. In addition, Dr. Santiago supported strategic planning for faculty recruitment, international admissions, and collaborations with visiting researchers. She reviewed job postings for new hires in collaboration with HR staff and provided an orientation on international hires at the request of the HR Director. To support retention, Dr. Santiago ensures timely processing of permanent residency applications, coordinating PERM petitions within the 18-month period allowed under Special Handling.

- Units Attached to the Deanship of Administration
  - EHS Office provides comprehensive training for faculty, staff, and students as example:
    - OSHA Hazard communications standard (29 CFR 1910.1200)
    - Laboratory Management Plan (40 CFR 1910.1200)
    - Chemical Hygiene Plan (29 CFR 1910.1450 Laboratory standard)
    - Safety in Laboratory
    - Puerto Rico Explosive Law
    - Management of Regulated Biomedical Waste
    - Safe practices and personal protective equipment (PPE) usage
    - Emergency procedures
    - Machinery and heavy equipment operation
    - Hazard recognition
  - At the Personnel Liaison Office, a variety of workshops and activities were delivered in in-person, hybrid, and virtual formats for campus personnel, including:
    - New Employee Orientation
    - Guidance on “Jornal” Student Processes
    - Managing Emotions
    - Leadership Challenges Focused on Trust
    - Biopsychosocial Aspects
    - Telework Orientation
    - Suicide Prevention: Effective Strategies to Reduce Access to Lethal Means
    - Salary Differential
    - Functional Diversity
    - Assistive Technology
    - Retirement Orientation
    - Women’s Day Activity
    - Emotional Intelligence for a Competitive and Harmonious Work Environment

- College of Business Administration
  - The Business Research Center (CIE, by its Spanish acronym) was utilized by 15 faculty members. During the second semester, CIE organized and facilitated a range of developmental and scholarly activities:

| Date    | Type     | Title                                                  | Presenter(s)                                                  |
|---------|----------|--------------------------------------------------------|---------------------------------------------------------------|
| 2/25/25 | Seminar  | Ongoing Research Seminar Series                        | Dr. John Villavicencio & Dr. Maritza Soto                     |
| 3/26/25 | Webinar  | Artificial Intelligence for Academic Research (CLADEA) | Dr. Carlos Osorio Toro, Mariano Gentilin, Dr. Carlos Loperosa |
| 4/4/25  | Workshop | Research Statistics: Useful Tools                      | Dr. Rosario Ortiz                                             |
| 4/24/25 | Workshop | AI Tools for Literature Reviews                        | Dr. Anidza Valentín                                           |
| 4/29/25 | Seminar  | Ongoing Research Seminar Series                        | Dr. Luz Gracia                                                |
| 5/7/25  | Webinar  | Strengthening Forum for Authors (CLADEA)               | Dr. Nicolás Núñez                                             |

## Appendix B. Brief description of research collaboration agreements within the CAS

| Organization                                          | Effective Date      | Purpose                                                                                                                                                                                                                           |
|-------------------------------------------------------|---------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Boys and Girls Clubs of PR, Inc.                      | 02/17/22 – 12/31/25 | FAC – MOU with the CAS for the exchange of data and information for research on children and youth in Puerto Rico.                                                                                                                |
| Department of Agriculture - ADEA                      | 08/09/23 – 06/30/25 | AES - A comprehensive analysis of local coffee production, farm costs and consumer coffee prices. Dr. Julio César Hernández – Project Leader                                                                                      |
| Department of Agriculture - FIDA                      | 09/05/23 – 09/30/25 | AES - 'Protecting the fruit sector of Puerto Rico from the fruit fly' - Sampling of traps and fruits and monitoring of the fruit fly. Prof. Irma Cabrera Asencio - Project Leader                                                 |
| Department of Agriculture - FIDA                      | 11/13/23 – 12/31/26 | AES – 'Evaluation of Cannabinoids Content and other Components in Selected Hemp Varieties using HPLC and GC/MS'. Dr. Miguel Muñoz – Project Leader                                                                                |
| Planning Board of Puerto Rico                         | 11/21/23 – 06/30/25 | AES - Technical assistance in the production of the quarterly accounts of gross product. Dr. Julio César Hernández – Project Leader                                                                                               |
| Florida Certified Organic Growers and Consumers, Inc. | 01/25/24 – 12/30/25 | AES - Establishment of a Regional Center for the transition from traditional agriculture to organic agriculture in the southeastern region of the USA, including Puerto Rico. Dra. Julia M. O'Hallorans Castillo – Project Leader |
| Pratt Institute                                       | 05/20/24 – 12/31/25 | AES - Project Z-413 'NSF Convergence Accelerator Track J: Aqua Steady, an Alginate-based Hydrogel for Sustainable Agriculture in a Changing Climate'. Dr. David Sotomayor – Project Leader                                        |
| Puerto Rico Infrastructure Financing Authority        | 12/30/24 – 12/30/54 | AES – Development of an Integrated Platform for Monitoring and Forecasting Harmful Algal Blooms at the San Jose Lagoon in San Juan. Dr. Gustavo Martínez - Project Leader                                                         |
| University of Hawaii                                  | 01/24/25 – 09/30/26 | AES - for the development of Project Z-407 - Tropical Soil Health Tool Development". Dr. David Sotomayor Ramirez - Project Leader                                                                                                 |
| Gates Agricultural Innovations, LLC                   | 02/20/25 – 02/19/30 | AES - to perform research, development, pre-commercial, and regulatory activities necessary for translating early-stage innovations into commercial products. Dr. Martha Giraldo – Project Leader                                 |
| Department of Natural Resources                       | 04/01/25 – 12/31/25 | AES – for the development of the proposal "Determination of the Spatial and Temporal Variability of PFAS Compounds in Reservoirs and Rivers of Puerto Rico. Dr. Gustavo Martínez - Project Leader                                 |



## Appendix C. Summary of the project names at PRAES and AES

### Agricultural Extension Service

- Education and Conservation Practices for Sustainable Agriculture in Puerto Rico
- NIFA Rapid Response to Extreme Weather Events
- Puerto Rico's Sustainable Practices Outreach Project
- Rescuing the Criollo Cattle of Puerto Rico
- Conservation practices to comply with FSMA law and NRCS policies
- Socially Disadvantage Farmers & Ranchers
- Development of Water Harvesting Facilities, Irrigation Systems
- Tools through PRAES to enhance coffee quality and marketing opportunities
- Are our bees superheroes? Their role as pollinators and plant propagation
- Transition to Organic Partnership Program
- Farm Administration Program
- Enabling Climate-Smart Decisions in Tropical Dairy Farms
- 4-H La Casa de Todos a positive and safe space for all
- 4-H youth leaders respond to community needs using sciences knowledge
- 4-H Beyond Ready
- 4-H Bugs & Fungi Adventure
- 4-H Mobile Theatre
- 4-H OYE
- Strengthening of rural and urban communities through sustainable production and consumption models
- NRCS Community Gardens Project
- Healthy and Sustainable Families: personal finances & access to healthy food
- Health and well-being: adoption of practices that promote healthy lifestyles
- Food security: Access to affordable, healthy & safe food for all

### Agricultural Experiment Station

#### At Gurabo Substation:

- H-535 – Evaluation of New Plantain (*Musa* spp.) Cultivars for Potential Commercial Production in Puerto Rico, Dra. Martha C. Giraldo Zapata, USDA-\$200,000.00; Project Objective(s): Evaluation of agronomic traits, disease and pest susceptibility, and yield performance of new plantain cultivars in the collection.
- H-538 - Estrus synchronization and detection protocols comparison in Tropical Holstein, Dra. Verónica Negrón Pérez, USDA-\$220,000.00 (4 years) (Jan 2024-Nov 2027); Objectives – To compare estrus synchronization protocols and estrus detection methods in slick and non-slick Holstein cows, with the overall goal of identifying the optimal approach for tropical conditions.
- **H-547 – Sustainable Grazing Systems for Small Ruminants**  
*PI: Dr. Alfredo Aponte Zayas | Funding: USDA – \$198,000 (4 years, Jan 2024–Nov 2027); Objectives: Evaluate pasture composition, stocking rate, forage yield, quality, persistence, height, and nitrogen uptake under rotational grazing with 1- and 3-day paddock rotations using goats. Assess soil health, fertility, animal weight gain, health, and reproduction. Develop outreach and educational activities to share knowledge with farmers and agricultural professionals.*
- C-517 – Research Organic Farm., Dra. Julia O'Hallorans, USDA \$11,000 (2011-Present); Objectives: To demonstrate USDA organic certification processes to farmers interested in organic agriculture, improve crop management techniques under the organic system, and promote organic farming through publications, demonstrations, validations, field days, and the sale of certified organic seeds.
- A-021 Ganado– Raising and Management of Cattle, Agro. Ramón A. Couto Marrero, 2019-Present; Objectives: Management of slick-haired heifers from RUM to promote their development and the genetic improvement of the herd.
- Z-402 FLORIDA ORGANIC GROWERS - SOUTHEAST REGIONAL CENTER FOR ORGANIC TRANSITION, DRA. JULIA O'HALLORANS, USDA NIFA \$75,000 ANNUAL; Project Objective(s): Develop Farmer-to-Farmer Mentoring Resources. Community building among organic farmers and transitional to organic farmers through field days. Technical assistance and training for organic transitional farmers. Collect data on impacted individuals/communities.

#### At Isabela Substation:

- Research to develop new bean varieties under Project H-351, led by Dr. Consuelo Estévez and Dr. James Beaver.
- Various pesticides are being studied under Project H-372, led by Dr. Wilfredo Robles.
- Various agricultural practices for yams are being evaluated under Project H-522, led by Dr. Merari Feliciano.
- New pigeon pea varieties are being developed under Project H-94V, led by Dr. Diego Viteri.
- Pasture and forage varieties are being studied and improved under Project H-519, led by Dr. Elide Valencia.
- Disease-free citrus varieties are being identified and propagated under Project Z-284, led by Dr. Consuelo Estévez.
- Various avocado cultivation practices are being studied under Project H-402, led by Dr. Elvin Roman Paoli and Dr. Rebeca Tirado.
- Genetic material from Yautia continues to be evaluated in the H-94D project led by Dr. Marta Giraldo.

At Corozal Substation:

- The IR-4 project, “Pesticide application field training for root and tuber crops” has significant impact.

#### Department of Agroenvironmental Sciences

- *Dr. Martha Giraldo – Root Crop Research for Food Security*  
*This project supports the recovery of celery root and cassava cultivation to reduce reliance on imports and preserve local varieties. Key efforts include preventing taro (yautía) genetic loss through clean planting materials and tissue culture. Integrated pest management for sweet potato, taro, and yam was developed alongside outreach materials, including multilingual comic-style guides (Super Batatas, Super Yautías, Super Names) to promote awareness and consumption of traditional crops.*
- Dr. Wilfredo Robles Research: Registration of Pesticides for Tropical Crop Protection. The registration of two pesticides was successfully obtained. These products will contribute significantly to the management of pests and diseases affecting tropical crops such as coffee, banana, and mango
- Dra. Irma Cabrera Research: Protecting the Fruit Sector of Puerto Rico from the Fruit Fly. Support is provided to fruit-exporting farmers in understanding the damage caused by fruit fly larvae and in obtaining certifications that identify the specific fruit fly species present in their produce. The impact of this project lies in enabling farmers to meet export requirements, thus allowing them to successfully access European markets with their fruit products
- Dra. Consuelo Estevez Research: The Puerto Rico Plant Diagnostic Clinic (PRPDC) is part of a consortium of plant diagnostic laboratories established in 2002 by USDA - NIFA (National Institute of Food and Agriculture) and the Office of Homeland Security to enhance agricultural biosecurity and safeguard US agriculture and natural systems. The insect and disease diagnostic data is submitted to the NPDN (National Plant Diagnostic Network) national repository at the Center for Environmental and Regulatory Information Systems CERIS at Purdue University. The PRPDC is an accredited plant diagnostic laboratory that meets quality standards to conduct timely and quality detections.
- Prof. Jose Zamora Research: The use of artificial light (powered by solar energy) was developed to induce off-season flowering in pitahaya. This approach successfully advanced flowering by six weeks, enabled some fruit production year-round, and increased the number of flowers by 35% during the regular flowering season. Farmers are beginning to implement artificial lighting systems (powered by solar energy) in their pitahaya plantings.
- Prof. Wanda Almodovar Research: Integrated Pest and Pollinator Management  
Two trainings were offered (Pollinator Curriculum Guide and Identification and IPM of Pests and Diseases in Tree Nurseries), along with ten activities (including field days, exhibits, and workshops). Outreach efforts reached approximately 12,000 people through Facebook and Instagram posts. The pollinator webpage was maintained and updated, and the Bee Campus initiative was established at the University of Puerto Rico at Mayagüez (UPRM)

#### Department of Agricultural and Biosystems Engineering

- Development of hydrological and energy balance models for the U.S. Virgin Islands to support agricultural planning and drought assessment (Harmsen). The hydrological model for St. Croix is fully operational, generating daily data on 25 agro-hydro-climatic variables to support water resource decision-making. Similar models for St. Thomas and St. John are expected to be available by summer 2025.
- Assessment of sediment transport using proximal sensing technologies and simulated rainfall events (Acuña).
- Development of value-added products from surplus tropical fruits, including dehydrated fruit and marinade dressings (Pérez-Muñoz).

#### Department of Agroenvironmental Sciences – Research Highlights

- Dr. Diego Viteri and Dr. Ángela Linares: Released new pigeon pea and common bean varieties with disease resistance and favorable agronomic traits. A USPTO patent was granted on March 28, 2025, for two pigeon pea germplasm lines: *IIPG 7* and *IIPG 11*.
- Dr. Wilfredo Robles: Led a study under IR-4 Project (2024–2025) evaluating botanical extracts for insect pest and weed control.

#### Department of Agricultural Economics and Rural Sociology

Dr. Leticia Gayol submitted the following proposal in February 2023 to the Hatch Program (Agricultural Experiment Station) “Impact of Hiring Imported Agricultural Workers on Coffee, Vegetable, and Root Crop Farms: Management Strategies.”

#### Department of Agricultural Education

- Dr. Yvonne Laracuente Bernat:  
Project: Validation of a Curriculum Guide on Ageism - During the 2024-2025 academic year, the school carried out an intergenerational educational project focused on validating a curriculum guide on ageism. This initiative responds to the need to educate younger generations about prejudice against older adults, promoting values such as respect, empathy, and social justice.

## Appendix D. Publications and Presentations at the CAS

| Reference (author, year, title, title of the journal or publisher, volume, number)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               | Publications                |                                                     | Status    |                          |
|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------|-----------------------------------------------------|-----------|--------------------------|
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  | Peer-reviewed (ej. Journal) | Non peer-reviewed (ej. Newspaper, PRAES Newsletter) | Submitted | Approved/ Published      |
| <b>Department of Agroenviromental Sciences</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |                             |                                                     |           |                          |
| Hadechiny X., Pérez F., Plaza M., and Hernández E. 2024. Post-Harvest Practices of Specialty and Asian Vegetables Grown in Puerto Rico. [Unpublished master thesis]. University of Puerto Rico. (Project H-492)                                                                                                                                                                                                                                                                                                                                                                                                                  |                             | Thesis Dissertation                                 |           | Under review             |
| Feliciano-Rivera, M. 2024. Detecting Threats to Better Protect Crops in Puerto Rico. In Press, DOI: <a href="https://doi.org/10.33548/SCIENTIA997">https://doi.org/10.33548/SCIENTIA997</a> . (The DOI is not live yet but is the one assigned to the article). (Project H-486)                                                                                                                                                                                                                                                                                                                                                  |                             | X                                                   |           | Accepted for publication |
| Viteri, D. M., Linares, A. M., and Vázquez, R. (2024). Release of UPR-Mp-37 and UPR-Mp-48 common bean germplasm with improved resistance to ashy stem blight. Journal of Plant Registrations 18: 142-148. <a href="https://doi.org/10.1002/plr2.20330">https://doi.org/10.1002/plr2.20330</a> (Project H-094)                                                                                                                                                                                                                                                                                                                    | X                           |                                                     |           | X                        |
| Viteri, D. 2024. Establishment of pollen/seed preservation facilities for important crops in Puerto Rico. NIFA ANNH and Insular Areas Programs Project Directors Meeting. Kansas City, Missouri, May 29-31, 2024 (Project Z-376)                                                                                                                                                                                                                                                                                                                                                                                                 |                             | Conference Papers and Presentation                  |           | X                        |
| Ortiz-Román, Melissa I., Ileska M. Casiano-Muñiz, and Félix R. Román-Velázquez. Ecotoxicological Effects of TiO <sub>2</sub> P25 Nanoparticles Aqueous Suspensions on Zebrafish (Danio rerio) Eleutheroembryos. Nanomaterials 14.4 (2024): 373 ; <a href="https://doi.org/10.3390/nano14040373">doi.org/10.3390/nano14040373</a> , Roman ORCID 0000-0003-1149-3384 (Projects Z-359/Z-360)                                                                                                                                                                                                                                        | X                           |                                                     |           | X                        |
| Casiano-Muñiz IM, Ortiz-Román MI, Lorenzana-Vázquez G, Román-Velázquez FR. Synthesis, Characterization, and Ecotoxicology Assessment of Zinc Oxide Nanoparticles by In Vivo Models. Nanomaterials. 2024 Jan 24;14(3):255. <a href="https://doi.org/10.3390/nano14030255">doi.org/10.3390/nano14030255</a> ; Roman ORCID 0000-0003-1149-3384 (Projects Z-359/Z-360)                                                                                                                                                                                                                                                               | X                           |                                                     |           | X                        |
| Ortiz-Román, Melissa I., Ileska M. Casiano-Muñiz, and Felix R. Román-Velázquez. Toxicity of UV Filter Benzophenone-3 in Brine Shrimp Nauplii (Artemia salina) and Zebrafish (Danio rerio) Embryos. Journal of Xenobiotics 14.2 (2024): 537-553; <a href="https://doi.org/10.3390/jox14020032">doi.org/10.3390/jox14020032</a> ; Roman ORCID 0000-0003-1149-3384 (Projects Z-359/Z-360)                                                                                                                                                                                                                                           | X                           |                                                     |           | X                        |
| Casiano-Muñiz IM, Ortiz-Román MI, Carmona-Negrón JA, Román-Velázquez FR. UV filter Benzophenone-2: Effects on Zebrafish (Danio rerio) cytochrome P450. Aquatic Toxicology. 2024 May 27:106973. <a href="https://doi.org/10.1016/j.aquatox.2024.106973">doi.org/10.1016/j.aquatox.2024.106973</a> ; Roman ORCID 0000-0003-1149-3384 (Projects Z-359/Z-360)                                                                                                                                                                                                                                                                        | X                           |                                                     |           | X                        |
| Forero-Montaña, J., A. Rúa, L.E. Santiago, S. Ward, H. Marcano-Vega, J.K. Zimmerman, W.A. Gould, O.J. Abelleira-Martínez, J. Rosario, and E.J. Meléndez-Ackerman. Strategic Guidelines for the Sustainable Management of Forest Resources in Puerto Rico: Opportunities, Challenges and Stakeholders in the Production Chain of the Forestry Sector. USDA Forest Service General Technical Report. (Project Z-358)                                                                                                                                                                                                               |                             | Annual Report                                       |           | Under Review             |
| Abelleira Martínez, O.J. 2024. Management of Puerto Rican Novel Forests for Biodiversity Conservation and Agroforestry Production. Oral presentation in the Seminar of the Student Association of Natural Resources (ARENA) held on April 9, 2024, in the P-213 Amphitheater of the Jesús T. Piñero Building, UPRM. (Project Z-358)                                                                                                                                                                                                                                                                                              |                             | Conference Papers and Presentation                  |           | X                        |
| Abelleira Martínez, O.J., and A. Pérez Méndez. 2024. A wood products laboratory and outreach facility to support sustainable community forestry in Puerto Rico. Oral presentation in the USDA-NIFA RIIA-AGFEI Program Directors Meeting held on May 29, 2024, in room 333 of the USDA-NIFA Headquarters Building, Kansas City, Missouri. (Project Z-358)                                                                                                                                                                                                                                                                         |                             | Conference Papers and Presentation                  |           | X                        |
| Abelleira Martínez, O.J., J. Rivera, G. Túa, R. Cruz, G. Báez, A. Marengo, A. Rodríguez, M.d.R. Suárez, and A. Pérez Méndez. 2024. A Conversation About Best Management Practices for Forests in US Virgin Islands and Puerto Rico: Silviculture in Secondary Forests. Oral presentation in the workshop A Conversation about Best Management Practices with Dr. Oscar Abelleira organized by the Virgin Islands Department of Agriculture and the US Forest Service and held on July 18, 2024, in the Cooperative Extension Services Building, University of the Virgin Islands, St. Thomas, US Virgin Islands. (Project Z-358) |                             | Conference Papers and Presentation                  |           | X                        |
| Abelleira Martínez, O.J., J. Rivera, G. Túa, R. Cruz, G. Báez, A. Marengo, A. Rodríguez, M.d.R. Suárez, and A. Pérez Méndez. 2024. A Conversation About Best Management Practices for Forests in US Virgin Islands and Puerto Rico: Silviculture in Secondary Forests. Oral presentation in the workshop A Conversation about Best Management Practices with Dr. Oscar Abelleira organized by the Virgin Islands Department of Agriculture and the US Forest Service and held on July 16, 2024, in the Little Theater Room 401, University of the Virgin Islands, St. Croix, US Virgin Islands. (Project Z-358)                  |                             | Conference Papers and Presentation                  |           | X                        |

| Reference (author, year, title, title of the journal or publisher, volume, number)                                                                                                                                                                                                                                                                                                                                                                                                                                 | Publications                |                                                     | Status    |                     |
|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------|-----------------------------------------------------|-----------|---------------------|
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    | Peer-reviewed (ej. Journal) | Non peer-reviewed (ej. Newspaper, PRAES Newsletter) | Submitted | Approved/ Published |
| Pérez Méndez, A., and O.J. Abelleira Martínez. 2024. Where Wood Comes From: Planning and Best Practices for Harvesting and Using the Wood Resource. Oral presentation administered to participants of the Student Agricultural Fair (Agroplug) held on April 12, 2024, in fairgrounds of University of Puerto Rico, Mayagüez. (Project Z-358)                                                                                                                                                                      |                             | Conference Papers and Presentation                  |           | X                   |
| Pérez Méndez, A., and O.J. Abelleira Martínez. 2024. High stakeholder participation in our workshops illustrates the growing interest in wood products research and education. Poster presented in the International Mass Timber Conference held on March 26 to 28, 2024, in the Portland Convention Center, Portland, Oregon. (Project Z-358)                                                                                                                                                                     |                             | Conference Papers and Presentation                  |           | X                   |
| Pérez Méndez, A.P., and O.J. Abelleira Martínez. 2024. Best Practices for Wood Drying: Construction and Operation of a Solar Kiln. Oral presentation in the third workshop on "Sustainable Use of Wood in Puerto Rico" sponsored by this project and held on June 24, 2024, in the Amphitheater of the College of Agricultural Sciences, University of Puerto Rico, Mayagüez. (Project Z-358)                                                                                                                      |                             | Conference Papers and Presentation                  |           | X                   |
| Felix Echevarria, D. & J. P. Morales-Payan. 2024. Effects of an extract of the marine alga Ecklonia maxima on 'MD2' pineapple in Isabela, Puerto Rico. Abstracts of the 42nd meeting of the Puerto Rico Interdisciplinary Meeting (PRISM), 42:63. (University of Puerto Rico Aguadilla Campus. April 20, 2024). (Project Z-361)                                                                                                                                                                                    |                             | Conference Papers and Presentation                  |           | X                   |
| Gonzalez Flores, J. & J. P. Morales-Payan. 2024. Effects of different rates of an amino acid formulation on 'MD2' pineapple leaf chlorophyll. Abstracts of the 42nd meeting of the Puerto Rico Interdisciplinary Meeting (PRISM), 42:65. (University of Puerto Rico Aguadilla Campus. April 20, 2024). (Project Z-361)                                                                                                                                                                                             |                             | Conference Papers and Presentation                  |           | X                   |
| Valladares Garcias, E. & J. P. Morales-Payan. 2024. Comparison of organic, conventional and mixed management programs in breadfruit (Artocarpus altilis) in southwestern Puerto Rico. Abstracts of the 42nd meeting of the Puerto Rico Interdisciplinary Meeting (PRISM), 42:64. (University of Puerto Rico Aguadilla Campus. April 20, 2024). (Project Z-361)                                                                                                                                                     |                             | Conference Papers and Presentation                  |           | X                   |
| Vega-Martínez, A. & J. P. Morales-Payan. 2024. Comparative characterization of avocado accessions at the Agricultural Experiment Station in Lajas, Puerto Rico. Abstracts of the 42nd meeting of the Puerto Rico Interdisciplinary Meeting (PRISM), 42:56. (University of Puerto Rico Aguadilla Campus. April 20, 2024). (Project Z-361)                                                                                                                                                                           |                             | Conference Papers and Presentation                  |           | X                   |
| Rosado Rivera, R. & J. P. Morales-Payan. 2024. Residual effects of conventional and organic management programs in avocado in southwestern Puerto Rico. 42nd meeting of the Puerto Rico Interdisciplinary Meeting (PRISM), University of Puerto Rico Aguadilla Campus. April 20, 2024. (Project Z-361)                                                                                                                                                                                                             |                             | Conference Papers and Presentation                  |           | X                   |
| Keyser, T.L., Abelleira Martínez, O.J., Gould, W.A., González, G., Lugo, A.E. Chapter 4: Overview of the forest management related issues and opportunities in the Caribbean. In: Schuler, Thomas; Jain, Theresa; Day, Michelle; Patel-Weyand, Toral., eds. Pages 61-98 In: Active management for resilient and productive forests. USDA Forest Service General Technical Report: U.S. Department of Agriculture, Forest Service, Washington D.C. (Project Z-358)                                                  |                             | Annual Report                                       |           | X                   |
| Rosa N. Chávez-Jáuregui, Rogelio Cianchini-Díaz, Génesis Pérez Pérez, Fernando Pérez Muñoz. Yam (Dioscorea rotundata) flour extruded snack. The 22nd IUFOST – World Congress of Food Science and Technology. Rimini, Bologna, Italy on 08 – 12 September 2024. (Project Z-523)                                                                                                                                                                                                                                     |                             | Conference Papers and Presentation                  |           | X                   |
| Rosa N. Chávez-Jáuregui. Situación actual de ñame, yautía y plátano en Puerto Rico: consumo, producción y procesamiento. 1er Simposio sobre Alimentación en América Latina y el Caribe: Soberanía y Sostenibilidad. Campinas, São Paulo, Brasil, 10-12 julio, 2024. (Project Z-523)                                                                                                                                                                                                                                |                             | Conference Papers and Presentation                  |           | X                   |
| Beaver, J. S., González, A., Mateo, B., Lutz, G. G., Miranda, A., Rosas, J. C., & Porch, T. G. 2024. Release of multiple virus and bruchid resistant Mesoamerican bean germplasm lines PR1303-129 and PR1743-44. Journal of Plant Registrations, 18, 149–156. (Project H-351)                                                                                                                                                                                                                                      | X                           |                                                     |           | X                   |
| Sotomayor-Ramírez, D., K. Araya Guzman, G. Martínez. Validación del análisis de suelo de fósforo como herramienta diagnóstica para la fertilización en hortalizas. Caribbean Food Crops Society (CFCS) 2024. Abstract and Oral presentation at the 57 th CFCS Annual Meeting from 14 to 20 July 2024, Punta Cana, Dominican Republic. . (Project H-517)                                                                                                                                                            |                             | Conference Papers and Presentation                  |           | X                   |
| Sotomayor-Ramírez and G. Martínez. Validación del análisis de suelo de fósforo como herramienta diagnóstica para optimizar la fertilización en hortalizas. 18 December 2024. Horticulture and Basic Grains Commodity Seminar Series. [Empresa de Hortalizas UPRM] Sotomayor, D. (2024, 19 de diciembre). Análisis de suelo de fósforo: Una herramienta diagnóstica para la fertilización en hortalizas [Video]. YouTube. <a href="https://youtu.be/_eL6DeeCh1c">https://youtu.be/_eL6DeeCh1c</a> . (Project H-517) |                             | Electronic Publication                              |           | X                   |
| Naomi Maldonado P., Cabrera- Asencio I. 2024. Coleópteros barrenadores de madera recolectados en trampas "Cross-Vane" en árboles de Mangifera indica: Nuevos reportes y nueva especie para Puerto Rico. J. gric. Univ. P.R. 108(2):115-157 (2024). . (Project H-520)                                                                                                                                                                                                                                               | X                           |                                                     |           | X                   |

| Reference (author, year, title, title of the journal or publisher, volume, number)                                                                                                                                                                                                                                                                                                                                     | Publications                |                                                     | Status    |                     |
|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------|-----------------------------------------------------|-----------|---------------------|
|                                                                                                                                                                                                                                                                                                                                                                                                                        | Peer-reviewed (ej. Journal) | Non peer-reviewed (ej. Newspaper, PRAES Newsletter) | Submitted | Approved/ Published |
| Gallardo, F. Uso de rompevientos en café de altura para disminuir efectos del minador del café, <i>Leucoptera coffeella</i> . Reunión Anual de la Empresa de Café. PROCAFE. 15 de noviembre de 2024. (Project H-540)                                                                                                                                                                                                   |                             | Conference Papers and Presentation                  |           | X                   |
| Gallardo Covas, F. Rompevientos como estrategia de mitigación del cambio climático en la producción de café en Puerto Rico: Impacto en las plagas <i>Hypothenemus hampei</i> y <i>Leucoptera coffeella</i> . Reunión Anual. Sociedad Puertorriqueña de Ciencias Agrícolas. 13 de diciembre de 2024. Aguadilla, Puerto Rico. (Project H-540)                                                                            |                             | Conference Papers and Presentation                  |           | X                   |
| Valencia E., and E. Quijia. 2024. Soybeans [ <i>Glycine max</i> (L.) Merr.] cultivar and phenological growth stages effects on yield, nutritive value and silage fermentation characteristics. ABST. Caribbean Food Crops Society Meeting. July 2024. (Project H-519)                                                                                                                                                  |                             | Synopsis / Abstract                                 |           | X                   |
| Merari Feliciano-Rivera. 2024. Propagating a New Generation of Yam in Puerto Rico. Ebook. <a href="https://doi.org/10.33548/SCIENTIA1003">https://doi.org/10.33548/SCIENTIA1003</a> (Project H-522)                                                                                                                                                                                                                    |                             | Electronic Publication                              |           | X                   |
| Aponte-Zayas, Alfredo. 2024. "Fertilidad, Rendimiento y Calidad de Forrajes Mejorados en la Zona Húmeda Subtropical de PR". Symposium and forum titled "Hacia una nueva agenda de investigación y educación en agricultura sostenible, agroecológica y orgánica para el Colegio de Ciencias Agrícolas," August 21, Finca La Zafra, Gurabo, Puerto Rico. (Project H-502)                                                |                             | Conference Papers and Presentation                  |           | X                   |
| Carro-Figueroa, Vivian and Marydoris Quiñones-Cancel. 2024. "Transiciones agroecológicas en Puerto Rico y las fincas orgánicas de la Estación Experimental Agrícola de la UPR". Poster presentation at the 62nd annual meeting of the Caribbean Food Crops Society, July 14-19, Bavaro, Dominican Republic. (Project H-503)                                                                                            |                             | Conference Papers and Presentation                  |           | X                   |
| Carro-Figueroa, Vivian. 2024. "Transiciones agroecológicas y orgánicas en Puerto Rico y las fincas orgánicas de la Estación Experimental Agrícola". Oral presentation at the symposium and forum titled Hacia una nueva agenda de investigación y educación en agricultura sostenible, agroecológica y orgánica para el Colegio de Ciencias Agrícolas, August 21, Finca La Zafra, Gurabo, Puerto Rico. (Project H-503) |                             | Conference Papers and Presentation                  |           | X                   |
| Aponte-Zayas, Alfredo. 2024. Evaluación de hortalizas y prácticas de supresión de malezas en sistemas orgánicos y agroecológicos [Presentación oral]. Meeting of Vegetable and Basic Grain Producers, Estación Experimental Agrícola, Lajas, Puerto Rico. (Project H-503)                                                                                                                                              |                             | Conference Papers and Presentation                  |           | X                   |
| Aponte-Zayas, Alfredo. 2024. Evaluación de hortalizas y prácticas de supresión de malezas en sistemas orgánicos y agroecológicos. Oral presentation at the symposium and forum titled Hacia una nueva agenda de investigación y educación en agricultura sostenible, agroecológica y orgánica para el Colegio de Ciencias Agrícolas, August 21, Finca La Zafra, Gurabo, Puerto Rico. (Project H-503)                   |                             | Conference Papers and Presentation                  |           | X                   |
| Aponte-Zayas, Alfredo. 2024. Producción Agroecológica. Presentación Oral, Centro Empresarial para el Desarrollo de la mujer en la Agricultura. septiembre 15 2024 Mayagüez PR. (Project H-503)                                                                                                                                                                                                                         |                             | Conference Papers and Presentation                  |           | X                   |
| Valencia, E. and J. Muir. 2024. Potencial productivo de los híbridos ( <i>Urochloa</i> ) en la cuenca del caribe. ABST. PCCMCA, Costa Rica, June 2024. (Project H-094)                                                                                                                                                                                                                                                 |                             | Conference Papers and Presentation                  |           | X                   |
| Rebecca Tirado Corbalá, Elvin Román Paoli, Alejandro Rodríguez Cintrón y Aranxa Martínez Cortés. 2024. Dinámica de carbono/nitrógeno en diferentes combinaciones de variedades de cítricos creciendo en un Oxisol. 47 Reunión Científica Anual SOPCA, Aguadilla, Puerto Rico. 13 diciembre de 2024. Poster. (Project H-094)                                                                                            |                             | Conference Papers and Presentation                  |           | X                   |
| Rivera, D.E., and Tirado, R.C. Effect of crop distance in 'Pera' sweet orange grafted in 'HRS 812' Rootstock in Puerto Rico. JAUPR (Submitted to the Journal of Agriculture of the University of Puerto Rico 2024). (Project H-094)                                                                                                                                                                                    |                             | Conference Papers and Presentation                  |           | X                   |
| Fernández, G., Rivera D.E., Tirado, R.C. and Alvarado, A. Evaluación de Kumquat 'Nagami' ( <i>Fortunella margarita</i> ) injertado en 'HRS-812' cultivados en tiestos dentro de estructura cerrada. (Submitted to the Journal of Agriculture of the University of Puerto Rico 2024). (Project H-094)                                                                                                                   | X                           |                                                     |           | Under Review        |
| Tirado, R.C and Roman-Paoli, E. Nutrient, carbon and nitrogen content in old of 'mexican' lime, 'fina' clementine mandarin, and 'campbell' valencia orange on selected rootstocks grown under fertigation practices in an Oxisol in Puerto Rico. (Pending to Horticulturae -HDPI-Open Access 2025). (Project H-094)                                                                                                    | X                           |                                                     |           | Under Review        |
| Gregory-Crespo, A., Tirado, R.C., Tavarez, H., Hernández-Correa, J., Rodríguez, A., and Martínez Cortés, A. Factors affecting Kumquat Nagami ( <i>Fortunella margarita</i> ) consumption in Puerto Rico. (Pending to JAUPR 2025).                                                                                                                                                                                      | X                           |                                                     |           | Under Review        |

| Reference (author, year, title, title of the journal or publisher, volume, number)                                                                                                                                                                                                                                                                                                                  | Publications                |                                                     | Status    |                     |
|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------|-----------------------------------------------------|-----------|---------------------|
|                                                                                                                                                                                                                                                                                                                                                                                                     | Peer-reviewed (ej. Journal) | Non peer-reviewed (ej. Newspaper, PRAES Newsletter) | Submitted | Approved/ Published |
| Vázquez, R. I., Linares-Ramírez, A.M., & Viteri, D.M. 2024. Comparison of the agronomic performance between a pigeonpea hybrid and five breeding lines developed through conventional breeding. HortScience 59: 133-1136. <a href="https://doi.org/10.21273/HORTSCI117908-24">https://doi.org/10.21273/HORTSCI117908-24</a> (Project H-094)                                                         | X                           |                                                     |           | X                   |
| Viteri, D.M., & Linares-Ramírez, A.M. 2024. Breeding for photoperiod insensitive and indeterminate flowering habit in pigeonpea. HortScience 59: S545. (Project H-094)                                                                                                                                                                                                                              | X                           |                                                     |           | X                   |
| Viteri, D. M., & Linares-Ramírez, A. M. 2024. Registration of indeterminate and photoperiod-insensitive IIPG-7 and IIPG-11 pigeonpea germplasm. Journal of Plant Registrations 18: 426-435. <a href="https://doi.org/10.1002/plr2.20375">https://doi.org/10.1002/plr2.20375</a> (Project H-094)                                                                                                     | X                           |                                                     |           | X                   |
| Viteri, D. M., Linares-Ramírez, A. M., & Shi, A. 2024. Genome wide association study reveals a QTL region for ashy stem blight resistance in PRA154 Andean common bean. Plant Disease 108: 407-415. <a href="https://doi.org/10.1094/PDIS-07-23-1275-RE">https://doi.org/10.1094/PDIS-07-23-1275-RE</a> (Project H-094)                                                                             | X                           |                                                     |           | X                   |
| Viteri, D. M., & Miranda, Z. 2024. Response of scarlet runner bean and common bean genotypes to ashy stem blight. Annual Report of the Bean Improvement Cooperative 67: 91-92. (Project H-094)                                                                                                                                                                                                      |                             | Annual Report                                       |           | X                   |
| Vázquez, R., Viteri, D. M., & Linares-Ramírez, A. M. 2024. Reaction of Phaseolus spp. genotypes to PRI21 Macrophomina phaseolina isolate inoculated at different plant growth stages. Annual Report of the Bean Improvement Cooperative 67: 89-90. (Project H-094)                                                                                                                                  |                             | Annual Report                                       |           | X                   |
| Vega-Martínez, A. & J. P. Morales-Payan. 2024. Comparative characterization of avocado accessions at the Agricultural Experiment Station in Lajas, Puerto Rico. Abstracts of the 42nd meeting of the Puerto Rico Interdisciplinary Meeting (PRISM), 42:56. University of Puerto Rico Aguadilla Campus. April 20, 2024. (Project H-094)                                                              |                             | Synopsis / Abstract                                 |           | X                   |
| Venegas Hidalgo, B. E. & J. P. Morales-Payan. 2024. Morphological fruit and tree attributes of breadfruit accessions from the germplasm collection of the Agricultural Experiment Station at Isabela, Puerto Rico. Abstracts of the 42nd meeting of the Puerto Rico Interdisciplinary Meeting (PRISM), 42:60. University of Puerto Rico Aguadilla Campus. April 20, 2024. (Project H-094)           |                             | Conference Papers and Presentation                  |           | X                   |
| Robles, W. 2024. Procesos para el registro de plaguicidas utilizados en la agricultura. Reunión Anual PRABIA. October 3, 2024. Ponce, PR. (Project H-372)                                                                                                                                                                                                                                           |                             | Conference Papers and Presentation                  |           | X                   |
| Robles, W. 2024. Avances para el registro de fungicidas para el control de enfermedades en café. Reunión Anual de Empresa de Café. November 15, 2024. Adjuntas, PR. (Project H-372)                                                                                                                                                                                                                 |                             | Conference Papers and Presentation                  |           | X                   |
| Alejandro Rodríguez Cintrón, Rebecca Tirado-Corbalá, Elvin Román Paoli y Miguel A. Muñoz Muñoz. Evaluation of three perennial cover crops as a soil conservation practice in a lemon cultivar (var. Lisbon) on an Oxisol in Puerto Rico. 2024 Annual Symposium of the Research Academy Filling the GAP from Lab to Market at the Business Administration, UPRM. May 3, 2024 (Project H-529)         |                             | Conference Papers and Presentation                  |           | X                   |
| Vargas, R. & M. Giraldo. 2024. Rotylenchulus reniformis emerges as the most dangerous plant-parasitic nematode in sweet potato plantations in Puerto Rico. April 15, 2024. APS-CD, Mérida, México. (Project H-528)                                                                                                                                                                                  |                             | Conference Papers and Presentation                  |           | X                   |
| Martínez-Rodríguez, G. A., Vázquez-Cartagena, M. A., Perdomo-García, C. R., Macchiavelli, R. E., Sotomayor-Ramírez, D., & Rosa, J. R. (2024). Water quality trends of streams in Puerto Rico: Evaluating 50 years of the Clean Water Act. Journal of Environmental Quality, 53, 253–264. <a href="https://doi.org/10.1002/jeq2.20550">https://doi.org/10.1002/jeq2.20550</a> . (Project H-475-A)    | X                           |                                                     |           | X                   |
| Bello, N.; W. Stroup, R. Macchiavelli, B. Craig, M. Ptukhinas, J. Couton (2024). What SAS and R software users need to know about GLMMs: an example-driven discussion. Technical Program, NCCC-170 Annual Meeting, Mayaguez, June 13-14, 2024. (Project H-475-A)                                                                                                                                    |                             | Conference Papers and Presentation                  |           | X                   |
| Macchiavelli, R. (2024) Aplicaciones de Modelos Aditivos Generalizados Mixtos en el Monitoreo para Calidad del Agua de Ríos y Arroyos en Puerto Rico. Invited Presentation in Encuentro Nacional de Matemáticas y Estadística, Universidad del Tolima, Ibagué (Colombia), Sep. 2024. (Project H-475-A)                                                                                              |                             | Conference Papers and Presentation                  |           | X                   |
| Perez Arocho, J. E. [Empresa de Hortalizas UPRM]. (2024, May 24). Uso de Enmiendas Orgánicas en la Calidad del Fruto de Tomate. <a href="https://www.uprm.edu/hortalizasygranosbasicos/wp-content/uploads/sites/330/2024/10/Folleto-Reunion-mayo-2024-1.pdf">https://www.uprm.edu/hortalizasygranosbasicos/wp-content/uploads/sites/330/2024/10/Folleto-Reunion-mayo-2024-1.pdf</a> (Project H-533) |                             | Electronic publication                              |           | X                   |
| Tirado-Colón, A. I., William D Feliciano-Figueroa, Héctor L Sánchez-Rodríguez, Veronica M Negrón-Pérez, Esbal Jiménez-Cabán, Progesterone and insulin concentrations during pregnancy in slick and wild type-haired Holstein cows, Journal of                                                                                                                                                       | X                           |                                                     |           | X                   |



| Reference (author, year, title, title of the journal or publisher, volume, number)                                                                                                                                                                                                                                               | Publications                |                                                     | Status    |                     |
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|                                                                                                                                                                                                                                                                                                                                  | Peer-reviewed (ej. Journal) | Non peer-reviewed (ej. Newspaper, PRAES Newsletter) | Submitted | Approved/ Published |
| Animal Science, Volume 102, Issue Supplement 1, March 2024, Pages 57–58, <a href="https://doi.org/10.1093/jas/skae019.068">https://doi.org/10.1093/jas/skae019.068</a> . (Project H-507)                                                                                                                                         |                             |                                                     |           |                     |
| Snyder, V.A, J. Dumas and P. Casanova. Absorbent method for measuring solute concentrations in the aqueous phase of unsaturated soils in the plant available water range. Poster presented at Caribbean Food Crops Society Annual Meetings, Punta Cana, Dominican Republic, July 14-19, 2024. (Project H-527)                    |                             | Conference Papers and Presentation                  |           | X                   |
| Snyder, V.A. and J. Dumas. Absorbent methodology for measuring solute concentrations in the soil solution for soil moisture contents ranging between field capacity and wilting point. Proceedings of the Caribbean Food Crops Society Annual Meetings, Punta Cana, Dominican Republic, July 14-19, 2024. (Project H-527)        |                             | Conference Papers and Presentation                  |           | X                   |
| Díaz, P, V. Snyder and O. Abelleira. 2024. Modification of Energy Efficient Water Vapor Technologies for Reforestation and Human Consumption in Arid regions and tropical Islands. Poster presentation. Proc. Annual Conference of the Caribbean Food Crops Society, July 2024, Punta Cana, Dominican Republic. (Project MS-023) |                             | Conference Papers and Presentation                  |           | X                   |
| Dumas, J., Workshop Organic amendments: A Mitigation strategy for soils and cash crops-presentation: Organic practices effect on the soil health by J. Dumas, December 14, 2024. (Project H-513)                                                                                                                                 |                             | Conference Papers and Presentation                  |           | X                   |
| Martínez Cortés. A. R. Tirado Corbalá, E. Román Paoli y M. Muñoz Muñoz. Evaluación de flujo de savia de aguacates tardíos bajo riego en un vertisol de Puerto Rico. Annual Meeting Puertorrican Society of Agricultural Sciences. December 13, 2024. Aguadilla, PR. (Project H-402)                                              |                             | Conference Papers and Presentation                  |           | X                   |
| Román Paoli, E., Sistemas de Riego en Cítricas. Forum: Present and Future of Orange Production and Marketing. December 10, 2024. Las Marías, PR. (Project H-402)                                                                                                                                                                 |                             | Conference Papers and Presentation                  |           | X                   |
| Román Paoli, E., Evaluación del Uso de Riego por Goteo en la Productividad de Café. Coffee Commodity Meeting. November 15, 2024. PROCAFE, Adjuntas, PR. (Project H-402)                                                                                                                                                          |                             | Conference Papers and Presentation                  |           | X                   |
| Román Paoli, E., M. Goyal. UPR's Current and Proposed Research. Microirrigation: A sustainable technology for crop intensification and improved water productivity (W-4128). July 29, 2024. W4128 annual Meeting, Anaheim, CA. (Project H-402)                                                                                   |                             | Conference Papers and Presentation                  |           | X                   |
| Ferrer Ramírez, P., E. Román-Paoli, 2024. Respuesta del limón cv. 'Meyer mejorado' a diferentes métodos de fertilización y utilización de cubiertas plásticas reflectoras. J. of Agric. of the Univ. of Puerto Rico. (Project H-402)                                                                                             | X                           |                                                     |           | Under Review        |
| Ferrer Ramírez, P., E. Román-Paoli, 2024. Respuesta del limón cv. 'Meyer mejorado' (Citrus limon (L.) Osbeck x Citrus reticulata Blanco) infectado con Huanglongbing a diferentes métodos de fertilización y plantas cobertoras. J. of Agric. of the Univ. of Puerto Rico. (Project H-402)                                       | X                           |                                                     |           | Under Review        |
| Román Paoli, E., R. Tirado Corbalá, J. P. Morales Payán 2024. Improving the production of MD-2 pineapple propagation material through fertilization. J. Agric., UPR. (Project H-402)                                                                                                                                             | X                           |                                                     |           | Under Review        |
| Román-Paoli, E. 2024. Irrigation section. Technological package for Citrus production. Agricultural Experiment Station - UPR. (Project H-402)                                                                                                                                                                                    | X                           |                                                     |           | Under Review        |
| Torres Ruiz, Jeremy A., Daniel A. Bair. 2024. Abstract: Quantification of Heavy Metals in Puerto Rican Soils. Soil Science Society of America, Bouyoucos Summer Conference. San Juan, PR. (Project H-524)                                                                                                                        |                             | Conference Papers and Presentation                  |           | X                   |
| Bair, Daniel A., Inna E. Popova, Miguel A. Muñoz, Julia M. O'Hallorans, and Ermita Hernandez. 2024. Abstract: Unlocking the Potential of Biochar: A Vital and Accessible Solution for Soil Rehabilitation. North American Biochar Conference, Sacramento, CA. (Project H-524)                                                    |                             | Conference Papers and Presentation                  |           | X                   |
| [Empresa de Hortalizas UPRM]. Hernández, E. (2024, November 21). Marchitez Súbita de la Sandía "Watermelon Vine Decline": Variedades, Manejo y Divulgación [Video]. YouTube. <a href="https://youtu.be/2kdnkHLqkCE?si=0rP8_rDuTISwD4KK">https://youtu.be/2kdnkHLqkCE?si=0rP8_rDuTISwD4KK</a> (Project H-516)                     |                             | Electronic publication                              |           | x                   |
| [Empresa de Hortalizas UPRM]. Hernández, E., Estévez De Jensen, C., Cabrera, I., & Macchiavelli, S. (2025, February 10). Buenas Prácticas para el Manejo de la Marchitez Súbita de la Sandía [Video]. YouTube. <a href="https://youtu.be/MH6WVhaUvXk">https://youtu.be/MH6WVhaUvXk</a> (Project H-516)                           |                             | Electronic publication                              |           | X                   |

| Reference (author, year, title, title of the journal or publisher, volume, number)                                                                                                                                                                                                                                                                                                                                                                                           | Publications                |                                                     | Status    |                     |
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|                                                                                                                                                                                                                                                                                                                                                                                                                                                                              | Peer-reviewed (ej. Journal) | Non peer-reviewed (ej. Newspaper, PRAES Newsletter) | Submitted | Approved/ Published |
| Hernández E., Macchiavelli S., Cabrera I. y Estévez de Jensen. 2024. Estrategias para el manejo de la marchitez súbita de la sandía. Servicio de Extensión Agrícola, Universidad de Puerto Rico. <a href="https://www.uprm.edu/sea/estrategias-para-el-manejo-de-la-marchitez-subita-de-la-sandia/">https://www.uprm.edu/sea/estrategias-para-el-manejo-de-la-marchitez-subita-de-la-sandia/</a> (Project H-516)                                                             |                             | Electronic publication                              |           | X                   |
| Hernández E. & Estévez De Jensen. 2024. Evaluación de Variedades de Sandía; Estrategia para el Manejo de la Marchitez Súbita de la Sandía. Sociedad Puertorriqueña de Ciencias Agrícolas (SOPCA) [Poster]. Memorias 47 Reunión Científica y Asamblea Anual. pp 25. (Project H-516)                                                                                                                                                                                           |                             | Conference Papers and Presentation                  |           | X                   |
| Alejandro Rodríguez Cintrón, Rebecca Tirado-Corbalá, Merari Feliciano-Rivera, Zulmarie Semidei-Vega, Rosa Franqui. Use of companion crops in organic tropical pumpkin production in an Oxisol in Puerto Rico. SSSA 2024 Bouyucos Summer Conference.                                                                                                                                                                                                                          |                             | Conference Papers and Presentation                  |           | X                   |
| Alejandro Rodríguez Cintrón, Rebecca Tirado-Corbalá, Merari Feliciano-Rivera, Zulmarie Semidei-Vega, Rosa Franqui. Use of companion crops in organic tropical pumpkin production in an Oxisol in Puerto Rico. SSSA 2024 Bouyucos Summer Conference. Common Ground: Soils Beyond Borders. June 10-12, 2024. (Project H-508)                                                                                                                                                   |                             | Conference Papers and Presentation                  |           | X                   |
| Martínez-Rodríguez, G. A., Vázquez-Cartagena, M. A., Perdomo-García, C. R., Macchiavelli, R. E., Sotomayor-Ramírez, D., & Rosa, J. R. (2024). Water quality trends of streams in Puerto Rico: Evaluating 50 years of the Clean Water Act. Journal of Environmental Quality, 53, 253–264. <a href="https://doi.org/10.1002/jeq2.20550">https://doi.org/10.1002/jeq2.20550</a>                                                                                                 | X                           |                                                     |           | x                   |
| Conor G. Fair, Julia Piaskowski, Raúl Macchiavelli, Josefina Lacasa, Bruce A. Craig, and Walter W. Stroup (2025) Best practices for GLMMs with zero-inflation – unique challenges for repeated-measures data and fitting covariates in binary process. Abstracts, Research Advances in Statistical Methods in Agriculture – Annual Meeting Project NCCC170. Moscow (Idaho), June 4-5, 2025.                                                                                  |                             | x                                                   |           | x                   |
| Nora M. Bello, Walter W. Stroup, Julia Piaskowski, Josefina Lacasa, Reka Howard, Daniel G. Palmer, Quentin D. Read, Susan L. Durham, Conor G. Fair, Clark Kogan, Raúl E. Macchiavelli, and Bruce A. Craig (2025). GLMM working group updates and plans to move forward. Research Advances in Statistical Methods in Agriculture – Annual Meeting Project NCCC170. Moscow (Idaho), June 4-5, 2025.                                                                            |                             | x                                                   |           | x                   |
| Macchiavelli, R. , N. Bello, W. Stroup (2025). Analysis of Repeated Measures Revisited: Are Recommended Best Practices Applied Consistently Across and Within Software Platforms? Abstracts, Conference on Applied Statistics and Natural Resources (Gainesville, FL, May 2025)                                                                                                                                                                                              |                             | X                                                   |           | X                   |
| Alejandro Rodríguez Cintrón, Rebecca Tirado Corbalá, Merari Feliciano and Rosa A. Franqui. 2024. Evaluación de nutrientes en suelo y tejido en calabaza y cultivos acompañantes en un sistema orgánico en Puerto Rico, page 62. Presented at the 47th Annual Scientific Meeting of the Puerto Rican Society of Agricultural Sciences (SOPCA) 2024, December 13, 2024, Hotel Punta Borinquen, Aguadilla, Puerto Rico. (Graduate student Poster presentation). (Project H-508) |                             | Conference Papers and Presentation                  |           | X                   |
| Giraldo Zapata, M. C., et al. (2024). El ñame: Manejo Integrado en un cultivo de subsistencia. Guía de bolsillo de Ñame.                                                                                                                                                                                                                                                                                                                                                     |                             | X                                                   |           | X                   |
| Giraldo Zapata, M. C., et al. (2024). La yautía: Manejo Integrado en un cultivo ancestral. Guía de bolsillo de Yautía                                                                                                                                                                                                                                                                                                                                                        |                             | X                                                   |           | X                   |
| Feliciano Rivera, Giraldo, M. C., Almodovar, W. & Cortés, M. (2024). Medidas para el manejo de la roya del ñame en Puerto Rico.                                                                                                                                                                                                                                                                                                                                              |                             | X                                                   |           | X                   |
| Mike Vázquez-Torres , Nilka Rivera-Portatlatín and Irma Cabrera-Asencio. 2025 Phytochemical Profiling, Bioactivity, and Insecticidal Effectiveness of Mammea americana L. Leaf Extracts Against Ferrisia sp. Plants: 14, 21                                                                                                                                                                                                                                                  | X                           |                                                     |           | X                   |
| Naomi M. Maldonado-Pinto, Irma Cabrera-Asencio y Eric W. Harmsen. 2025. Batocera rufomaculata (De Geer, 1775) (Coleoptera: Cerambycidae): Incidencia, severidad y preferencia en cultivos de Mangifera indica. J. Agric. Univ. P.R. 109(1):155-184                                                                                                                                                                                                                           | X                           |                                                     |           | X                   |
| Worsdell, Félix, Maughan, Hill-Butler, & Wright (2024). Has Agroecology Lost the Plot? The Fracture Between Science, Movement, and Practice, in the Insular Caribbean. Journal of Agrarian Change                                                                                                                                                                                                                                                                            | X                           |                                                     | X         |                     |
| Reyes Maldonado & Félix (2025). Sentipensar with Agroecological Pedagogies from Puerto Rico: Disentangling our Food Landscape from Dualist Ontologies. Agroecology and Sustainable Food Systems                                                                                                                                                                                                                                                                              |                             |                                                     | X         |                     |
| Martínez, E. 2025. Primer reporte de Thrips parvispinus (Thysanoptera:Thripidae) en siembras de pimiento en Puerto Rico                                                                                                                                                                                                                                                                                                                                                      | X                           |                                                     | X         |                     |



| Reference (author, year, title, title of the journal or publisher, volume, number)                                                                                                                                                                                                                                                                                                                  | Publications                |                                                     | Status    |                          |
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|                                                                                                                                                                                                                                                                                                                                                                                                     | Peer-reviewed (ej. Journal) | Non peer-reviewed (ej. Newspaper, PRAES Newsletter) | Submitted | Approved/ Published      |
| Hernandez, E., Beaver, J., Estévez DeJensen, C., Rodríguez, G., Martínez, E., Vargas, R., Arrocho, J., Harmsen, E., & Bair, D. (2024). Manual de la Producción de Maíz (2024th ed., Vol. 1). MEI                                                                                                                                                                                                    |                             | X                                                   |           | X                        |
| M. Morejón, D. Sotomayor, M.L. Flores-Mangual, Y. Sánchez-de León. Formation of aggregates and carbon storage mediated by earthworms in a tropical soil (Ultisol). J. Agric. Univ. P.R. 108(2):159-183 (2024)                                                                                                                                                                                       | X                           |                                                     |           | X                        |
| Rosado I., C. Estévez de Jensen, S. Cosme and Timothy Porch. 2025. Common Bacterial blight Inoculation Response in the Tepary (Phaseolus acutifolius A. Gray) Diversity Panel. Bean Improvement Cooperative Annual Report                                                                                                                                                                           |                             | X                                                   | X         |                          |
| Alejandra Varela-Alpi, María Plaza, Abner Rodríguez-Carías y Leyda Ponce de León. Caracterización nutricional y química de la leche de cabra producida en diferentes regiones agrícolas de Puerto Rico. J. Agric. Univ. P.R. 109(1): (2025)                                                                                                                                                         | X                           |                                                     |           | X                        |
| M.L. Plaza, M.M. Ramírez-Rodríguez, Giovanna Ferrentino, M.O. Balaban and M.R. Marshall. 2025. Influence of Dense Phase Carbon Dioxide and Pasteurization Treatments on Storage Quality of Guava Puree. Innovative Food Science and Emerging Technologies 101 (2025) 103944.                                                                                                                        | X                           |                                                     |           | X                        |
| M.L. Plaza, M.M. Ramírez-Rodríguez, M.O. Balaban and M.R. Marshall. 2025Effect of Enzyme Treatment on Physicochemical and Phytochemical Properties of Guava Puree. Food Science & Nutrition                                                                                                                                                                                                         | X                           |                                                     | X         |                          |
| <b>Department of Animal Science</b>                                                                                                                                                                                                                                                                                                                                                                 |                             |                                                     |           |                          |
| Luquis, Krystal, E. Jimenez, L. Santiago, W. Feliciano y V.M. Negrón Perez. "Desarrollo de estructuras en el ovario de vacas Holstein-Friesian pelonas y no pelonas en el trópico". Poster presented at the 47th SOPCA Annual Scientific Meeting on December 13, 2024. (Project H-509)                                                                                                              |                             | Conference Papers and Presentation                  |           | X                        |
| López, J., G. Muñoz, A. Lugo, A., S. Padro, K. Domenech, A. Casas, and H. Sánchez. 2024. Ciclos diarios de temperatura vaginal en vacas Senepol y Senepol x Angus Rojo con 1 o 2 copias del gen SLICK1. Abstract and oral presentation offered at the 47th SOPCA Annual Scientific Meeting on December 13, 2024. (Project H-543)                                                                    |                             | Conference Papers and Presentation                  |           | X                        |
| Lugo, A., J. López, S. Padro, K. Domenech, A. Casas, G. Muñoz, and H. Sánchez. 2024. Comparación de los patrones diarios de temperatura vaginal entre novillas puras Senepol y novillas cruzadas Senepol x Angus Rojo durante la época fresca en Puerto Rico. Abstract presented at the 47th SOPCA Annual Scientific Meeting on December 13, 2024. (Project H-543)                                  |                             | Synopsis / Abstract                                 |           | X                        |
| Ormaza-Rivera, Karla, John Fernández Van Cleve, Abner Rodríguez Carías, y Esbal Jiménez Cabán. 2024. Mejoramiento genético de la primera generación de corderos criollos x carneros portadores del gen Fec- B (Booroola). SOPCA 2024. (Project H-510)                                                                                                                                               |                             | Synopsis / Abstract                                 |           | X                        |
| Cordero-Arbelo, Génesis, Karla Ormaza-Rivera, Abner A. Rodríguez-Carías, Esbal Jiménez-Cabán, y John Fernández Van Cleve. 2024. Introgresión del gen de fecundidad Fec-B (Booroola) para el mejoramiento de la productividad de ovinos criollos en Puerto Rico. J. Agric. Univ. P.R. 108:205-208. (Project H-510)                                                                                   | X                           |                                                     |           | X                        |
| Llanos Dangely. 2024. Días en alimentación con raciones totales para alcanzar el peso al sacrificio de corderos enteros y castrados genéticamente mejorados y su efecto sobre el rendimiento productivo, parámetros fisiológicos, rendimiento de la canal y cortes y calidad de la carne. Thesis. UPRM (Project H-532)                                                                              |                             | Thesis Dissertation                                 |           |                          |
| Llanos-Rodríguez, D., C Almeyda-Domenech, K. Domenech, John Fernandez Van Cleve and Abner Rodríguez-Carías. 2024. Performance, carcass, wholesale, and retail cuts yield of genetically improved entire or castrated crossbred lambs fed total rations under heat stress conditions. Annual Meeting. American Society of Animal Science meeting (ASAS). Calgary, Canada. July 2024. (Project H-532) |                             | Synopsis / Abstract                                 |           |                          |
| Varela-Alpi A., M. Plaza, A. Rodríguez and L. Ponce de Leon. Chemical characterization of goat milk produced in different agricultural regions of Puerto Rico, 2025, Journal of Agriculture of the University of Puerto Rico. (Project H-501)                                                                                                                                                       | X                           |                                                     |           | Accepted for publication |
| Contreras-Correa, Z. E., Sánchez-Rodríguez, H. L., Arick II, M. A., Muñoz-Colón, G., & Lemley, C. O. 2024. Thermotolerance capabilities, blood metabolomics, and mammary gland hemodynamics and transcriptomic profiles of slick-haired Holstein cattle during mid lactation in Puerto Rico. Journal of Dairy Science, 107(6), 4017-4032                                                            | X                           |                                                     |           | X                        |
| <b>Department of Agricultural and Biosystems Engineering</b>                                                                                                                                                                                                                                                                                                                                        |                             |                                                     |           |                          |
| Tavárez, H. (2024, July). Conciencia ambiental y disposición a pagar por mejorar la biodiversidad en Puerto Rico. Oral presentation presented at the Caribbean Food Crops Society, Dominican Republic. (Project MS-025)                                                                                                                                                                             |                             | Conference Papers and Presentation                  |           | X                        |

| Reference (author, year, title, title of the journal or publisher, volume, number)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               | Publications                |                                                     | Status    |                     |
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|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  | Peer-reviewed (ej. Journal) | Non peer-reviewed (ej. Newspaper, PRAES Newsletter) | Submitted | Approved/ Published |
| Totti, M. C. V.; Zinn, Y. L.; Silva, S. H. G.; Silva, B. M.; Bócoli, F. A.; Faria, V. L. de; Montes, A. O.; Acuña-Guzman, S. F.; Uezu, A.; Cullen Junior, L.; Fernandes, V. F.; Avanzi, J. C. 2025. Organic carbon stocks across various land use systems in sandy Ultisols and Oxisols in Brazil. <i>Geoderma Regional</i> , 40. DOI: 10.1016/j.geodrs.2025.e00924                                                                                                                                                                                                                                                                              | X                           |                                                     |           | X                   |
| Cardoso, D. P.; dos Santos, W. P.; Silva, S. H. G.; Merlo, M. N.; Acuña-Guzman, S. F.; Acerbi Júnior, F. W.; Viola, M. R.; Silva, M. L. N.; Curi, N.; Avanzi, J. C. 2024. Estimation and assessment of water erosion in the Peixe Angical Basin, Brazil. <i>Journal of South American Earth Sciences</i> , 149. DOI: 10.1016/j.jsames.2024.105235.                                                                                                                                                                                                                                                                                               | X                           |                                                     |           | X                   |
| Santos, W. P.; Acuña-Guzman, S. F.; Oliveira, P. T. S.; Beniaich, A.; Cardoso, D. P.; Silva, M. L. N.; Curi, N.; Avanzi, J. C. 2024. CA-Markov prediction modeling for the assessment of land use/land cover change in two sub-basins of the Tocantins-Araguaia River Basin. <i>Environmental Monitoring and Assessment</i> , 196:499. DOI: 10.1007/s10661-024-12673-4                                                                                                                                                                                                                                                                           | X                           |                                                     |           | X                   |
| Monroig-Saltar, F. M.; Román-Aponte, E. A.; Flores-Ortega, C. A.; Monroig-Inglés, M. F. 2025. Evaluation of semi-mechanized and assisted coffee harvesting methods in Puerto Rico. ASABE Annual International Meeting, Paper No. 2500112, 1–8. DOI: 10.13031/aim.2500112                                                                                                                                                                                                                                                                                                                                                                         |                             | X                                                   | X         |                     |
| <b>Department of Agricultural Economics and Rural Sociology</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |                             |                                                     |           |                     |
| Tavarez, H. (2024, May). Economic Viability of Developing Passive Recreational Opportunities in Puerto Rico: Insights for Sustainable Forest Management. Poster presentation presented at the 4th Congress of Applied Economics of Puerto Rico held at Mayagüez, Puerto Rico. (Project MS-025)                                                                                                                                                                                                                                                                                                                                                   |                             | Conference Papers and Presentation                  |           | X                   |
| Carro-Figueroa, V., 2024. "La sostenibilidad agrícola en el contexto social y humano: eliminando barreras a la sostenibilidad social de la agricultura". Oral presentation at the Forum on Sustainable Management of Agricultural Systems, October 10, UPR- Mayagüez, Puerto Rico. (Project H-526)                                                                                                                                                                                                                                                                                                                                               |                             | Conference Papers and Presentation                  |           | X                   |
| Tavárez, H., & Cortés, M. (2024). Device effects: Results from choice experiments in an agritourism context. <i>Economía Agraria y Recursos Naturales</i> , 24(1), 5-27. <a href="https://doi.org/10.7201/earn.2024.01.01">https://doi.org/10.7201/earn.2024.01.01</a>                                                                                                                                                                                                                                                                                                                                                                           | X                           |                                                     |           | X                   |
| Colón-Ramos, U., Guerra Uccelli, N., Meléndez-Colón, O., García Blanco, A.M., Ostolaza Santiago, C., Rosas Pérez, C, Gomez Andújar, N., Tavárez, N., Poirier, L., Gittelsohn, J., Long, M.W. Structures and Systems that Promote Nutrition Security and Climate Adaptation in Puerto Rico: Results from Community-Based System Dynamics. <i>Public Health Nutrition</i>                                                                                                                                                                                                                                                                          | X                           |                                                     | X         |                     |
| Tavárez, H., Cortés, M., & Hernández, J. (2024). Consumer attitudes and behavior towards differentiated coffees in Puerto Rico: An assessment of text, labels and quick response (QR) codes. <i>Caribbean Food Crops Society</i> .                                                                                                                                                                                                                                                                                                                                                                                                               |                             | Proceeding                                          |           |                     |
| Tavárez, H., & Fuentes, R. (2025). Proyecto Esencia y su impacto socioeconómico en el suroeste de Puerto Rico. Metro. Retrieved from <a href="https://www.metro.pr/opinion/2025/03/22/proyecto-esencia-y-su-impacto-socioeconomico-en-el-suroeste-de-puerto-rico/?fbclid=IwY2xjawJOW8dleHRuA2FibQlXMQABHTjl411tpSgLmx9sBBt4hMtxckk1MTKY1d8xQoIl-02KpjrUOSAP5A1SJg_aem_XGypa420ML2-t8vtk3Enyg">https://www.metro.pr/opinion/2025/03/22/proyecto-esencia-y-su-impacto-socioeconomico-en-el-suroeste-de-puerto-rico/?fbclid=IwY2xjawJOW8dleHRuA2FibQlXMQABHTjl411tpSgLmx9sBBt4hMtxckk1MTKY1d8xQoIl-02KpjrUOSAP5A1SJg_aem_XGypa420ML2-t8vtk3Enyg</a> |                             | newspaper                                           |           | X                   |
| Tavárez, H., & Hernández, J. (2025). El impacto de los aranceles federales agrícolas en Puerto Rico. El Nuevo Día. Retrieved from <a href="https://www.elnuevodia.com/opinion/punto-de-vista/el-impacto-de-los-aranceles-federales-en-la-agricultura/">https://www.elnuevodia.com/opinion/punto-de-vista/el-impacto-de-los-aranceles-federales-en-la-agricultura/</a>                                                                                                                                                                                                                                                                            |                             | newspaper                                           |           | X                   |
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| Tavárez, H. (2024). Vías para promover el crecimiento y desarrollo económico, Sin Comillas. Retrieved from <a href="https://sincomillas.com/vias-para-promover-el-crecimiento-y-desarrollo-economico/">https://sincomillas.com/vias-para-promover-el-crecimiento-y-desarrollo-economico/</a>                                                                                                                                                                                                                                                                                                                                                     |                             | newspaper                                           |           | X                   |
| Tavárez, H. (2024). ¿Cómo los eventos atmosféricos trastocan la agricultura en Puerto Rico? Metro. Retrieved from <a href="https://www.metro.pr/opinion/2024/09/29/como-los-eventos-atmosfericos-trastocan-la-agricultura-en-puerto-rico/">https://www.metro.pr/opinion/2024/09/29/como-los-eventos-atmosfericos-trastocan-la-agricultura-en-puerto-rico/</a>                                                                                                                                                                                                                                                                                    |                             | newspaper                                           |           | X                   |
| Tavárez, H. (2024). Sostenible vs. sustentable: Discutiendo algunos aspectos económicos. Acerola Strategies. Retrieved from <a href="https://www.acerolastrategies.com/blog/gle7203uxto9gfs240yj3fppq3bl6">https://www.acerolastrategies.com/blog/gle7203uxto9gfs240yj3fppq3bl6</a>                                                                                                                                                                                                                                                                                                                                                              |                             | newspaper                                           |           | X                   |
| Tavárez, H. (2024). Los eventos atmosféricos y el desarrollo económico de Puerto Rico. El Nuevo Día. Retrieved from <a href="https://www.elnuevodia.com/opinion/punto-de-vista/los-eventos-atmosfericos-y-el-desarrollo-economico-de-puerto-rico/?fbclid=IwY2xjawE1Z7ZleHRuA2FibQlXMQABHRIQHbVkbLRIXGt6GRwtUCw4JcsbwrT6Tstd6b6B3ZGoKa3c_U-t47AGaw_aem_6KLKq5-AxTNZD5Q0BQZv2A">https://www.elnuevodia.com/opinion/punto-de-vista/los-eventos-atmosfericos-y-el-desarrollo-economico-de-puerto-rico/?fbclid=IwY2xjawE1Z7ZleHRuA2FibQlXMQABHRIQHbVkbLRIXGt6GRwtUCw4JcsbwrT6Tstd6b6B3ZGoKa3c_U-t47AGaw_aem_6KLKq5-AxTNZD5Q0BQZv2A</a>                |                             | newspaper                                           |           | X                   |

| Reference (author, year, title, title of the journal or publisher, volume, number)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               | Publications                |                                                     | Status    |                     |
|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------|-----------------------------------------------------|-----------|---------------------|
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  | Peer-reviewed (ej. Journal) | Non peer-reviewed (ej. Newspaper, PRAES Newsletter) | Submitted | Approved/ Published |
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| Tavárez, H., & Cortés, M. (2024). Device effects: Results from choice experiments in an agritourism context. <i>Economía Agraria y Recursos Naturales</i> , 24(1), 5-27. <a href="https://doi.org/10.7201/earn.2024.01.01">https://doi.org/10.7201/earn.2024.01.01</a>                                                                                                                                                                                                                                                                                                                                                                           | Journal                     |                                                     |           | X                   |
| Colón-Ramos, U., Guerra Uccelli, N., Meléndez-Colón, O., García Blanco, A.M., Ostolaza Santiago, C., Rosas Pérez, C, Gomez Andújar, N., Tavárez, N., Poirier, L., Gittelsohn, J., Long, M.W. Structures and Systems that Promote Nutrition Security and Climate Adaptation in Puerto Rico: Results from Community-Based System Dynamics. <i>Public Health Nutrition</i>                                                                                                                                                                                                                                                                          | Journal                     |                                                     | X         |                     |
| Tavárez, H., Cortés, M., & Hernández, J. (2024). Consumer attitudes and behavior towards differentiated coffees in Puerto Rico: An assessment of text, labels and quick response (QR) codes. <i>Caribbean Food Crops Society</i> .                                                                                                                                                                                                                                                                                                                                                                                                               |                             | Proceeding                                          |           |                     |
| Tavárez, H., & Fuentes, R. (2025). Proyecto Esencia y su impacto socioeconómico en el suroeste de Puerto Rico. Metro. Retrieved from <a href="https://www.metro.pr/opinion/2025/03/22/proyecto-esencia-y-su-impacto-socioeconomico-en-el-suroeste-de-puerto-rico/?fbclid=IwY2xjawJOW8dleHRuA2FlbQlXMQABHTJl411tpSgLmx9sBBt4hMtxckk1MTKY1d8xQoIl-02KpjrUOSAP5A1SJg_aem_XGypa420ML2-t8vtk3Enyg">https://www.metro.pr/opinion/2025/03/22/proyecto-esencia-y-su-impacto-socioeconomico-en-el-suroeste-de-puerto-rico/?fbclid=IwY2xjawJOW8dleHRuA2FlbQlXMQABHTJl411tpSgLmx9sBBt4hMtxckk1MTKY1d8xQoIl-02KpjrUOSAP5A1SJg_aem_XGypa420ML2-t8vtk3Enyg</a> |                             | Newspaper                                           |           |                     |
| Tavárez, H., & Hernández, J. (2025). El impacto de los aranceles federales agrícolas en Puerto Rico. <i>El Nuevo Día</i> . Retrieved from <a href="https://www.elnuevodia.com/opinion/punto-de-vista/el-impacto-de-los-aranceles-federales-en-la-agricultura/">https://www.elnuevodia.com/opinion/punto-de-vista/el-impacto-de-los-aranceles-federales-en-la-agricultura/</a>                                                                                                                                                                                                                                                                    |                             | Newspaper                                           |           |                     |
| Tavárez, H. (2025). El impacto económico del cambio climático en Puerto Rico. Metro. Retrieved from <a href="https://www.metro.pr/opinion/2025/02/09/el-impacto-economico-del-cambio-climatico-en-puerto-rico/">https://www.metro.pr/opinion/2025/02/09/el-impacto-economico-del-cambio-climatico-en-puerto-rico/</a>                                                                                                                                                                                                                                                                                                                            |                             | Newspaper                                           |           | X                   |
| Tavárez, H. (2025). Cambios en UPR: en riesgo la agricultura sostenible. <i>El Nuevo Día</i> . Retrieved from <a href="https://www.elnuevodia.com/opinion/punto-de-vista/cambios-en-upr-en-riesgo-la-agricultura-sostenible/">https://www.elnuevodia.com/opinion/punto-de-vista/cambios-en-upr-en-riesgo-la-agricultura-sostenible/</a>                                                                                                                                                                                                                                                                                                          |                             | Newspaper                                           |           | X                   |
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| Tavárez, H. (2024). ¿Cómo los eventos atmosféricos trastocan la agricultura en Puerto Rico? Metro. Retrieved from <a href="https://www.metro.pr/opinion/2024/09/29/como-los-eventos-atmosfericos-trastocan-la-agricultura-en-puerto-rico/">https://www.metro.pr/opinion/2024/09/29/como-los-eventos-atmosfericos-trastocan-la-agricultura-en-puerto-rico/</a>                                                                                                                                                                                                                                                                                    |                             | Newspaper                                           |           | X                   |
| Tavárez, H. (2024). Sostenible vs. sustentable: Discutiendo algunos aspectos económicos. <i>Acerola Strategies</i> . Retrieved from <a href="https://www.acerolastrategies.com/blog/igle7203uxto9gfs240yj3fppq3bl6">https://www.acerolastrategies.com/blog/igle7203uxto9gfs240yj3fppq3bl6</a>                                                                                                                                                                                                                                                                                                                                                    |                             | Newspaper                                           |           | X                   |
| Tavárez, H. (2024). Los eventos atmosféricos y el desarrollo económico de Puerto Rico. <i>El Nuevo Día</i> . Retrieved from <a href="https://www.elnuevodia.com/opinion/punto-de-vista/los-eventos-atmosfericos-y-el-desarrollo-economico-de-puerto-rico/?fbclid=IwY2xjawE1Z7ZleHRuA2FlbQlXMQABHRIQhBvkbLRlXGt6GRwtUCw4JcsbwrT6Tstd6b6B3ZGoKa3c_U-t47AGaw_aem_6KLKq5-AxTNZD5Q0BQZv2A">https://www.elnuevodia.com/opinion/punto-de-vista/los-eventos-atmosfericos-y-el-desarrollo-economico-de-puerto-rico/?fbclid=IwY2xjawE1Z7ZleHRuA2FlbQlXMQABHRIQhBvkbLRlXGt6GRwtUCw4JcsbwrT6Tstd6b6B3ZGoKa3c_U-t47AGaw_aem_6KLKq5-AxTNZD5Q0BQZv2A</a>        |                             | Newspaper                                           |           | X                   |
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| Abner A Rodriguez, Alicia Barriga, Hector Cuestas, John Fernandez, PSVII-27 FAO-Honduras: Training producers and technicians in sheep management practices to enhance extension capabilities and strengthen food security concepts among college students, <i>Journal of Animal Science</i> , Volume 102, Issue Supplement_3, September 2024, Pages 820–821, <a href="https://doi.org/10.1093/jas/skae234.920">https://doi.org/10.1093/jas/skae234.920</a>                                                                                                                                                                                       | x                           |                                                     |           | x                   |
| Gutierrez, F. V., Buschbacher, R. J., Ramos, M., Pereira, P., Lima, F., Silva, F., Stepp, J. R., Kainer, K. A., dos Santos Pereira, H., Tucker, C. M., & Perz, S. G. (2025). Amazonian-nut community-based entrepreneurship, traditional ecological knowledge & biocultural conservation in the eastern Amazon, Brazil. Manuscript submitted for publication, <i>Journal of Ethnobiology</i> .                                                                                                                                                                                                                                                   | x                           |                                                     | x         |                     |
| Avilés-Ortiz, Y. A., González-Martínez, G. M., Mas, E., & Gregory-Crespo, A. (2025). Factores asociados con la implementación de prácticas de conservación en Puerto Rico. <i>Journal of Agriculture of the University of Puerto Rico</i> , 109(1), 119–134.                                                                                                                                                                                                                                                                                                                                                                                     | x                           |                                                     |           | x                   |
| Gregory, A., G. M. González y A. Cano. 2025. El Sector de la Agricultura. En Informe Económico al Gobernador, Gobierno de Puerto Rico, Junta de Planificación de Puerto Rico.                                                                                                                                                                                                                                                                                                                                                                                                                                                                    | x                           |                                                     | x         |                     |
| Comas, M. A. Gregory, and G. M. González. 2025. Developing the Agribusiness Plan. In Spanish. Department of Agricultural Economics and Rural Sociology, University of Puerto Rico at Mayagüez. <a href="https://www.uprm.edu/agricultores-desventajados/wp-content/uploads/sites/413/2025/03/Plan-de-Negocio-para-Agroempresas-marzo-31-2025-1.pdf">https://www.uprm.edu/agricultores-desventajados/wp-content/uploads/sites/413/2025/03/Plan-de-Negocio-para-Agroempresas-marzo-31-2025-1.pdf</a>                                                                                                                                               |                             | x                                                   | x         |                     |

| Reference (author, year, title, title of the journal or publisher, volume, number)                                                                                                                                                                                                                                                                              | Publications                |                                                     | Status    |                          |
|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------|-----------------------------------------------------|-----------|--------------------------|
|                                                                                                                                                                                                                                                                                                                                                                 | Peer-reviewed (ej. Journal) | Non peer-reviewed (ej. Newspaper, PRAES Newsletter) | Submitted | Approved/ Published      |
| <b>Department of Agricultural Education</b>                                                                                                                                                                                                                                                                                                                     |                             |                                                     |           |                          |
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| Ruiz Lugo, A. (Editor). 2024. SEA Journal of the Agricultural Extension Service. Vol. 3. Agricultural Extension Service                                                                                                                                                                                                                                         |                             | Magazine                                            |           | X                        |
| Ruiz Lugo, A. (Editor). 2024. SEA Journal of the Agricultural Extension Service. Vol. 2. Agricultural Extension Service                                                                                                                                                                                                                                         |                             | Magazine                                            |           | X                        |
| Del Rosario J. 2024. SEA Magazine. Talent inventories (dance) as an alternative for creating innovative educational strategies for our children and youth.                                                                                                                                                                                                      |                             | X                                                   | X         | x                        |
| Del Rosario J. 2025. Educational Manual: "The sale of rebel cod"                                                                                                                                                                                                                                                                                                |                             | X                                                   | X         |                          |
| Del Rosario J. 2025. Theatrical Script: "La pandilla de mosquitos"                                                                                                                                                                                                                                                                                              |                             | X                                                   | X         |                          |
| Negrón, Gloriselle. (2024). Know your ambient air quality conditions                                                                                                                                                                                                                                                                                            |                             | "Impresiones" (local newspaper)                     |           | X                        |
| Saavedra-Lugo, J., & Hernandez-Aquino, B. (2025). Determination of the Profile of the Agricultural Education Teachers of Puerto Rico Aimed at Identifying Needs to Establish a Professional Development Plan. Journal of Agricultural Education, 66(1), Article 25. <a href="https://doi.org/10.5032/jae.v66i1.2896">https://doi.org/10.5032/jae.v66i1.2896</a> | x                           |                                                     | x         |                          |
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| <b>Other publications</b>                                                                                                                                                                                                                                                                                                                                       |                             |                                                     |           |                          |
| Ronda Plaza, P. C. 2024. PSEUDOCERCOSPORA FIJIENSIS IN BANANA CULTIVARS: ASSESMENT OF RESISTANCE ELICITORS AND APPLICATION OF EARLY DETECTION TECHNIQUES AS A MANAGEMENT ALTERNATIVE. (MS dissertation). University of Puerto Rico, Mayagüez Campus. (Project H-486)                                                                                            |                             | Thesis Dissertation                                 |           | Under review             |
| Lopez, L.E., (2024). Evaluation of critical mutational points in Lactate Dehydrogenase in Senepol and Holstein cattle differing in Prolactin Receptor Genotypes associated with slick hair. [master's thesis]. University of Puerto Rico at Mayagüez. (Project H-488)                                                                                           |                             | Thesis Dissertation                                 |           | Accepted for publication |
| Torres, E. 2025. Short-term preservation of pigeonpea [Cajanus cajan (L.) Mill.] genotypes, Master Thesis. University of Puerto Rico (in preparation). (Project Z-376)                                                                                                                                                                                          |                             | Thesis Dissertation                                 |           | Under review             |
| Andrea I. Muñoz, Y. 2024. Evaluación de métodos de propagación de Dioscorea spp. para aumentar la disponibilidad de semilla libre de enfermedades (Master dissertation). UPRM (Project H-522)                                                                                                                                                                   |                             | Thesis Dissertation                                 |           | Under review             |
| Josué Soto Morales. 2024. Desarrollo de protocolo de multiplicación in vitro de Dioscorea rotundata cv Guinea Negro utilizando biorreactores de inmersión temporal (Master dissertation). UPRM (Project H-522)                                                                                                                                                  |                             | Thesis Dissertation                                 |           | Under review             |
| Ormaza-Rivera, Karla. 2025. Crecimiento, desarrollo y mejoramiento de la primera generación de corderos criollos × Dorset portadores del gen Fec-B (Booroola) en el trópico. M.S. (Project H-510)                                                                                                                                                               |                             | Thesis Dissertation                                 |           | Under review             |
| Llinas, D. 2024. Physicochemical characteristics of dulce de leche manufactured with goat milks and blends of goat's and cow's milk." M.S. Thesis. University of Puerto Rico at Mayaguez (Project H-501)                                                                                                                                                        |                             | Thesis Dissertation                                 |           | Under review             |
| [Empresa de Hortalizas UPRM]. Torres, Y. (2024, May 9). Marchitez Súbita de la Sandía: Hospederos y Manejo [Video]. <a href="https://youtu.be/ZoOa05T32SU">https://youtu.be/ZoOa05T32SU</a> (Project H-516)                                                                                                                                                     |                             | Electronic publication                              |           | X                        |

| Presentations (oral or posters)                                                                                                                                                                                                                                                                                                                                                                                          |                                                 |                          |                               |
|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------|--------------------------|-------------------------------|
| Academic Year 2024-2025                                                                                                                                                                                                                                                                                                                                                                                                  |                                                 |                          |                               |
| Reference                                                                                                                                                                                                                                                                                                                                                                                                                | Forum (ej. SOPCA, international congress, etc.) | Date                     | Place                         |
| <b>Department of Agroenvironmental Sciences</b>                                                                                                                                                                                                                                                                                                                                                                          |                                                 |                          |                               |
| Manejo Integrado de Plagas en Ornamentales para la comunidad. Dania Rivera Ocasio y Amy J. Dreves. Cartel Educativo Profesional.                                                                                                                                                                                                                                                                                         | Sociedad Puertorriqueña de Ciencias Agrícolas.  | 12/13/2024               | Punta Borinquen, Aguadilla.   |
| Developing sustainable whitefly management strategies for poinsettias through extension programs in Puerto Rico. Edda L. Martínez Calez y Dania Rivera Ocasio Cartel Educativo Profesional.                                                                                                                                                                                                                              | Sociedad Puertorriqueña de Ciencias Agrícolas.  | 12/13/2024               | Punta Borinquen, Aguadilla.   |
| Tamarixia radiata como Agente de Control biológico del Psílido Asiático de los cítricos en Puerto Rico                                                                                                                                                                                                                                                                                                                   | Farmers and Agricultural Agents                 | 5/2/2025                 | EEA Adjuntas                  |
| Certificación de Plaguicidas: Categoría 8C (Curso Educación Continua)                                                                                                                                                                                                                                                                                                                                                    | Pest Control Professional                       | 4/29/2025                | San Juan                      |
| Insectos de Importancia Económica en Raíces y Tubérculos (Workshop)                                                                                                                                                                                                                                                                                                                                                      | Agricultural Agents                             | 4/8/2025                 | EEA Corozal                   |
| Salvemos los Cítricos. (Field Day)                                                                                                                                                                                                                                                                                                                                                                                       | Farmers and Agricultural Agents                 | 4/3/2025                 | Añasco                        |
| Plagas de Reciente Introducción. (Workshop and Field Day)                                                                                                                                                                                                                                                                                                                                                                | Farmers and Agricultural Agents                 | 3/27/2025                | EEA Juana Díaz                |
| Bug Bites: Entomophagy. (Workshop)                                                                                                                                                                                                                                                                                                                                                                                       | 4-H's                                           | 3/14-15/2025             | Washington, DC                |
| Identificación y Manejo de Insectos de Importancia en Viveros Forestales. (Workshop)                                                                                                                                                                                                                                                                                                                                     | DRNA and Forest Service                         | 1/23/2025                | Manatí                        |
| Martínez E., D. Rivera. 2024. Developing Sustainable Whitefly Management Strategies for Poinsettias through Extension Programs in Puerto Rico. Memorias de la Cuadragésima séptima Reunión Científica Anual SOPCA.                                                                                                                                                                                                       | SOPCA                                           | 12/13/2024               | Aguadilla, PR                 |
| Diaphorina citri y Toxoptera citricida: Principales vectores en la transmisión de enfermedades en cítricos (Workshop)                                                                                                                                                                                                                                                                                                    | Farmesr, Agricultural Agents and Agronomist     | 12/10/2024               | Las Marías                    |
| Certificación de Plaguicidas: Categoría 8ª (Curso Educación Continua)                                                                                                                                                                                                                                                                                                                                                    | Pest Control Professional                       | Nov. 15, 22 and 26, 2024 | SEA, Rio Piedras              |
| Conversatorio entre mariposarios de PR (Forum)                                                                                                                                                                                                                                                                                                                                                                           | Virtual Meeting Butterfly Gardens of PR         | 10/23/2024               | San Juan, PR                  |
| Manejo Integrado de mosca blanca en Pascuas (Workshop)                                                                                                                                                                                                                                                                                                                                                                   | Newly Appointed Agricultural Agents             | 10/23/2024               | Corozal, PR                   |
| Identificación, Muestreo y Manejo Integrado de Thrips parvispinus. (Short Course)                                                                                                                                                                                                                                                                                                                                        | USDA, PPQ                                       | 10/18/2024               | Hato Rey, PR                  |
| Busqueda de Tesoro: Jardín de Polinizadores. Jardín Botánico de Rio Piedras (Exhibition)                                                                                                                                                                                                                                                                                                                                 | Cierre Semana Nacional 4-H                      | 10/12/2024               | Botanical Garden, Rio Piedras |
| Control de Plagas en Ají y Pimiento (Workshop)                                                                                                                                                                                                                                                                                                                                                                           | Farmers, Agricultural Agents and agronomists    | 9/10/2024                | SEA, Morovis                  |
| Identificación y Muestreo de Escarabajos de Importancia Forestal (Workshop)                                                                                                                                                                                                                                                                                                                                              | DRNA                                            | 9/3/2024                 | Rio Piedras                   |
| Identificación de Lepidoptera (Short Course)                                                                                                                                                                                                                                                                                                                                                                             | USDA- PPQ                                       | 8/29-30, 2024            | Aguada, PR                    |
| <b>Hernandez E.</b> and Macchiavelli S. (2024). Addressing Tomato Disease Management Challenges in Puerto Rico: Insights from a Grower Survey and TomSPOT. [Poster] <a href="https://doi.org/10.1094/APS-PH24-171">https://doi.org/10.1094/APS-PH24-171</a>                                                                                                                                                              | APS                                             | 7/2024                   | TN                            |
| <b>Hernandez E.</b> , Beaver J. & Porch T. Respuesta de Phaseolus en Puerto Rico a Megalurothrips usitatus. 2024 PCCMCA presentation 17 June 2024 1.pptx                                                                                                                                                                                                                                                                 | Oral                                            | 8/2024                   | Honduras                      |
| Ramos-Rodríguez, A. P., <b>Hernández-Heredia, E.</b> , Bair, D. A., Chong, J. A., & Pérez-Arocho, J. (2024) Contribution of Organic Soil Amendments to Tomato Production in Puerto Rico [Abstract]. ASA, CSSA, SSSA International Annual Meeting, San Antonio, TX. <a href="https://scisoc.confex.com/scisoc/2024am/meetingapp.cgi/Paper/160711">https://scisoc.confex.com/scisoc/2024am/meetingapp.cgi/Paper/160711</a> | CCSA                                            | 11/2024                  | TX                            |
| <b>Hernandez E.</b> y Estévez De Jensen C. 2024. Evaluación de Variedades de Sandía; Estrategia para el Manejo de la Marchitez Súbita. Memorias de SOPCA 2024. P25.                                                                                                                                                                                                                                                      | SOPCA                                           | 12/2024                  | PR                            |
| [Empresa de Hortalizas UPRM]. <b>Hernandez E.</b> (2024, noviembre 21). "Marchitez Súbita de la Sandía "Watermelon Vine Decline": Variedades, Manejo y Divulgación [Video]. YouTube <a href="https://youtu.be/2kdnkHLqkCE?si=wN4N_5xdZh8RJ5ic">https://youtu.be/2kdnkHLqkCE?si=wN4N_5xdZh8RJ5ic</a>                                                                                                                      | SEMINAR/ONLINE                                  | 11/2024                  | PR                            |
| [Empresa de Hortalizas UPRM]. <b>Hernandez E.</b> , Macchiavelli S. De Jensen C.E., & Cabrera I. (2025, febrero 10). "Buenas Prácticas para el Manejo de la Marchitez Súbita de la Sandía [Video]. YouTube <a href="https://youtu.be/MH6WVhaUvXk?si=LPBieQ4ROh_n7BUo">https://youtu.be/MH6WVhaUvXk?si=LPBieQ4ROh_n7BUo</a>                                                                                               | EDU/VIDEO                                       | 2/2024                   | PR                            |
| Alondra G. Nieves Santana, Irma Cabrera Asencio, Rosa A. Franqui Rivera y Elvin Lassalle Loperena. 2024. DATOS PRELIMINARES: <i>Amrasca biguttula</i> (HEMIPTERA: CICADELLIDAE) UNA NUEVA PLAGA INVASIVA EN PUERTO RICO.                                                                                                                                                                                                 | SOPCA                                           | 12/2024                  | Aguadilla                     |
| Berenice Estefanía Venegas Hidalgo e Irma Cabrera Ascencio.2024. Datos Preliminares:Distribución, Dispersión, Densidad poblacional de Megalurothrips usitatus (Thysanoptera:Tripidae) en el Noroeste, Este y Sur de Puerto Rico.                                                                                                                                                                                         | SOPCA                                           | 12/2024                  | Aguadilla                     |

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| Elvin A. Lassalle Loperena e Irma Cabrera Asencio. 2024. Datos Preliminares de Depredadores y Parasitoides del Saltahoja Indio del algodón <i>Amrasca biguttula</i> (Hemiptera: Cicadellidae).                                                             | SOPCA                                                                                                                                                                 | 12/2024    | Aguadilla                                                                               |
| Irma Cabrera Asencio. 2024. Cotton Jassid: Effects and Impact in Puerto Rico.                                                                                                                                                                              | Cotton Jassid Research Group Discussion                                                                                                                               | 4/2025     | Colorado, USA                                                                           |
| Irma Cabrera Asencio. 2025. Importance of Cotton Jassid: in Puerto Rico                                                                                                                                                                                    | Florida WorkShop                                                                                                                                                      | 5/2025     | Florida, USA                                                                            |
| Felix, G. Soñar con una Estación Experimental... ¿Agroecológica?                                                                                                                                                                                           | Simposio EEA-SEA-UPR: "Hacia una nueva agenda de investigación y educación en agricultura sostenible, agroecológica y orgánica para el Colegio de Ciencias Agrícolas" | 08/21/2024 | Finca La Zafra, Gurabo (Puerto Rico)                                                    |
| Felix, G. "Slash-and-mulch": Agroforestería en África                                                                                                                                                                                                      | Foro de la Empresa de Hortalizas                                                                                                                                      | 09/19/2024 | en línea (Puerto Rico)                                                                  |
| Felix, G. Metodologías de desarrollo participativo para procesos agroecológicos en América Latina y el Caribe                                                                                                                                              | Curso pre-congreso del X Congreso Latinoamericano de Agroecología                                                                                                     | 10/21/2024 | Asunción (Paraguay)                                                                     |
| Felix, G. ¿Dónde está el alimento en esta ciudad? El caso de Coventry, Inglaterra                                                                                                                                                                          | X Congreso Latinoamericano de Agroecología de SOCLA                                                                                                                   | 10/23/2024 | Asunción (Paraguay)                                                                     |
| Felix, G. Agroforestería en sistemas tropicales                                                                                                                                                                                                            | Foro NRCS-Distritos de Conservación: "Beneficios de prácticas silvopastoriles en sistemas tropicales"                                                                 | 11/13/2024 | EEA-Gurabo, PR                                                                          |
| Felix, G. Common points between Mediterranean and Caribbean Agroecology: A Principle-based Approach                                                                                                                                                        | Organic Agriculture Course                                                                                                                                            | 12/20/2024 | International Center for Advanced Mediterranean Agronomic Studies – CIHEAM Bari (Italy) |
| Felix, G. What's Good in Coventry? Food Abundance vs. Food Poverty (POSTER)                                                                                                                                                                                | Food Sovereignty Photovoice Exhibit by Lucas Worsdell (Project CiCAT)                                                                                                 | 12/28/2024 | PAC, Lares, PR                                                                          |
| Felix, G. Agroecological Resilience: Puerto Rico in the Aftermath of Hurricane María (2017)                                                                                                                                                                | Course: Stabilisation Agriculture (Agroecology Master's Program)                                                                                                      | 01/28/2025 | Coventry University – Centre for Agroecology, Water and Resilience (UK)                 |
| Felix, G. Analysis and Design of Agroecological Farms                                                                                                                                                                                                      | Course: Stabilization Agriculture (Agroecology Master's Program)                                                                                                      | 02/11/2025 | Coventry University – Centre for Agroecology, Water and Resilience (UK)                 |
| Felix, G. Caracterización del Desempeño Agroecológico en Huertos Urbanos y Fincas Campesinas                                                                                                                                                               | Curso: Seminario de Metodologías Científicas                                                                                                                          | 03/25/2025 | UPRU, Utuado, PR                                                                        |
| Felix, G. Agroecology and Food Sovereignty in the Insular Caribbean                                                                                                                                                                                        | Regional Seminar Climate Policy, Coastal Protection and Vulnerable Communities (Project: Island(er)s at the Helm)                                                     | 04/10/2025 | University of Saint Martin Phillipsburg (Sint Maarten)                                  |
| Felix, G. Agroforestry in West Africa and Beyond                                                                                                                                                                                                           | Course: Ecological Processes in Agroecology                                                                                                                           | 04/22/2025 | University of Vermont - Institute for Agroecology (USA)                                 |
| Felix, G. Planificación Agroforestal de Fincas Orgánicas o en Transición                                                                                                                                                                                   | Taller participativo: Proyecto Z-402 (Transiciones Orgánicas)                                                                                                         | 04/24/2025 | Finca Nueva Cosecha, Lajas, PR                                                          |
| Robles, W. 2024. Procesos para el registro de plaguicidas utilizados en la agricultura.                                                                                                                                                                    | Reunion de "PR Agriculture Biotechnology and Innovation Association (PRABIA)"                                                                                         | 10/03/2024 | Ponce                                                                                   |
| Robles, W. 2024. Avances para el registro de fungicidas para el control de enfermedades en café.                                                                                                                                                           | Reunion Anual de Empresa de Cafe                                                                                                                                      | 11/15/2024 | Adjuntas                                                                                |
| Robles, W. 2025. Modo de acción para la selección de un herbicida.                                                                                                                                                                                         | Reunión Anual de "Puerto Rico Vegetation Management Association".                                                                                                     | 03/20/2025 | Carolina                                                                                |
| Robles, W. 2025. Avances sobre el Proyecto IR-4 en PR.                                                                                                                                                                                                     | Conversatorio EEA Corozal                                                                                                                                             | 03/10/2025 | Virtual                                                                                 |
| Robles, W. 2025. Introduction to the IR-4 project. "Pesticide application field training for root and tuber crops",<br><br>Robles, W. 2025. Pesticide registered for root and tuber crops. "Pesticide application field training for root and tuber crops" | A one-day "Train-the-Trainer" field training for Extension Agents.                                                                                                    | 2025       | Corozal                                                                                 |



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| Almodovar, L. and W. Robles. 2025. Farm equipment use and calibration methods. "Pesticide application field training for root and tuber crops"                                                                                       |                                                                                                                                              |                                                                                  |                     |
| Almodovar, L. and W. Robles. 2025. Field demonstration of pesticide applications. "Pesticide application field training for root and tuber crops"                                                                                    |                                                                                                                                              |                                                                                  |                     |
| Sánchez de León, Y. 2024. Natural Resources Career Development Program: A Gateway to Professional Opportunities in Soil Conservation and Related Careers for Puerto Rican Students. Poster presentation                              | Soil Science Society of America 2024 Bouyoucos Summer Conference                                                                             | 6/9-13/2024                                                                      | San Juan PR.        |
| Estévez de Jensen, C., M Lugo, I. Rosado, T Porch and R. Buell. 2024. Erysiphe vignae and Erysiphe diffusa identified causing powdery mildew in Tepary Bean (Phaseolus acutifolius Gray.) in Puerto Rico.                            | National Plant Diagnostic Network Annual Meeting                                                                                             | 11/2024                                                                          |                     |
| Rosado, I. Estévez de Jensen, S. Cosme and T. Porch. 2024. Evaluación de la Resistencia a BCMV en Líneas Registradas del Frijol Tepary Phaseolus acutifolius A. Gray. p. 50                                                          | SOPCA Memorias de la 47 <sup>va</sup> Reunion Anual de la Sociedad Puertorriqueña de Ciencias Agrícolas                                      | 12/2024                                                                          | Aguadilla, PR       |
| Caraballo Cancel, Naomi N. Plaza Delestre, Maria L., Zamora Echevarría, Jose and Orellana Feliciano, Lynette. 2024. Caracterización fisicoquímica de cinco variedades de pitahaya cultivadas en PR. p. 18.                           | SOPCA Memorias de la 47 <sup>va</sup> Reunion Anual de la Sociedad Puertorriqueña de Ciencias Agrícolas                                      | 12/2024                                                                          | Aguadilla, PR       |
| Rivera Torres, Gabriel, Orellana Feliciano, Lynette, Plaza, Maria L., and Latorre, Magda. 2024. El uso de soluciones antimicrobiales como agentes contra microorganismos patógenos y de deterioro. p. 20.                            | SOPCA Memorias de la 47 <sup>va</sup> Reunion Anual de la Sociedad Puertorriqueña de Ciencias Agrícolas                                      | 12/2024                                                                          | Aguadilla, PR       |
| <b>Department of Animal Science</b>                                                                                                                                                                                                  |                                                                                                                                              |                                                                                  |                     |
| <b>Impact of the Training – Welfare and Health for the Sustainable Production of Dairy Goats – on the Knowledge of Goat Farmers, Agronomists, and Students</b><br>Miguelángel Torres, Ábner A. Rodríguez, and María del C. Rodríguez | SOPCA                                                                                                                                        | 12/13/2025                                                                       | Rincon, PR          |
| <b>Effects of Small Ruminant Grazing on Soil Health and Surface Runoff Using Edge-of-Field Monitoring</b><br>Yetzael Núñez Justiniano, Mario L. Flores Mangual, Pedro J. Resto, José Lugo Ortiz, and Abner A. Rodríguez              | SOPCA                                                                                                                                        | 12/13/ 2025                                                                      | Rincon, PR          |
| <b>Grazing Behavior of Ewes in Restricted Pasture of Naturalized Tropical Grasses</b><br>Isabel Claudio, Alexandra Ramírez, Paula Nieves, John Fernández, and Abner A. Rodríguez                                                     | SOPCA                                                                                                                                        | 12/13/2025                                                                       | Rincon, PR          |
| <b>Effects of Grazing Movement Patterns of Small Ruminants on Soil Erosion and Compaction</b><br>Yaneisha L. González Rivera, Mario Flores Mangual, and Yetzael Núñez Justiniano                                                     | SOPCA                                                                                                                                        | 12/13/2025                                                                       | Rincon, PR          |
| <b>Weight Gain of Intact and Castrated Lambs Grazing with Supplementation and High-Grain Diets</b><br>Jetzairy Irizarry Soto, John Fernández Van Cleve, and Abner A. Rodríguez                                                       | SOPCA                                                                                                                                        | 12/13/2025                                                                       | Rincon, PR          |
| <b>Implementation of New Artificial Insemination Techniques in Small Ruminants</b><br>Zahylis Maldonado, Karla Ormaza, Abner A. Rodríguez, Verónica M. Negrón, and John Fernández Van Cleve                                          | SOPCA                                                                                                                                        | 12/13/2025                                                                       | Rincon, PR          |
| <b>Department of Agricultural and Biosystems Engineering</b>                                                                                                                                                                         |                                                                                                                                              |                                                                                  |                     |
| Exploring the impact of small landslides on sediment yield in Western Puerto Rico.                                                                                                                                                   | Seminario UNESCO –"Riesgos Multi-Amenazas en América"                                                                                        | 01/24/2025                                                                       | Online -LATAM       |
| Cosecha de Agua de Lluvia: ¿Innovación en Gestión Hídrica...?                                                                                                                                                                        | Diplomado Internacional en Economía Circular / Módulo VIII - Desarrollo Sostenible y Economía Circular, una ruta hacia ciudades sostenibles. | 12/05/2024                                                                       | Online - LATAM      |
| <b>Department of Agricultural Economics and Rural Sociology</b>                                                                                                                                                                      |                                                                                                                                              |                                                                                  |                     |
| Alwin J. Jiménez Maldonado                                                                                                                                                                                                           | Agricultural Week Challenge                                                                                                                  | 06/14/2024                                                                       | UPRM-CAS            |
| Alwin J. Jiménez Maldonado                                                                                                                                                                                                           | Farm Management Training                                                                                                                     | 08/21/2024<br>08/28/2024<br>09/04/2024<br>09/11/2024<br>09/18/2024<br>09/27/2024 | AES -Coamo & Gurabo |
| Alwin J. Jiménez Maldonado                                                                                                                                                                                                           | Farm Management Training                                                                                                                     | 09/18/2024<br>09/25/2024<br>10/02/2024<br>10/09/2024<br>10/16/2024<br>10/23/2024 | AES - Moca          |
| Alwin J. Jiménez Maldonado                                                                                                                                                                                                           | Welcome & orientation for new students on the topic of Agricultural Economics and Agribusiness                                               | 08/01/2024                                                                       | UPRM-CAS            |
| Alwin J. Jiménez Maldonado                                                                                                                                                                                                           | Open House RUM                                                                                                                               | 10/24/2024                                                                       | UPRM                |

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| Alwin J. Jiménez Maldonado                            | Conference on Sustainable Risk Management in the Agricultural Business (Centro Empresarial Mujer en Agricultura – CEMA)                                                                                                                                                                                        | 11/15/2024                                                                       | UPRM-CAS            |
| Alwin J. Jiménez Maldonado                            | Open House: Graduate Studies                                                                                                                                                                                                                                                                                   | 02/06/2025                                                                       | UPRM                |
| Alwin J. Jiménez Maldonado                            | Agroplug                                                                                                                                                                                                                                                                                                       | 03/27-29/2025                                                                    | UPRM                |
| Alwin J. Jiménez Maldonado                            | Academy for School Counselors                                                                                                                                                                                                                                                                                  | 04/03/2025                                                                       | UPRM-AES            |
| Alwin J. Jiménez Maldonado                            | Open House for incoming new students (Fall 2025)                                                                                                                                                                                                                                                               | 05/17/2025                                                                       | UPRM - CAS          |
| Alwin J. Jiménez Maldonado                            | Farm Management Training                                                                                                                                                                                                                                                                                       | 05/08/2025<br>05/15/2025<br>05/22/2025<br>05/29/2025<br>06/05/2025<br>06/12/2025 | UPR Utuado          |
| Alwin J. Jiménez Maldonado                            | Farm Management Training                                                                                                                                                                                                                                                                                       | 05/15/2025<br>05/22/2025<br>05/29/2025<br>06/05/2025<br>06/12/2025<br>06/18/2025 | AES -Coamo & Gurabo |
| Héctor Tavárez                                        | El efecto de los aranceles en la seguridad alimentaria de Puerto Rico. Discussion panel presented at the 5 <sup>th</sup> Congress of Applied Economics of Puerto Rico held at Mayagüez, Puerto Rico. 5 <sup>th</sup> Conference of Applied Economics                                                           | 5/9/2025                                                                         | UPR-Mayaguez        |
| Héctor Tavárez                                        | Evaluación sobre las percepciones ambientales y el uso de espacios recreativos en el Bosque del Cerro las Mesas de Puerto Rico. Oral presentation presented at the 5 <sup>th</sup> Congress of Applied Economics of Puerto Rico held at Mayagüez, Puerto Rico. 5 <sup>th</sup> Conference of Applied Economics | 5/9/2025                                                                         | UPR-Mayaguez        |
| Alicia Barriga                                        | Agricultural Economics and Rural Sociology. Alternativas de Mercadeo para la carne de cordero. TAI Institute                                                                                                                                                                                                   | 10/03/2024                                                                       | Online              |
| Alicia Barriga, Abner Rodriguez, and Francisco Rivera | Agricultural Economics and Rural Sociology, Animal Science, and NRCS. Prácticas de conservación y sistemas silvopastoriles en fincas de productores de pequeños rumiantes en Puerto Rico. SOPCA                                                                                                                | 12/13/2024                                                                       | Aguadilla, PR       |
| Alicia Barriga and Francisco Rivera                   | Farmers' perceptions and Conservation Practices Adoption. Northeastern Agricultural and Resource Economics Association (NARE) Circle of Scholars                                                                                                                                                               | 01/30/2025                                                                       | Online              |
| Alicia Barriga                                        | Income Statement and Cash Flow<br>ERME: Risk Management and Emergency Preparedness in Puerto Rico                                                                                                                                                                                                              | 02/27/2025                                                                       | Online              |
| Alicia Barriga                                        | How to interpret financial rations<br>ERME: Risk Management and Emergency Preparedness in Puerto Rico                                                                                                                                                                                                          | 03/06/2025                                                                       | Online              |
| Alicia Barriga                                        | A Model for Cooperative Microgrids<br>National Science Foundation, STORM, Winter Workshop. Alaska-Maine-UPRM Consortium                                                                                                                                                                                        | 03/10/2025                                                                       | Online              |



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| Alicia Barriga and Julio Cesar Hernández                                                                                                                                                                        | Rural Health in Puerto Rico. 5 <sup>th</sup> Congress of Applied Economics, RUM                                                                                     | 05/09/2025                        | Mayaguez, PR                    |
| Alicia Barriga and Francisco Rivera                                                                                                                                                                             | Identification of Pasture Species and Farmers. Perceptions of Conservation Practices.                                                                               | 06/10/2025)                       | Burlington, VT                  |
| Alicia Barriga and Francisco Rivera                                                                                                                                                                             | Economic and Ecological Perceptive on Conservation Adoption by Livestock and Coffee Producers in Puerto Rico. Soil and Water Conservation Society Annual Conference | 08/05/2025 (upcoming)             | Costa Mesa, CA                  |
| Leticia Gayol Santana                                                                                                                                                                                           | "Procesos de Informes de Progreso y cierre de Proyectos de Investigación", Conversatorios con Administradores EEA                                                   | 11-25-2024                        | Virtual                         |
| <b>Department of Agricultural Education</b>                                                                                                                                                                     |                                                                                                                                                                     |                                   |                                 |
| Dr. Anibal Ruiz Lugo<br>PEARS Software: Workshop for evaluating action plans                                                                                                                                    | PREAS, STAFF                                                                                                                                                        | 3/2025                            | Mayagüez, PR                    |
| Dr. Anibal Ruiz Lugo<br>Working with PEARs: Questions & answers support                                                                                                                                         | PRAES, Extension Faculty                                                                                                                                            | 3/2025                            | Online                          |
| Dr. Anibal Ruiz Lugo<br>Education for Change: Building Peace through Collective Engagement                                                                                                                      | Peace Talks: Puerto Rico and Colombia                                                                                                                               | 2/2025                            | Online                          |
| Dr. Anibal Ruiz Lugo<br>Recommended Protocols for visits to farms by Extension workers in emergency situations: Avian fever                                                                                     | Agricultural Extension Faculty Agents                                                                                                                               | 1/2025                            | Online                          |
| Dr. Anibal Ruiz Lugo<br>PEARS Software: Workshop for action plans                                                                                                                                               | PRAES Faculty & Specialists                                                                                                                                         | 1/2025                            | Mayagüez, PR                    |
| Dr. Anibal Ruiz Lugo<br>Level of ecological intelligence in participants of the educational programs of the Puerto Rico Agricultural Extension Service (PRAES) and according to their age, gender and schooling | Association for International Agricultural and Extension Education (AIAEE)                                                                                          | 11/2024                           | Inverness, Scotland             |
| Dr. Anibal Ruiz Lugo<br>PEARS software Training: On boarding Action plans                                                                                                                                       | PRAES Southwest Region                                                                                                                                              | 11/2024                           | Lajas, PR                       |
| Dr. Anibal Ruiz Lugo<br>PEARS software Training: On boarding Action plans                                                                                                                                       | PRAES Northeast Region                                                                                                                                              | 11/2024                           | Rio Piedras, PR                 |
| Dr. Anibal Ruiz Lugo<br>PEARS software Training: On boarding Action plans                                                                                                                                       | PRAES Southeast Region                                                                                                                                              | 11/2024                           | Juana Díaz, PR                  |
| Dr. Anibal Ruiz Lugo<br>PEARS software Training: On boarding Action plans                                                                                                                                       | PRAES North Central Region                                                                                                                                          | 11/2024                           | Camuy, PR                       |
| Dr. Anibal Ruiz Lugo<br>PEARS software training. Introduction to new platform                                                                                                                                   | PRAES North Central Region                                                                                                                                          | 8/2024                            | Lajas,PR                        |
| Dr. Anibal Ruiz Lugo<br>PEARS software training. Introduction to new platform                                                                                                                                   | PRAES North Central Region                                                                                                                                          | 9/2024                            | Lares, PR                       |
| Dr. Anibal Ruiz Lugo,<br>PEARS software training. Introduction to new platform                                                                                                                                  | PRAES Southwest Region                                                                                                                                              | 9/2024                            | Lajas, PR                       |
| Dr. Anibal Ruiz Lugo<br>PEARS software training. Introduction to new platform                                                                                                                                   | PRAES Northeast Region                                                                                                                                              | 9/2024                            | Río Piedras, PR                 |
| Dr. Anibal Ruiz Lugo<br>PEARS software training. Introduction to new platform                                                                                                                                   | PRAES Faculty & Specialists                                                                                                                                         | 8/2024                            | Lajas ,PR                       |
| Dr. Anibal Ruiz Lugo<br>PEARS software training. Introduction to new platform                                                                                                                                   | PRAES Southeast Region                                                                                                                                              | 8/2024                            | Juana Díaz ,PR                  |
| Dr. Janis Del Rosario Morales<br>What is an educational capsule? How can it be used to present 4-H projects?                                                                                                    | Virtual Office Positive Development 4- H TEAMS                                                                                                                      | 2/8/2024<br>2/15/2024<br>3/7/2024 | Online- TEAMS                   |
| Dr. Janis Del Rosario Morales<br>Workshop: Theater as an Educational Strategy<br>"La venta del bacalao rebelde"                                                                                                 | Induction Training                                                                                                                                                  | 5/29/2024                         | Holiday Inn Hotel- Mayaguez, PR |

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| Dr. Janis Del Rosario Morales<br>Bugs and Fungi Theatrical Masks                                                                                                                                       | Bug and Fungi 4-H Summer Camp                             | 6/26,<br>6/27,<br>6/28/2024 | University of PR<br>Mayaguez Campus<br>Finca Alzamora |
| Dr. Janis Del Rosario Morales<br>4-H Thriving Model: Positive Youth Development                                                                                                                        | Master Class                                              | 10/29/2024                  | University of PR<br>Mayaguez Campus                   |
| Dr. Janis Del Rosario Morales<br>Drama Rolling Theatre 4-H                                                                                                                                             | Orientation and Recruitment during the Induction Ceremony | 7/31/2024                   | University of PR<br>Mayaguez Campus                   |
| Dr. Janis Del Rosario Morales<br>Drama Rolling Theatre "La venta del bacalao rebelde" and My Healthy Plate                                                                                             | Middle School                                             | 10/8/2024                   | Middle School<br>Segunda Unidad<br>David Antorgiorgi  |
| Dr. Janis Del Rosario Morales<br>National 4-H Congress: Cooperative and Competitive Games through the Fine Arts                                                                                        | 4-H National Congress                                     | 12/1/2024                   | Hyatt, Atlanta<br>Georgia                             |
| Dr. Janis Del Rosario Morales<br>Cooperative and Competitive Games through the Fine Arts                                                                                                               | Workshop: Family and Consumer Sciences Educator           | 12/3/2024                   | Arecibo, PR                                           |
| Dr. Janis Del Rosario Morales<br>Cooperative and Competitive Games through the Fine Arts                                                                                                               | Workshop for 4-H Volunteer Leaders                        | 1/27/2205                   | Aguadilla, PR<br>Escuela Superior                     |
| Dr. Janis Del Rosario Morales<br>A Gathering with Youth: Theater in Older Adults<br>Cooperative and Competitive Games through the Fine Arts. The experience in Atlanta Georgia with youth students 4-H | Workshop                                                  | 04/03/2025                  | Chapel Theater<br>Mayaguez, PR                        |
| Prof. Gloriselle Negrón Home storage, filtration, and disinfection to produce drinking water                                                                                                           | Garden Club                                               | 10/8/2024                   | San Juan                                              |
| Prof. Gloriselle Negrón Dealing with natural disasters in the Puerto Rican urban forest                                                                                                                | PRAES' personnel                                          | 10/16/2024                  | Mayagüez                                              |
| Prof. Gloriselle Negrón<br>Dealing with natural disasters in the Puerto Rican urban forest                                                                                                             | PRAES' personnel                                          | 10/24/2024                  | San Juan                                              |

## Appendix E Research and Creative Work College of Engineering

### Department of Chemical Engineering

#### Submitted Proposals:

1. "Curbing climate change and improving resilience in rural communities by creating new lifecycles for mixed waste plastics and biomass" por \$1,800,000, 4 años. En esta propuesta participan Dra. Yomaira Pagán (PI, UPRM), Dr. Arturo J. Hernández-Maldonado (Co-PI) y Dra. Claribel Acevedo (Co-PI). Proposal submitted to the NSF EPSCoR Track 2 program – January 23, 2024.
2. "UPR-UW PREM: Center for Advancing Research and Training for STEM Success" por \$4,200,000, for 6 years. Dr. Claribel Acevedo (PI), Dr. Yomaira Pagán (Co-PI), Dr. Arturo J. Hernández-Maldonado (Co-PI), Dr. Ubaldo Cordova (Co-PI) and Dr. Camilo Mora (Co-PI) participate in this proposal. Proposal submitted to the NSF PREM program –March 12, 2024.
3. "Characterization, detection, and degradation of persistent emerging contaminants (PEC) in air (dust from Saharan desert), soils, and irrigation districts of Puerto Rico" por \$ 3,621,780, 5 años. Dr. Samuel Hernández (PI, Chemistry) and Dr. Arturo J. Hernández-Maldonado (Co-PI) participate in this proposal. Proposal submitted to the NSF GCR program – April 12, 2024.
4. "AIMS: AI-Enabled Materials Discovery, Design, and Synthesis Institute" for \$414,000, 5 years. Dr. Arturo J. Hernández-Maldonado (Co-PI) and Dr. Ubaldo Cordova (Co-PI) participate in this proposal. Proposal submitted to the program NSF National Artificial Intelligence (AI) Research Institutes –16 de mayo de 2024
5. Non-invasive Therapy using Lamina Propria Extract for Vocal Fold Healing, C. Mora
6. Vocal Fold Restoration via incorporation of Matrix-Bound Vesicles as Tissue Specific Signaling Factors into Injectable Hydrogels. C. Mora
7. Tissue-Specific Matrix-Bound Vesicles Shaping Wound Healing and Bio-Substrate Innovation MIRA, C. Mora
8. RISE 2 the BEST Graduate Level, C. Mora
9. "Collaborative Research: RII Track-2 FEC: Curbing climate change and improving resilience in rural communities by creating new lifecycles for mixed waste plastics and biomass". (PI: Yomaira Pagán; co-PIs: Claribel Acevedo, Liz Díaz, Keyla Soto). Submitted January 2024. Total Amount: \$1,800,000. Declined.
10. "UPR-UW PREM: Center for Advancing Research and Training for STEM Success". (PI: Claribel Acevedo; co-PI: Yomaira Pagan, Paul Voyles, Shelly Grandell). Submitted March 2024. Total Amount: \$4,200,000. (Awarded on 24/July/2024).
11. "BioFoundry: Artificial Intelligence-Driven RNA BioFoundry". Lead PI: Daeyeon Lee (co-PIs: Claribel Acevedo-Vélez, David Issadore, Zachary Ives, Drew Weissman) PI at UPRM: Claribel Acevedo-Vélez. Sub-award Amount: \$1,599,580. Submitted October 2023. Total Amount: \$18,000,000. (Awarded on 27/August/2024)
12. PRSTRT: Polymer Nanocomposite Membrane Assembly for Water Purification on the International Space Station (PI), (Approved-New).
13. DOD: Acquisition of an NMR for the Study of Novel Multi-Ionic Polymers (PI), (Approved-New).
14. DOD-ARO: Sulfonated Poly(arylene-ether-ketone-sulfone) with Additional Elastomeric Domains for Protective Clothing and Fuel Cell Applications (PI), (Pending).
15. NFS-CAWT- Materials Discovery for Cardiorespiratory Disease Biomarker Detection Using Machine Learning (PI) (Pending).
16. DOE: Manufacturing of Reinforced Membranes for Redox Flow Batteries (PI), (Pending).
17. DOE: Intermediate Temperature Fuel Cell Membranes Based on Conducting Azole Systems PI), (Pending).
18. DOE: Synthesis and Nanoscale Assembly of Stable and Highly-Active Photocatalytic Membranes for Wastewater Purification Systems (PI), (Pending).
19. PRBio Tech Hub, senior personnel, EDA, 2M, February 2024, M. Torres-Lugo
20. Hand Held Induction Heaters for Pancreatic and Prostatic Cancer, \$275K, NSF, SBIR, October 2023, M. Torres-Lugo
21. PR INBRE Feasibility Grants: TMT-Proteomic analysis of total protein extracts from yeast *S. cerevisiae* cultures in microgravity conditions (ACCEPTED) (\$5,150) M. Latorre
22. Catalyzer Research Grants: Production of Biopolymeric Filaments from Agricultural Waste for Sustainable Additive Manufacturing (\$69, 860). Not accepted, will be resubmitted. M. Latorre
23. Puerto Rico Science, Technology and Research Trust - Commercialization of a Turn-key System for Sampling and Analysis of Flowing Powder Blends. Rodolfo J. Románach, Rafael Méndez, awarded
24. NSF Collaborative Research: HSI Pilot Project: PRACTICE - Performance Refinement through AI Correction in Technical Writing for Chemical and Electronics Engineering; PI Ubaldo M. Córdova-Figueroa (UPRM), CoPI Gabriel Castelblanco (University of Florida), CoPI Elías Beauchamp (UPR-Bayamón); \$300,000; September 15, 2024 – August 31, 2026. (Awarded)
25. NASA MOSAICS: Controlled Assembly of Amphiphilic Janus Particles in Polymer Matrix for Novel 3D Printing Applications in Space; PI Ubaldo M. Córdova-Figueroa (UPRM), CoPI Carlos Martinez (Purdue), SP John McQuillen (NASA Glenn Research Center); \$300,000; 2 Years. (Awarded)
26. NSF Collaborative Research: EPIIC: Strategic University Practices to Expand Research (SUPER) Partnerships; PI Ubaldo M. Córdova-Figueroa (UPRM); \$400,000; September 1, 2024 to August 31, 2027. (Awarded)
27. Huck Institutes of the Life Sciences (Huck) and the Materials Research Institute (MRI) Inter-Institutional Partnerships for Diversifying Research (IPDR) Program: Ultrasound microfluidic cell manipulation and separation; PI Igor Aronson (Penn State), CoPI Ubaldo M. Córdova-Figueroa (UPRM); \$15,000 (funding remains in PSU); September 1, 2024 to August 31, 2025. (Awarded)
28. NSF Artificial Intelligence (AI) Research Institute, Theme 2: AIMS: AI-Enabled Materials Discovery, Design, and Synthesis Institute; PI Vasant Honavar (Penn State), etc., SP Ubaldo M. Córdova-Figueroa, SP Arturo Hernández-Maldonado; \$20M (\$414,000 to UPRM as subaward); 5 Years. (Submitted)
29. NSF - Collaborative Research: RII Track-2 FEC: Curbing climate change and improving resilience in rural communities by creating new lifecycles for mixed waste plastics and biomass; 09/01/2024-08/31/2028; Center-\$6M/4 years; UPRM \$1.8 M/4 years (Role: PI).
30. Dr. Arturo Hernández submitted the proposal titled "NASA EPSCoR Rapid Response Research (R3) RFA-034: Low Consumable Environmental Control and Crew Systems" to UPRM CID for consideration in internal competition. December 11, 2024
31. NFS-CAWT- Materials Discovery for Cardiorespiratory Disease Biomarker Detection Using Machine Learning (PI) DSuleiman (Pending).
32. DOE: Improving Polymer Electrolytes Through Controlling the Interplay between Microstructure and Proton Transport (PI), DSuleiman (LOI approved-Full proposal to be submitted next semester).
33. NASA-MUREP: Center for Nanomaterials and Chemical Sensing for Water Quality to Ensure Food Safety for Terrestrial Systems (Co-PI) DSuleiman (Pending).
34. NSF-ERC: Engineering Research Center (ERC) on Reliable, Efficient and Sustainable Electrochemical Transformations and Separations (RESETS) (Co-PI) DSuleiman (Pending)
35. Integration of Bifurcation Analysis and Multiobjective Nonlinear Model Predictive control of Problems Involving Molecular Networks and Metabolic Pathways, NSF, LSridhar

36. Bifurcation analysis and Multiobjective nonlinear model predictive control of cancer therapy models, NSF, LSridhar
37. A mathematical framework involving bifurcation analysis and multiobjective nonlinear model predictive control to deal with environmental engineering problems, NSF, LSridhar
38. STTR Phase I: Hand-Held Induction Heaters for Pancreatic and Prostatic Cancer Treatment, (senior personnel), \$275,000 (\$83,483), 10/1/2024-9/30/2025. M. Torres AWARDED
39. Modeling the Gut-Immune Axis Using a Human Organoid-Derived Microphysiological System in Space. Maribella Domenech (PI, UPRM) and Andres Garcia (MPI, Georgia tech), Ankur Singh (Co-I Georgia tech), Rhodium Scientific. Tissue Chips in Space 2.0 -NIH. Total funds \$2,882,834.00 (phase 1, 3-years), \$1,995,107.00 (phase 2, 2-years)
40. Engineering Oncoaging Models of Breast Cancer Harnessing Patient-Derived Extracellular Matrix Signals. Maribella Domenech (PI, UPRM), Camilo Mora (co-PI, UPRM) and Rosa Velez (co-I, Southern pathology). NIH, Total: \$400,845 (2 years)
41. A biodegradable collagen hydrogel as a regenerative approach for the treatment of Stress Urinary Incontinence in women. CHEN, BERTHA (co-PI, Stanford), MALHOTRA, RAJ (PI, Smartweave) and Maribella Domenech (co-I, UPRM). NIH SBIR/STTR. Total: \$2,169,691 (3 years)
42. SBIR Phase I: Novel surface coatings for urethral slings to mitigate inflammatory responses in Diabetic patients. MALHOTRA, RAJ (PI, Smartweave), CHEN, BERTHA (co-I, Stanford), and Maribella Domenech (co-I, UPRM), NSF/SBIR/STTR. Total \$305,000 (1 year).
43. Enhancing PR Biopharmaceutical & Deep-Tech Innovation Ecosystem Through CytoBOOS; FY 2024 Build to Scale, U.S. Economic Development Administration; \$3,054,000; PI Moraima De Hoyos-Ruperto, Co-PI Marien Mendez, Co-PI Ubaldo M. Córdova-Figueroa; 02/03/2025 - 02/02/2027 (submitted)
44. Workforce Development, Innovation, Research and Entrepreneurship (WIRE) Center; FY23 EDA Disaster Supplemental; \$750,000; PI Ubaldo M. Córdova-Figueroa, Co-PI Moraima De Hoyos-Ruperto (not funded)
45. RISE to the BEST graduate Research pending 12/2024/-11/2029 NIH, CMora, Senior personnel
46. Engineering Oncoaging model of breast cancer harnessing patient-derived matrix signaling, Pending, 08/01/2025 -07/31/2027, \$275000 / 2 years NIH NIA, CMora, Co-PI
47. Modeling the Gut-Immune Axis Using a Human Organoid-Derived Microphysiological System in Space, Pending, 07/01/2025-06/30/2030, \$3,728,136 / 5 years NIH NCATS, CMora, Co-investigator
48. MRI: Track 1 Acquisition of an Atomic Force Microscope to Support Education and Research in Nanoscale Material Science, CAcevedo, total requested: \$764,055, submitted: November 15, 2024
49. Preproposal Re-submitted to Puerto Rico Science Trust: Advancing Renewable Solutions for Biomedical Applications. MLatorre, Submitted January 10, 2025. \$150,000
50. NSF: (Co-PI) Collaborative Research: FEC: Manufacturing Sustainable Materials for Medical Uses from Renewable Feedstocks. MLatorre, submitted January 27, 2025. \$2,000,000
51. DOE VFP: Hybrid Electrodialysis System with Redox-Enhanced Porous Electrodes for Arsenic Detection and Removal, PBaldaguez (PI), **(Pending)**.
52. USGS PR CLIMA: Dual-Phase Redox Flow Desalination System for Heavy Metal Detection and Water Desalination, PBaldaguez (PI), **(Pending)**
53. PR Science Trust ARG: Molecularly Imprinted Electrochemical Sensor for Lactic Acid Detection in Sweat for Non-Invasive Biomonitoring, PBaldaguez (PI), **(Pending)**.
54. NSF EPSCOR Fellow: Electrochemically Mediated Solutions for Selective Arsenic Detection and Remediation, PBaldaguez (PI), **(Pending)**
55. Sloan Foundation: Lactic Acid Biomonitoring for Electrochemical Detection in Sweat, PBaldaguez (PI), **(Pending)**

#### New Projects:

1. "RII Track-4: NSF: Design of Bioresponsive Liquid Crystal Droplets for Sensing in Cellular Environments" PI: Claribel Acevedo-Vélez (collaborators: David Lynn and Sean Palecek, UW-Madison) Submitted to NSF EPSCoR in April 2023. Award Amount: \$299,902. (Awarded on 6/November/2023)
2. "BioFoundry: Artificial Intelligence-Driven RNA BioFoundry" Lead PI: Daeyeon Lee (co-PIs: Claribel Acevedo-Vélez, David Issadore, Zachary Ives, Drew Weissman) PI at UPRM: Claribel Acevedo-Vélez. Sub-award Amount: \$1,999,476. Submitted to NSF BioFoundries to Enable Access to Infrastructure and Resources for Advancing Modern Biology and Biotechnology (BioFoundries) in October 2023. Total Amount: \$24,000,000.
3. "UPR-UW PREM: Center for Advancing Research and Training for STEM Success". (PI: Claribel Acevedo; co-PI: Yomaira Pagan, Paul Voyles, Shelly Grandell). Submitted March 2024. Total Amount: \$4,200,000. (Awarded on 24/July/2024).
4. PRSTRT-ARG Polymer Nanocomposite Membrane Assembly for Water Purification on the International Space Station DSULEIMAN (PI).
5. DODI: Acquisition of an NMR for the Study of Novel Multi-Ionic Polymers, DSULEIMAN (PI), (Approved-New).
6. Puerto Rico Science, Technology and Research Trust - Commercialization of a Turn-key System for Sampling and Analysis of Flowing Powder Blends. \$150,000, R. Romanach, R. Mendez. awarded
7. PR-INBRE-IdEA. Small Instrument Grant. Ultracentrifuge for Isolation of Extracellular Vesicles 60K CMORA (PI)
8. PR-INBRE-IdEA\_ Development Award for Early-Stage Investigators "Matrix-bound Vesicles as Tissue- Specific Signaling Factors for Wound Healing in Vocal Fold Treatment" CMORA (PI) \$300,000
9. PR INBRE Feasibility Grants: TMT-Proteomic analysis of total protein extracts from yeast *S. cerevisiae* cultures in microgravity conditions (ACCEPTED) (\$5,150) M. Latorre
10. "Impact of Microgravity on microcarrier culture of mesenchymal stem cells". Maribella Domenech (PI, INQU, UPR-Mayaguez). PRTRUST. Total: \$50,000, 05/2024 – 12/2025.
11. Cracking the developmental blueprint of life: Omics, Computational Science, and AI. Riccardo Pappa (PI, BIOL, UPR-Rio Piedras), Maribella Domenech (Co-PI, INQU, UPR-Mayaguez), NSF, Total: \$7,000,000 (~\$350,000 sub-award to UPR-Mayaguez) 08/2024 – 12/2029.
12. "Bioink Innovation: BioExtend Bioink Technology for 3D bioprinting applications". Maribella Domenech (PI, INQU, UPR-Mayaguez) PRTRUST, Total: \$75,000, 08/2024 – 12/2025
13. NSF Collaborative Research: HSI Pilot Project: PRACTICE - Performance Refinement through AI Correction in Technical Writing for Chemical and Electronics Engineering; PI Ubaldo M. Córdova-Figueroa (UPRM), CoPI Gabriel Castelblanco (University of Florida), CoPI Elías Beauchamp (UPR-Bayamón); \$300,000; September 15, 2024 – August 31, 2026. (Awarded)
14. NASA MOSAICS: Controlled Assembly of Amphiphilic Janus Particles in Polymer Matrix for Novel 3D Printing Applications in Space; PI Ubaldo M. Córdova-Figueroa (UPRM), CoPI Carlos Martinez (Purdue), SP John McQuillen (NASA Glenn Research Center); \$300,000; 2 Years. (Awarded)
15. NSF Collaborative Research: EPIIC: Strategic University Practices to Expand Research (SUPER) Partnerships; PI Ubaldo M. Córdova-Figueroa (UPRM); \$400,000; September 1, 2024 to August 31, 2027. (Awarded)

16. Huck Institutes of the Life Sciences (Huck) and the Materials Research Institute (MRI) Inter-Institutional Partnerships for Diversifying Research (IPDR) Program: Ultrasound microfluidic cell manipulation and separation; PI Igor Aronson (Penn State), CoPI Ubaldo M. Córdova-Figueroa (UPRM); \$15,000 (funding remains in PSU); September 1, 2024 to August 31, 2025. (Awarded)

#### On Going Projects:

1. ERC-NSF, UPRM- Engineering Research Center for Cell Manufacturing Technologies- Khris Roy (PI-Lead Georgia Tech), Sean Palecek (Co-PI, UW-Madison), UPRM personnel: Madeline Torres-Lugo (Co-PI, UPR-Mayaguez), Maribella Domenech (INQU Testbed 3 Co-lead), Jorge Almodovar (INQU Testbed 1 Co-lead), Wandaliz Torres (ININ, senior personnel), Agnes Padovani (INCM, Education Co-lead) and Pedro Resto (INME, senior personnel). \$ 2,570,832 of total \$10,000,000, 10/01/2022 to 08/14/2027.
2. Wisconsin - Puerto Rico Partnership for Research and Education in Materials (Wi(PR)2EM), Ubaldo M. Córdova-Figueroa (PI), Nicholas Abbott (CoPI), Nelson Cardona (CoPI), Anne Gillian-Daniel (CoPI); NSF, \$4.2M, 10/01/18-10/31/2024 (6 years), (SP) Aldo Acevedo, Claribel Acevedo, Arturo Hernández, Yomaira Pagán, Rodolfo Romañach.
3. Los doctores Arturo Hernández-Maldonado (PI), Brad Weiner (Co-PI, UPR-RP) y Madeline Torres-Lugo (Co-PI) recibieron aprobación de la propuesta "Center for the Advancement of Wearable Technologies (CAWT): Engineered (Bio)Interfaces, Energy Harvesting/Storage and Data Analytics for Health and Diagnostic Monitoring" por parte de NSF y por \$17,100,000/5 años. Doctors Ubaldo Cordova and Maribella Domenech also participate in this project, as well as a group of professors from UPR-RP, and other educational and private institutions in Puerto Rico (41 researchers and educators, 23 institutions in total). 1 de julio 2019- jun/30/24.
4. Doctors Arturo J. Hernández-Maldonado and Yomaira Pagán, together with researchers from the University of Puerto Rico – Río Piedras received approval of the proposal "Puerto Rico Space Partnership for Research, Innovation and Training to Engage the Next Generation of Explorers (PR-SPRINT)" por parte del programa NASA MIRO y por \$3,000,000 por tres años. 12 de julio de 2019-9/30/24.
5. DoE Membrane-Catalyst Co-Design for Transformative Manufacturing. UPRM Subaward PI, sep/1/22, aug/31/25, \$574,383. Externos (DoE), Dr. Arturo J. Hernández-Maldonado
6. NASA - Center of sustainable technologies for water reclamation and reuse (CSTWR<sup>2</sup>). NASA, \$1,125,000 / 3 years, DSuleiman (Co-PI) (Approved). (10/2020 – 8/2025)
7. *Distinct contributions of mesenchymal cell niches in the therapeutic potential of the hedgehog pathway in triple negative breast cancer.* Maribella Domenech (PI, INQU, UPR-Mayaguez), Wandaliz Torres-García (Co-I, ININ, UPR-Mayaguez) and Madeline Torres-Lugo (Senior personnel, INQU, UPR-Mayaguez). NIH-NIGMS SC1, \$ 1,398,145 total costs, 08/2020-07/2024.
8. "Membrane-Catalyst Co-Design for Transformative Manufacturing" to US DoE. Submitted on March 16, 2022 – by Dr. Michael Tsapatsis (Johns Hopkins U.), Dr. Arturo Hernández-Maldonado, Dr. Ilja Siepmann (U. Minnesota), Dr. Rebecca Lindsey (Lawrence Livermore National Lab.), Dr. Chao Wang (Johns Hopkins U.), and Chao Wang (Johns Hopkins U.), and Brandon Bukowski (Johns Hopkins U.) March 17, 2022 – Proposal "Membrane-Catalyst Co-Design for Transformative Manufacturing" submitted to US DoE by Dr. Michael Tsapatsis (Johns Hopkins U.), Dr. Arturo Hernández-Maldonado, Dr. Ilja Siepmann (U. Minnesota), Dr. Rebecca Lindsey (Lawrence Livermore National Lab.), Dr. Chao Wang (Johns Hopkins U.), and Dr. Chao Wang (Johns Hopkins U.), and Dr. Brandon Bukowski (Johns Hopkins U.) was approved. The group submitted formal proposal to US DoE for \$4,500,000/3 years.
9. NIH-NIGMS, Diversity Supplement Program - Effect of Extracellular Matrix Components (tumor vs. normal) on the Hedgehog Pathway in Triple-Negative Breast Cancer–Maribella Domenech (PI), and Camilo Mora (faculty candidate). \$300,000. 08/01/2022 to 07/30/2024.
10. NSF-MRI: Acquisition of a Zeiss 560 VP FE-SEM for Chemical and Surface Characterization and Training (SP), DSuleiman (Approved-New). Phase 2: Propel for the E-Team Program Venturewell Winter 2024: Per3DPRints (December 1, 2023-June 30,2025). MLatorre, Accepted \$19,988.00.
11. "RII Track-4: NSF: Design of Bioresponsive Liquid Crystal Droplets for Sensing in Cellular Environments" PI: Claribel Acevedo-Vélez (collaborators: David Lynn and Sean Palecek, UW-Madison) Submitted to NSF EPSCoR in April 2023. Award Amount: \$299,902. (Awarded on 6/November/2023)
12. Extracellular vesicles (EVs) isolated from the Endothelial Extracellular Matrix to develop an EV-Biosensor for Monitoring Cardiovascular pathologies. Dr. C. Mora
13. "BioFoundry: Artificial Intelligence-Driven RNA BioFoundry" Lead PI: Daeyeon Lee (co-PIs: Claribel Acevedo-Vélez, David Issadore, Zachary Ives, Drew Weissman) PI at UPRM: Claribel Acevedo-Vélez. Sub-award Amount: \$1,999,476. Submitted to NSF BioFoundries to Enable Access to Infrastructure and Resources for Advancing Modern Biology and Biotechnology (BioFoundries) in October 2023. Total Amount: \$24,000,000.
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15. PRSTR-ARG Polymer Nanocomposite Membrane Assembly for Water Purification on the International Space Station DSULEIMAN (PI).
16. DOI: Acquisition of an NMR for the Study of Novel Multi-Ionic Polymers, DSULEIMAN (PI), (Approved-New).
17. Puerto Rico Science, Technology and Research Trust - Commercialization of a Turn-key System for Sampling and Analysis of Flowing Powder Blends. \$150,000, R. Romanach, R. Mendez. Awarded
18. PR-INBRE-IDEA. Small Instrument Grant. Ultracentrifuge for Isolation of Extracellular Vesicles 60K CMORA (PI)
19. PR-INBRE-IDEA\_ Development Award for Early-Stage Investigators "Matrix-bound Vesicles as Tissue- Specific Signaling Factors for Wound Healing in Vocal Fold Treatment" CMORA (PI) \$300,000
20. PR INBRE Feasibility Grants: TMT-Proteomic analysis of total protein extracts from yeast *S. cerevisiae* cultures in microgravity conditions (ACCEPTED) (\$5,150) M. Latorre
21. "Impact of Microgravity on microcarrier culture of mesenchymal stem cells". Maribella Domenech (PI, INQU, UPR-Mayaguez). PRTRUST<sub>1</sub> Total: \$50,000, 05/2024 – 12/2025.
22. Cracking the developmental blueprint of life: Omics, Computational Science, and AI. Riccardo Pappa (PI, BIOL, UPR-Rio Piedras), Maribella Domenech (Co-PI, INQU, UPR-Mayaguez), NSF, Total: \$7,000,000 (~\$350,000 sub-award to UPR-Mayaguez) 08/2024 – 12/2029.
23. "Bioink Innovation: BioExtend Bioink Technology for 3D bioprinting applications". Maribella Domenech (PI, INQU, UPR-Mayaguez) PRTRUST<sub>1</sub> Total: \$75,000, 08/2024 – 12/2025
24. NSF Collaborative Research: HSI Pilot Project: PRACTICE - Performance Refinement through AI Correction in Technical Writing for Chemical and Electronics Engineering; PI Ubaldo M. Córdova-Figueroa (UPRM), CoPI Gabriel Castelblanco (University of Florida), CoPI Elías Beauchamp (UPR-Bayamón); \$300,000; September 15, 2024 – August 31, 2026. (Awarded)
25. NASA MOSAICS: Controlled Assembly of Amphiphilic Janus Particles in Polymer Matrix for Novel 3D Printing Applications in Space; PI Ubaldo M. Córdova-Figueroa (UPRM), CoPI Carlos Martínez (Purdue), SP John McQuillen (NASA Glenn Research Center); \$300,000; 2 Years. (Awarded)
26. NSF Collaborative Research: EPIIC: Strategic University Practices to Expand Research (SUPER) Partnerships; PI Ubaldo M. Córdova-Figueroa (UPRM); \$400,000; September 1, 2024 to August 31, 2027. (Awarded)

27. Huck Institutes of the Life Sciences (Huck) and the Materials Research Institute (MRI) Inter-Institutional Partnerships for Diversifying Research (IPDR) Program: Ultrasound microfluidic cell manipulation and separation; PI Igor Aronson (Penn State), CoPI Ubaldo M. Córdova-Figueroa (UPRM); \$15,000 (funding remains in PSU); September 1, 2024 to August 31, 2025. (Awarded)
28. Department of Energy – BOTTLE: Development of catalytic strategies for the production of monomer building blocks; 10/01/2024-09/30/2026; \$400,000/2-years. YPagan (PI – Awarded)

#### Publications Submitted to Peer-reviewed Journals:

1. Lin, S.; Liu, B.; Wang, Y.; Zhao, Y.; Hernández-Maldonado, A.J.; Chen, Z. Rational Design of Zeolites to Remove Siloxanes with High Adsorption Loading and Enhanced Adsorption Energy. *Appl. Surf. Sci.* **2024**, revision submitted.
2. From Isolation to Detection, Advancing Insights into Endothelial Matrix-Bound Vesicles. *Extracellular Vesicle Journal*, Dr. C. Mora, Under Revision
3. Carlos Barreto and Maribella Domenech; **"Integrin Stimulation by Collagen I at the Progenitor Stage Accelerates Maturation of Human iPSC-Derived Cardiomyocytes"**. Submitted – In peer review
1. Raúl S. Rangel-Gil, Juan M. Nasrala-Álvarez, Rodolfo J. Romañach, Rafael Méndez. Blend uniformity monitoring in a continuous manufacturing mixing process for a low-dosage formulation using a stream sampler and near infrared spectroscopy Submitted in April 2024 to International Journal of Pharmaceutics.
2. Aristizabal-González, C.; Muñoz-Senmache, J.C.; Prerna; Siepmann, J.I.; Tsapatsis, M.; Hernández-Maldonado, A.J. "Ammonia Adsorption at High Temperature and Pressure using Sodium Containing Aluminosilicates: Selectivity over Nitrogen and Multicycle Working Capacities." *Ind. Eng. Chem. Res.* **2024**, submitted.
3. Kang, N.; Muñoz-Senmache, J.C.; Prerna; Gao, Z.R.; Aristizabal-González, C.; Prelesnik, J.; Liu, H.-F.; Ashtiani, P.H.; Hadi, R.P.; Wang, C.; Bukowski, B.C.; Hernández-Maldonado, A.J.; Siepmann, J.I.; Tsapatsis, M. High Temperature and Pressure Pure-Silica Zeolite Ammonia Adsorbents and Their Use in Adsorption-Enhanced Catalytic Reactors. *Angew. Chem.* **2024**, submitted.
4. Aristizabal-González, C.; Mullangi, D.; Muñoz-Senmache, J.C.; Prelesnik, J.; Prerna; Hernández-Maldonado, A.J.; Siepmann, J.I.; Tsapatsis, M. A Review of Ammonia (NH<sub>3</sub>) Adsorption in Porous Solids. *Chem. Rev.* **2024**, submitted.
5. Lin, S.; Liu, B.; Wang, Y.; Zhao, Y.; Hernández-Maldonado, A.J.; Chen, Z. Rational Design of Zeolites to Remove Siloxanes with High Adsorption Loading and Enhanced Adsorption Energy. *ACS Omega* **2024**, submitted.
6. Carlos Barreto and Maribella Domenech; **"Integrin Stimulation by Collagen I at the Progenitor Stage Accelerates Maturation of Human iPSC-Derived Cardiomyocytes"**. Submitted – In peer review
7. Juan M. Nasrala-Álvarez, Dhavalkumar Patel, Carlos Flores, Rodolfo J. Romañach, Rafael Méndez. Effects of the operating parameters for a high API concentration continuous mixing process feasibility study. Submitted in September 2024 to the International Journal of Pharmaceutics.
8. F. Cifuentes-Urtubey, P. A. Baldaguez Medina, J. E. Lorenzo, N. Mamaril, (2025, February) Empowering Hispanic Engineering Students for Success in Graduate Education with Hybrid Mentorship, 2025 Collaborative Network for Engineering & Computing Diversity (CoNECD), San Antonio, TX.
9. *Kinetics of Liquid Phase Glycerol Hydrodeoxygenation over Molybdenum Carbide Powder Catalyst*. Ammal, Salai; Albarracin-Suazo, Sandra; Lin, Zhexi; Chen, Jingguang; Pagán-Torres, Yomaira\*; Heyden, Andreas; *ACS Catalysis*, Under review. (Impact factor: 11.3)

#### Publications Approved in Peer-reviewed Journals:

- o Book: Monocytes and Macrophages in Development, Regeneration, and Disease. DOI:10.1007/978-3-031-65944-7 Chapter Title: Macrophages and the Extracellular Matrix.
- o J. C. Rivera-Díaz and D. Suleiman. "Permeation of Urea and Water through Sulfonated Poly(styrene-isobutylene-styrene) Membranes with Counterion Substitution." *Journal of Applied Polymer Science*, **2024**, e55256; <https://doi.org/10.1002/app.55256>
- o G. Rivera-Ramos and D. Suleiman. "Sulfonated Poly(arylene ether sulfone) and Sulfonated Poly(arylene ether ketone) for Fuel Cell Applications." *Journal of Applied Polymer Science*, **2024**, e55027; <https://doi.org/10.1002/app.55156>
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- o Dhaval Kumar Patel, Rafael Méndez, Rodolfo J. Romañach, Cleaning of Direct Compression Continuous Manufacturing Equipment through displacement of API residues by excipients. *International Journal of Pharmaceutics* **652** (2024) 123849.
- o Raúl S. Rangel-Gil, Juan M. Nasrala-Álvarez, Rodolfo J. Romañach, Rafael Méndez. Blend uniformity monitoring in a continuous manufacturing mixing process for a low-dosage formulation using a stream sampler and near infrared spectroscopy Submitted in April 2024 to International Journal of Pharmaceutics **661** (2024)124478.
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- o Bhattachari, Mohan; Shweta; Ashie, Moses; Guddehalli Chandrappa, Shivaraju; Ale Magar, Birendra; Bastakoti, Bishnu; Córdova-Figueroa, Ubaldo; Katiyar, Ram; Weiner, Brad; Morell, Gerardo, *Unveiling Potential of Gallium Ferrite (GaFeO<sub>3</sub>) as an Anode Material for Lithium-Ion Batteries*, *ACS Omega* (Accepted – Aug 28, 2024)
- o Realizing synergy between Cu, Ga, and Zr for selective CO<sub>2</sub> hydrogenation to methanol. Abdullah J Al Abdulghani, Edgar E Turizo-Pinilla, Maria J Fabregas-Angulo, Ryan H Hagmann, Faysal Ibrahim, Jacob H Jansen, Theodore O Agbi, Samiha Bhat, Miguel Sepúlveda-Pagán, Morgan O Kraimer, Collin M Queen, Zhuoran Sun, Eranda Nikolla, Yomaira J Pagán-Torres\*, and Ive Hermans\*, *Applied Catalysis B: Environment and Energy*, **355**, 15 October 2024, 124198. (Impact factor: 20.2)
- o Effects of Catalyst Morphology on Oxygen Defects at Ni-CeO<sub>2</sub> Interfaces for CO<sub>2</sub> Methanation. Samiha Bhat, Miguel Sepúlveda-Pagán, Eranda Nikolla\* and Yomaira J. Pagán-Torres\*, *Catal. Sci. Technol.*, **2024**, **14**, 3364-3373. (Impact factor: 4.4)

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- G. Rivera-Ramos and D. Suleiman. "Sulfonated Poly(arylene ether sulfone) and Sulfonated Poly(arylene ether ketone) for Fuel Cell Applications." *Journal of Applied Polymer Science*, 2024, e55027; <https://doi.org/10.1002/app.55156>
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- Sridhar, L. N., Bifurcation Analysis and Multiobjective Nonlinear Model Predictive Control Of a Climate Dynamic Model Chemical Engineering: An International Journal (CEIJ), Vol. 1, No.2, 2024 pages 11-21
- Sridhar LN. Bifurcation Analysis and Multiobjective Nonlinear Model Predictive Control of Drug Addiction Models. *J Cardiovasc Med Cardiol.* 2024;11(4):096- 102. Available from: <https://dx.doi.org/10.17352/2455-2976.000215>
- Sridhar LN. Bifurcation Analysis and Nonlinear Model Predictive Control of the Tri-Trophic Food Chain Model. *Austin Chem Eng.* 2024; 11(1): 1111.
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#### Presentations:

1. "Detection of endothelial markers in Matrix-bound vesicles" Poster CMBE-BMES January L Rivera
2. "Matrix-Bound Vesicles as Tissue-specific Extracellular Vesicles Models for Biosensor Development" Poster, ENGICHEM, Apr-24, S. Ayus, C. Mora
3. Cell Manufacturing: Capturing Metabolites as Predictive Tool for Production Yield, Poster, ENGICHEM, Apr-24, J. Jiménez, C. Mora
4. Harnessing Therapeutic Potential By Evaluating Antibacterial Properties Using Biomolecules From The Extracellular Matrix, Poster, ENGICHEM, Apr-24, M. Buendia, C. Mora
5. Advancing Tissue-Specific ECM: Standardized Derivation and Electrochemical Sensing of Biomolecules Guest Speaker, Seminar. UPRMedical, Science, May-24, C Mora
6. Oñate-Socarras, M. K.; Piñeres-Quñones, O.H.; Lynn, D.M.; Acevedo-Velez, C. "Pickering Liquid Crystal Emulsions with Enhanced Sensitivity to Aqueous Analytes". *ACS Spring 2024 National Meeting*, March 2024, New Orleans, LA. Poster Presentation.
7. Oñate-Socarras, M. K.; Piñeres-Quñones, O.H.; Acevedo-Velez, C. "Liquid Crystal Droplet-Based Biosensors for Cell Manufacturing Processes". *NSF CMat Site Visit*, Atlanta, GA, April 2024. Poster Presentation.
8. Acevedo-Velez, C. "Introduction to ENGICHEM: My Journey Through Graduate School, Chemical Industry, and Academia". ENGICHEM Symposium, Mayagüez, PR. April 2024. *Invited Oral Presentation*.
9. Quñones-Meléndez, D.; Piñeres-Quñones, O.H.; Rodríguez-Méndez, S.; Caraballo Soto, K.N.; Nieves-Cortés, Y.L.; Rodríguez-Otero, M.R.; Lynn, D.M.; Acevedo-Vélez, C. "Effect of Surfactant Headgroup on the Interfacial Tension of Thermotropic Liquid Crystals". ENGICHEM Symposium, Mayagüez, PR. April 2024. Poster Presentation.
10. Oñate-Socarras, M. K.; Piñeres-Quñones, O.H.; Acevedo-Velez, C. "Liquid Crystal Droplet-Based Biosensors for Cell Manufacturing Processes". ENGICHEM Symposium, Mayagüez, PR. April 2024. Poster Presentation.
11. Piñeres-Quñones, O.H.; Oñate-Socarras, M. K.; Lynn, D.M.; Acevedo-Vélez, C. "Pickering Emulsions of Thermotropic Liquid Crystals Stabilized by Amphiphilic Gold Nanoparticles". ENGICHEM Symposium, Mayagüez, PR. April 2024. Poster Presentation.
12. Quñones-Meléndez, D.; Piñeres-Quñones, O.H.; Rodríguez-Méndez, S.; Caraballo Soto, K.N.; Nieves-Cortés, Y.L.; Rodríguez-Otero, M.R.; Lynn, D.M.; Acevedo-Vélez, C. "Effect of Surfactant Headgroup on the Interfacial Tension of Thermotropic Liquid Crystals". 2024 Annual Symposium of the Research Academy, May 2024, Mayagüez, PR. Poster Presentation.
13. Piñeres-Quñones, O.H.; Oñate-Socarras, M. K.; Lynn, D.M.; Acevedo-Vélez, C. "Thermotropic Liquid Crystal Emulsions with Long-term Colloidal Stability and Enhanced Sensitivity for Detection of Amphiphilic Analytes". 2024 Annual Symposium of the Research Academy, May 2024, Mayagüez, PR. Poster Presentation.
14. Acevedo-Velez, C. "Liquid Crystal Emulsions Stabilized by Nanoparticles as Platforms for Biomolecular Sensing". UW MRSEC REU Seminar Series, Madison, WI. *Invited Oral Presentation*.
15. K. Hernández, B. Ayala, E. Pérez, V. Psarras, J. Rivera, and D. Suleiman. "Thermodynamics of Polymer Swelling: A Pathway towards Materials Innovation" 2024 Chemical Engineering Symposium, University of Puerto Rico, Mayaguez, PR, April, 2024.
16. W. Rodríguez, J. Guerrero, J. Rivera, and D. Suleiman. "A Study of Polymer Membranes and Draw Solution Concentration in a Forward Osmosis Process towards the Purification of Water from an Urea Solution" 2024 Chemical Engineering Symposium, University of Puerto Rico, Mayaguez, PR, April, 2024.
17. J. Rivera and D. Suleiman. "Forward Osmosis Process towards the Purification of Water from an Urea Solution" 2024 Chemical Engineering Symposium, University of Puerto Rico, Mayaguez, PR, April, 2024.



18. A. Montañó and D. Suleiman. "Development of Organic Photovoltaic Devices for Wearable Technologies Using Novel Polymer Donors and Small Molecule Acceptors" 2024 Chemical Engineering Symposium, University of Puerto Rico, Mayaguez, PR, April, 2024.
19. R. Feliciano Crespo, G. Ramos, K. Echevarria, W. García, P. Resto, and D. Suleiman. "Cardiac Troponin I Detection Using Screen Printed Electrodes modified with Sulfonated Poly(styrene-Isobutylene-Styrene)." 2024 ACS Spring Meeting, New Orleans, LA, March, 2024.
20. CMat Site Visit, Atlanta, GA, Apr 2024, M. Torres
21. Invited Speaker, Tailored synthetic hydrogels as substrates for cell culture, BMES CMBE Conference, San Juan, PR, January 2024, Torres-Lugo, M.
22. Characterization of Microbial Synthesized Selenium Nanoparticles for Biomedical Applications. Abdiel Oquendo, Magda Latorre Esteves. JTM/PRISM UPR Aguadilla, April 20, 2024
23. Effect of Microgravity on Pathogenic Phenotype of *S. cerevisiae* and Zn Nanoparticle Toxicity. Julio Acevedo, Cacimar Ramos, Magda Latorre Esteves. JTM/PRISM UPR Aguadilla, April 20, 2024
24. Development of Biopolymeric Nanocomposites for the removal and detection of caffeine ground waters. Diego Palomino, O. Marcelo Suarez, Magda Latorre Esteves. JTM/PRISM UPR Aguadilla, April 20, 2024
25. Maribella Domenech "Deciphering Biphasic responses to SHH pathway inhibition in breast cancer" AACR 2024 Annual Conference, San Diego Convention Center, CA. April 7th, 2024.
26. Maribella Domenech "Collagen-based culture technologies for tumor biology and stem cell manufacture applications", invited speaker, Seminar-UF-Gainesville, Florida. April 2, 2024.
27. Maribella Domenech, "Innovation in cellular technologies", invited speaker, ENGICHEM, Chapel Amphitheater, UPRM, April 19<sup>th</sup>, 2024.
28. Antibiofilm potential of repurposed drugs vortioxetine and zuclopentixol against biofilm cultures of *Candida spp.* P. Ortiz undergraduate students, posters at the ENGICHEM symposium held at the RUM on April 19, 2024
29. Unraveling biomacromolecules for polymicrobial interactions with *Candida spp.* upon exposure to cross-linked type 1 collagen, P. Ortiz undergraduate students, posters at the ENGICHEM symposium held at the RUM on April 19, 2024
30. Antibiofilm potential of repurposed drugs vortioxetine and zuclopentixol against biofilm cultures of *Candida spp.* P. Ortiz undergraduate students, presented orally at the Puerto Rico Louis Stokes Alliance for Minority Participation Junior Technical Meeting, held on April 20, 2024 at the UPR-Aguadilla.
31. Unraveling biomacromolecules for polymicrobial interactions with *Candida spp.* upon exposure to cross-linked type 1 collagen, P. Ortiz undergraduate students presented orally at the Puerto Rico Louis Stokes Alliance for Minority Participation Junior Technical Meeting, held on April 20, 2024 at the UPR-Aguadilla.
32. PAT Implementation in Continuous Manufacturing Using A Stream Sampler & SynTQ Data Management System, Dhaval S. Patel, Rafael Mendez, Rodolfo J Romañach. IFPAC Summit SJ 2024
33. Juan M Nasralla Álvarez, Rodolfo J. Romañach, Rafael Méndez, A stream sampler for process analytical technology of powder mixtures. The 11<sup>th</sup> World Conference of Sampling and Blending South Africa 2024.
34. 2024 ACS Spring Annual Meeting, "Probing oxygen vacancies in inverted Ni-CeO<sub>2</sub> catalysts for enhanced CO<sub>2</sub> methanation", March 2024, New Orleans, LA. Yomaira Pagan-Torres\*, Eranda Nikolla, Miguel Sepulveda and Samiha Bhat (Oral Presentation).
35. BOTTLE All Hands Meeting- "UPRM Pre-Engineering in Box: Plastics Upcycling – IMPACT", National Renewable Energy Laboratory (NREL), Golden Colorado, June 2024.
36. University of Wisconsin-Madison-Department of Chemical Engineering, University of Wisconsin Visiting Committee Member, Madison, WI, 2024.
37. 6 de diciembre de 2024 – Presentación "High Temperature and Pressure Pure-Silica Zeolite Ammonia Adsorbents and Their Use in Adsorption-Enhanced Catalytic Reactors." N. Kang, J.C. Muñoz-Senmache, Prerna, Z.R. Gao, C. Aristizabal-González, J. Prelesnik, H.-F. Liu, P.H. Ashtiani, R.P. Hadi, C. Wang, B.C. Bukowski, A.J. Hernández-Maldonado, J.I. Siepmann, M. Tsapatsis. 28<sup>th</sup> Annual Meeting of the Northeast Corridor Zeolite Association, Villanova University Villanova, PA.
38. 28 de octubre de 2024 – Presentación "Adsorption of Ammonia Onto Zeolites with Sodium Counterions at High Pressure and Temperature." J.C. Muñoz-Senmache, C. Aristizabal-Gonzalez, and A.J. Hernandez-Maldonado, 2024 American Institute of Chemical Engineers (AIChE) Annual Meeting, San Diego, CA.
39. 30 de octubre de 2024 – Presentación "Exploring in-Situ Adsorption for Ammonia Separation: Insights from High-Pressure and High-Temperature Conditions." C. Aristizabal-Gonzalez, J.C. Muñoz-Senmache, and A.J. Hernandez-Maldonado, 2024 American Institute of Chemical Engineers (AIChE) Annual Meeting, San Diego, CA.
40. J. Rivera-Díaz and D. Suleiman. "Water Separation Using Polymeric Membranes." Oral Presentation at the 2024 NASA EPSCoR Meeting, Mayaguez, PR, December, 2024.
41. A. Montano-Herrazo, H. Cubillán, and D. Suleiman. "I-Silico Design and Predictive Modeling for Organic Photovoltaic Devices." Poster Presentation at the 2024 AIChE National Meeting, San Diego, CA October, 2024.
42. J. Rivera-Díaz and D. Suleiman. "Urea-Water Separation: The Role of Ionic Polymer Membranes in Selectivity and Performance." Oral Presentation at the 2024 AIChE National Meeting, San Diego, CA October, 2024.
43. R. Feliciano-Crespo, Karla Echeverría, Adriana Miesses Sánchez, Pedro Resto Irizarry and D. Suleiman. "Electrochemical Cardiac Troponin I Biosensor Based on Gold Screen-Printed Electrodes Modified with Sulfonated Poly(styrene-isobutylene-styrene)." NSF EPSCoR Conference, Nebraska, October, 2024.
44. A. Montano-Herrazo, H. Cubillán, and D. Suleiman. "I-Silico Design and Predictive Modeling for Organic Photovoltaic Devices." NSF EPSCoR Conference, Nebraska, October, 2024.
45. Maribella Domenech "Advancing the understanding of SHH pathway activity in tumor responses and tissue regeneration", invited speaker, 5<sup>th</sup> Puerto Rico Cancer research meeting, Embassy Suites Hotel, San Juan, PR. October 4th, 2024.
46. Maribella Domenech "Harnessing Sonic Hedgehog (SHH) Signaling Insights to Engineer Culture Platforms for Cancer Research and Stem Cell Manufacturing", invited speaker, Biology Department Seminar, Amphitheater of the Julio Garcia Diaz Building, UPR-Rio Piedras. October 29, 2024.
47. Maribella Domenech, "Advanced Biomaterials for Sustainable Cell Manufacturing in Space" invited speaker and panelist, ISS-National Lab workshop and American society for Gravitational science research (ASGSR) 2024, December 3, 2024.
48. U. Cordova, Invited speaker, University of Notre Dame, South Bend, IN (October 14 – 16, 2024)
49. U. Cordova, Invited speaker, Penn State University, State College, PA (November 10–14, 2024)
50. Development of a Screen Printed Electrode to Detect Extracellular Vesicles in Saliva" Poster, 7th TERM World Congress 2024 Jun-24, W Meza
51. "Evaluating the Matrix-Bound Vesicles Extraction Process from Blood-Rich Tissue vs Cartilage Tissue" Poster, 7th TERMIS World Congress 2024 Jun-24, M. Buendia
52. "Matrix-Bound Vesicles as Tissue-specific Extracellular Vesicles Models for Biosensor Development" Poster, 7th TERMIS World Congress 2024 Jun-24, S. Ayus
53. Mesenchymal Stem Cell Manufacturing: Capturing Extracellular Vesicles as Predictive Tool for Production Yield Poster, 7th TERMIS World Congress 2024, Jun-24, J. Jiménez



54. Advancing Tissue-Specific ECM: Standardized Derivation and Electrochemical Sensing of Biomolecules Guest Speaker, 2024 Bioengineering Symposium, Univ of New Hampshire, May-24, C Mora
55. Advancing Tissue-Specific ECM: Standardized Derivation and Electrochemical Sensing of Biomolecules Guest Speaker PNNL, Jun-24, C Mora
56. Decellularization Dynamics: A Mathematical Approach to DNA Quantification in Soft Tissue Decellularization Poster, BMES, Oct-24, Shivani Gera
57. Development of a Mathematical Model to Improve Decellularization Bioreactor Efficiency, Poster, BMES, Oct-24, Shelby White
58. Oñate-Socarraz, M. K.; Piñeres-Quiñones, O.H.; Lynn, D.M.; Acevedo-Velez, C. "Pickering Emulsions of Thermotropic Liquid Crystals for Sensing Phospholipid Membranes". *2024 AIChE Annual Meeting*, San Diego, CA. November 2024. Oral Presentation.
59. Piñeres-Quiñones, O.H.; Acevedo-Velez, C. "Development of a biosensing platform based on nanoparticle-stabilized liquid crystal droplets for detection of extracellular vesicles derived from human cells". *2024 EPSCoR National Conference*, Omaha, NE. October 2024. Poster Presentation.
60. Maza-Pautt, Y.M.; Acevedo-Velez, C. "Rheological Characterization of Liquid Crystal Emulsions Stabilized by Nanoparticle-Surfactant Complexes". *2024 MRS Fall Meeting*, Boston, MA. December 2024. Poster Presentation.
61. Piñeres-Quiñones, O.H.; Oñate-Socarraz, M. K.; Lynn, D.M.; Acevedo-Velez, C. "Thermotropic Liquid Crystal Emulsions with Long-Term Colloidal Stability and Enhanced Sensitivity for Detection of Amphiphilic Analytes". *2024 MRS Fall Meeting*, Boston, MA. December 2024. Poster Presentation.
62. Quiñones-Meléndez, D.A.; Rodríguez-Méndez, S.; Piñeres-Quiñones, O.H.; Caraballo-Soto, K.; Nieves-Cortés, Y.L.; Rodríguez-Otero, M.; Lynn, D.M.; Acevedo-Velez, C. "Effect of Surfactant Headgroup on the Interfacial Tension of a Thermotropic Liquid Crystal". *2024 MRS Fall Meeting*, Boston, MA. December 2024. Poster Presentation.
63. Development of Biopolymeric Nanocomposites for the Removal of Caffeine in Groundwaters. Universidad Interamericana Recinto Metropolitano. Poster. AAAS Caribbean Division Annual Meeting Honoring Women in Science. October 26, 2024. Diego Palomino, Magda Latorre.
64. Characterization of Microbial Biosynthesized Selenium Nanoparticles for Biomedical Applications. Poster. AAAS Caribbean Division Annual Meeting Honoring Women in Science. October 26, 2024. Abdiel Oquendo, Magda Latorre
65. 2024 AIChE Annual Meeting, "*Engineering Bifunctional Catalytic Materials for Selective Synthesis of Biobased Chemicals*", Yomaira Pagan-Torres (Oral Presentation). 2024 American Institute of Chemical Engineers (AIChE) Mid-Career Researcher Symposium in Honor of Yomaira Pagan-Torres, San Diego, CA, October 2024.
66. 2024 MRS Fall Annual Meeting, "Ternary Cu-Ga-Zr Catalysts for CO<sub>2</sub> Hydrogenation to Methanol", Paola Fargas, María José Fábregas-Angulo, Abdullah Al Abdulghani, Ryan Hokulea Hagmann, Miguel Sepúlveda, Samiha Bhat, Eranda Nikolla, Ive Hermans, and Yomaira Pagán-Torres, Poster, Boston, MA, December 2024.
67. 2024 MRS Fall Annual Meeting, "Synergy between Ga and Zr in Cu-based catalysts for CO<sub>2</sub> hydrogenation to methanol", María José Fábregas-Angulo, Abdullah Al Abdulghani, Ryan Hokulea Hagmann, Miguel Sepúlveda, Samiha Bhat, Eranda Nikolla, Ive Hermans, and Yomaira Pagán-Torres, Poster, Boston, MA, December 2024.

#### Patents

- Carlos Barreto and Maribella Domenech / U.S. Patent Application 63/658,566 / 24-016-UPR / A METHOD TO MATURE HUMAN-INDUCED PLURIPOTENT STEM CELL-DERIVED CARDIOMYOCYTES/ 71900-410960
- Miosotis Acevedo and Maribella Domenech /24-035-DISC-UPR BioExtend Technology for cell culture and 3D bioprinting applications
- Ermides Chavez, Yomaira Pagan, Liz Diaz, Composite electrodes with carrageenan for fuel cells, **Patent Application 63/654,687**, filed May 31, 2024.

#### Invention Disclosure:

1. Invention Id: 23-031-DISC-UPR, Title: Sulfonated poly(arylene ether sulfone) and sulfonated poly(arylene ether ketone) membranes for improved fuel cell performance, D Suleiman.

#### Department of Engineering Sciences and Materials

The Department has a multidisciplinary faculty engaged in teaching foundational courses in engineering science and in raising external funds through research in various areas. Our faculty diversity has allowed us to be the second engineering department with the highest indirect cost capture and the fourth to send proposals.

By easing research initiatives, through the refurbishment of laboratory spaces and the assignment of graduate students, the department's faculty has evolved in this area. The sponsoring agencies of our active projects are NSF, NASA, NOAA, NIH, DoE, DHS, USDA, DRN, AAA, Trust, among others. The research areas the department is focused on are Materials Science, Fluid Mechanics, Bioengineering, Oceanographic Engineering, Applied Mechanics, Structures, Engineering Education and recently Sustainability.

Finally, we have researchers with active proposals, one of whom received institutional incentive in both semesters for his excellent performance and for their successes in attracting outside funds bought their time for the full year.

#### Department of Industrial Engineering

##### RESEARCH

Active Research and Service Awards: During this academic year, our faculty participated in externally funded projects from agencies including:

1. 2022-2027 NSF ERC: Cell Manufacturing Technologies (CMaT) UPRM Subaward PI: M Torres. One Bioengineering doctoral student under my supervision was funded through this grant, Ms. Alibeth Luna. Three additional undergraduate students collaborated in this effort.
2. 2021-2026 NSF BII: Emergent Mechanisms in Biology of Robustness Integration, and Organization UPRM Subaward PI: M Cabrera. One Bioengineering postdoctoral researcher under my co-supervision was funded through this grant, Dr. Deiver Suárez. Four undergraduate students also collaborated in this effort.
3. Saltchuk Resources: Center of Excellence for Transportation and Logistics, January 2025 – December 2034, Dr. Héctor Carlo-PI, \$1M per year/10 years.
4. DoD: SBIR Phase 2 Subaward: Scheduling Agent for the Air and Load Plan Scheduler Multi-Agent System (ALPSMAS), February 2024 – February 2025, Co-PI, \$184,000 (Dr. Roxana Aparicio, PI), Department of Defense, Award N68335-23-C-0017.

5. OSHA-Program Susan Harwood "Heat Stress in the Workplace" Training for High Risk and Hard-to-Reach Workers, Dr. Samuel Bonet (PI) and Dr. Viviana Cesaní (CoPI), Department of Labor Award (2024-2025), Grant 24F60SH000108-01-00, \$154,094.

#### PUBLICATIONS & PRESENTATIONS

- Carlo, H.J., Blanco-Quintana, A.F.\*\*, Robles-Vega, F.E.\*Nieves-Báez, J.E.\* (2025) Unidimensional Puzzle-Based Storage Systems. Logistics Research, Accepted for Publication. DOI: 10.1108/LORE-01-2025-0006.
- Rodríguez-Roman, D., Carlo, H.J., Sperling, J., Duval, A., Leonicio-Cabán, R.E.\*, López del Puerto, C. (2024) Optimizing the Location and Configuration of Disaster Resilience Hubs Under Transportation and Electric Power Network Failures. Transportation Research Interdisciplinary Perspectives, 24: Article 101079. DOI: 10.1016/j.trip.2024.101079.
- Ocana-Colón, A.\*, Carlo, H.J., Rodríguez-Román, D., Stochastic Capacitated Discrete Facility Location Problem for Energy-Resilience Hubs, 2025 Transportation Research Board, January 2025, Washington DC.
- Demel-Pacheco, A.\*, Cruz-Muñiz, J.Y.\*, Carlo, H.J., Rodríguez-Román, D., Parking Availability Real-time Knowledge System (PARKS), 2025 Transportation Research Board, January 2025, Washington DC.
- Perez Romero, T.\*\*, Carlo, H.J., Rodríguez-Román, D., An Exact Decomposition Algorithm for the Integrated Ride-sharing and Parking Allocation System, 2025 Transportation Research Board, January 2025, Washington DC.
- E Nazario, A Corujo, J Borrero, Y González, G Ortiz, M Cabrera, CE Isaza, Towards an Individual Decision-Making Framework to Achieve Mitigation of Climate Change Effects with a Local Perspective, Aceptada para publicación en Sapiencia, Volumen 9, 2025
- IY Narváez-Bandera, D Suárez-Gómez, CD Castro-Rivera, A Camasta-Beníquez, M Durán-Quintana, M Cabrera-Ríos, CE Isaza, Hepatitis C virus infection and Parkinson's disease: insights from a joint sex-stratified BioOptimatics meta-analysis, Nature Scientific Reports (2024) 14, 22838 <https://doi.org/10.1038/s41598-024-73535-0>
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- C Castro, D Suárez-Gómez, M Cabrera-Ríos, CE Isaza, Comparing Systemic Lupus Erythematosus with a Normal Immune Response through BioOptimatics Methods, 2025 UPRM Biology Research Symposium, Mayagüez PR, May 9th 2025
- C Martin-Ortiz, M Babilonia, M Cabrera-Ríos, CE Isaza, Network Comparison in Biological Analytics, 2025 UPRM Biology Research Symposium, Mayagüez PR, May 9th 2025
- J Santiago, N Matos, C Soto, E Barreras, D Suárez, AS Cabrera-Isaza, M Cabrera-Ríos, CE Isaza, Class Forecasting Method – Dengue Cases in Puerto Rico, 2025 UPRM Biology Research Symposium, Mayagüez PR, May 9th 2025
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- N Delgado, M Cabrera-Ríos, CE Isaza, The Analysis of Gene Expression Data by BioOptimatics to investigate the Association between Systemic Lupus Erythematosus and Viral Infections, 2025 UPRM Biology Research Symposium, Mayagüez PR, May 9th 2025
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- R Nazario, A Rivera, K Ríos, J Rivera, D Suárez-Gómez, AS Cabrera-Isaza M Cabrera-Ríos, CE Isaza, Class Forecasting Method Applications to Public Health: Diabetes Type 2, Respiratory Tuberculosis, Meningitis and Influenza, 2025 UPRM Biology Research Symposium, Mayagüez PR, May 9th 2025
- A Luna-Alvear, D Suárez-Gómez, G Bertran, M Cabrera-Ríos, CE Isaza, Comparative Analysis of Differentially Expressed Genes in Pancreatic Cancer with and without CAR T Cell Therapy, 2025 PRISM/JTM, Río Piedras PR, April 26th 2025
- K Ríos, A Rivera, A Fernández, N Andújar, R Nazario, J Rivera, D Suárez-Gómez, AS Cabrera-Isaza, M Cabrera-Ríos, CE Isaza, Class Forecasting Method Applications to Public Health: Heart Disease, Infant Mortality, Preterm Birth, and Suicide Rates, 2025 PRISM/JTM, Río Piedras PR, April 26th 2025
- S Ng, M Santaliz, A Borrero, CE Isaza, M Cabrera-Ríos, Innovative Repurposing of Tennis Balls for Eldercare and Environmental Control Educational Project: Reutilization of Tennis Balls, 2025 IGRA RUM Professional Conservatory, San German PR, April 26, 2025
- A Burgos-Esquilin, S Ufret-Estrada, C Castro-Rivera, F Claudio-García, N Delgado, M Cabrera-Ríos, CE Isaza, Multidimensional Insights into Puerto Rican Lupus Patients and their Quality of Life, 2025 14th The Alliance Scientific Day, San Juan PR, May 7th, 2025
- C Castro-Rivera, D Suárez-Gómez, A Hernández, M Cabrera-Ríos, CE Isaza, Comparing Systemic Lupus Erythematosus with a Normal Immune Response through BioOptimatics Methods, 2025 14th The Alliance Scientific Day, San Juan PR, May 7th, 2025
- C Castro-Rivera, D Suárez-Gómez, I Narváez-Bandera, A Luna-Alvear, A Camasta-Beníquez, M Cabrera-Ríos, CE Isaza, Novel BioOptimatics used to Identify Gene Expression Changes between Autism Spectrum Disorder and Schizophrenia, San Juan PR, April 30th 2025
- G Bertran, A Luna-Alvear, M Cabrera-Ríos, CE Isaza, Using BioOptimatics for Data Analysis, 2025 Biotech Engineering Society Seminar, Mayagüez PR, April 24th 2025
- A Rodríguez, A Luna-Alvear, M Cabrera-Ríos, CE Isaza, BioOptimatics: Gene Analysis between Alzheimer's Disease and Depression, 2025 CROEM Student Research Expo, Mayagüez PR, April 25th 2025
- D Ramos, A Luna-Alvear, M Cabrera-Ríos, CE Isaza, Interaction of Glucagon-like Peptide 1 Receptor (GLP-IR) with Biomarkers of Type II Diabetes Mellitus and Diabetic Nephropathy, 2025 CROEM Student Research Expo, Mayagüez PR, April 25th 2025

- D Suárez-Gómez, E Barreras, N Matos, J Santiago, C Soto, AS Cabrera-Isaza, M Cabrera-Ríos, Correlation between the rate of new cases of laryngeal cancer per year and percentage of smokers per year in the US using the time class forecasting method, 2025 XXII PUCPR Scientific Research Symposium, Ponce PR, April 25th 2025
- A Luna-Alvear, M Cabrera-Ríos, CE Isaza, Differential Gene Expression as a Predictor of CAR T Cell Therapy Effectiveness: A BioOptimatics Approach, 2025 UPRM Symposium of the Research Academy, Mayaguez PR, April 24th, 2025
- C Martín-Ortiz, M Cabrera-Ríos, CE Isaza, Network Comparison in Biological Analytics: Alzheimer's Disease, 2025 UPRM Symposium of the Research Academy, Mayaguez PR, April 24th, 2025
- M Cabrera-Ríos, Diseño Experimental y sus Aplicaciones, Universidad Iberoamericana, Ciudad de México MX, April 8th, 2025
- M Cabrera-Ríos, Ingeniería Industrial y sus Aportes Transdisciplinarios, Universidad Iberoamericana, Ciudad de México MX, April 7th, 2025
- M Cabrera-Ríos, CE Isaza, Research at The Applied Optimization Group, 2025 UPRM SACNAS Week, Mayagüez PR, February 4th, 2025
- M Cabrera-Ríos, Design of Experiments, NSF CMAT Summer Training, Atlanta GA, June 28, 2024 (Online)
- M Cabrera-Ríos, ¿Cómo trabajar de manera interdisciplinaria?, Bienal Interdisciplinaria UABC 2024, June 12th, 2024 (Online)
- M Cabrera-Ríos, Statement of Purpose/Intention Workshop, PRLSAMP Seminar, Mayagüez PR, November 14th, 2024
- Acuña, E.; Aparicio, R. Using Visualization to Evaluate the Performance of Algorithms for Multivariate Time Series Classification. *Data* 2025, 10, 58. <https://doi.org/10.3390/data10050058>

#### Department of Electrical and Computer Engineering Most relevant publications.

- David Osorio García, Agustín Irizarry Rivera. "Time-domain stability analysis of mixed generation electric power systems subject to severe disturbance: test of control parameter adjustments for increased renewable energy penetration". Under review, *Electric Power Systems Research*, June 2025.
- Anny Huamán-Rivera, Agustín Irizarry-Rivera, R. Calloquispe-Huallpa. "Increasing Photovoltaic Hosting Capacity in Distribution Networks in Puerto Rico: Seasonal and Technical Characteristics Analysis and Solutions", Accepted for publication, *Energy Reports*, Elsevier, 2025.
- Carlos A. Peña-Becerra, Willian A. Pacheco-Cano, Daniel F. Aragones-Vargas, Agustín Irizarry-Rivera and Marcel Castro-Sitiriche "Barrio Level Assessment of Solar Rooftop Energy and Initial Insights into Energy Inequalities in Puerto Rico", *Solar* 2025, 5, 28.
- Fabio Andrade; Jesus D. Vasquez-Plaza; Adriana Luna; Marcel Castro-Sitiriche; Agustin Irizarry, "Microgrids for Resilience: Powering Puerto Rico's Future: The role of community microgrids in improving resiliency for Puerto Rico's remote areas", *IEEE Electrification Magazine*, Volume 13, Issue 2, pp 26-36, June 2025.
- Díaz, N.L., Díaz, J.L., García, Y.V., Luna, A.C. (2024). Cooperative and Transactive Integration of Multiple Microgrids. In: Shahnian, F., Guerrero, J.M. (eds) *Microgrids and Virtual Power Plants. Power Systems*. Springer, Singapore. [https://doi.org/10.1007/978-981-97-6623-9\\_15](https://doi.org/10.1007/978-981-97-6623-9_15)
- Jan L Diaz; Omar F Rodriguez; Guiselle A. Feo; Adriana C Luna; Fabio Andrade. Machine Learning Strategies Used in Power Grid Resilience. *Renewable and Sustainable Energy Reviews*. Submitted date: 12-30-2025.
- Jet tagging using Ricci curvature- journal paper under preparation by Diego Vasquez Jet tagging using interpretable deep learning network submitted to JINST journal by Jairo Orozco Jet image simulation using diffusion models submitted to *IEEE trans nuclear science* - Victor Diaz Hyperspectral image classification using S3CLLE-WGCN -paper revision under revision - journal *IEEE TGRS*.
- Adaptive Protection for Microgrids: University of Puerto Rico-Mayaguez Study, 52nd IEEE Photovoltaic Specialists Conference, 2024. Dr. Lionel Orama
- J.P. Claudio and R. Medina, "Modeling and Design of High Isolation Dual-Polarized Aperture-Coupled Microstrip Patch Antennas With Dual-Offset Feedlines *IEEE MTT-S Latin American Microwave Conference* - January 22-24, San Juan, PR
- J. E. Hernández, P. J. Martínez, E. A. Valentín, N. Álvarez, R. H. Medina, Study on Capacitors and Planar Spiral Inductors in Printed Circuit Board Technology for Their Applications on Microwave and RF Circuits , *IEEE MTT-S Latin American Microwave Conference*
- P. J. Martínez, J. E. Hernández, E. A. Valentín, N. Álvarez, R. H. Medina Application of Planar Inductors and Capacitors in Printed Circuit Board Technology - 90o Hybrid Coupler *IEEE MTT-S Latin American Conference*
- *IEEE APS-URSI Conference Ultra-Wideband Partial Ground Plane Metasurface Antenna for 5G Networks* (Submitted) Dibin Mary George
- *Journal of Electromagnetic Waves and Applications, Recent Advances in Tunable Antennas Using Phase Change Materials*
- *IEEE WAMICON, Ultra Wideband Microwave Imaging Antenna for early stage Alzheimer's detection*
- Subedi, S., Vasquez Plaza, J.D., Andrade, F., Rekabdarkolae, H.M., Fournery, R., Tonkoski, R., Hansen, T.M.: Aggregate data-driven dynamic modeling of active distribution networks with DERs for voltage stability studies. *IET Renew. Power Gener.* 18, 2261-2276 (2024). <https://doi.org/10.1049/rpg2.13063>
- O. F. Rodriguez-Martinez, Y. V. Garcia, M. P. Gomez, O. D. Garzon, A. B. Nassif and F. Andrade, "Vieques and Culebra Distribution Feeder State Estimation to Support a Microgrid Development," 2024 IEEE/PES Transmission and Distribution Conference and Exposition (T&D), Anaheim, CA, USA, 2024, pp. 1-5, doi: 10.1109/TD47997.2024.10556087.
- Diaz De Jesus, Armando; Hernandez Pagan, Nahomy; Cartagena Marrero, Giovanni; Merchan Rueda, Diego; Werres, Bernd; Traverso Avilés, Luis; Ortiz-Rivera, Eduardo; Aponte Roa, Diego; Lara, Raul; "Leveraging RFID Success Beyond Hazardous Material Inventory Management at a National Laboratory" *Journal: ACS Chemical Health & Safety*; Manuscript ID: hs-2024-00104s.R1 (Accepted on December 17, 2024) (Awarded as ACS Editor's Choice!)
- Zelada-Quiroz, Cindy M.; Ortiz-Rivera, Eduardo I.; Application of 3D Printing and Design in Healthcare: A Focus on Undergraduate Research to Attract Students to Bioengineering and Related Disciplines" 2024 IEEE Frontiers in Education (FIE), October 13-16, 2024 Washington DC, USA
- Castrodad, Juliana\*; López-Cardalda, Guillermo; Ortiz-Rivera, Eduardo I.; Undergraduate Research on Optimization to Learn the Minimization of Transmission Power Losses on DC Microgrids" 2024 IEEE Frontiers in Education (FIE), October 13-16, 2024 Washington DC, USA
- Akhtar, Zeeshan; Ortiz-Rivera, Eduardo I.; Colón- Grid-Forming Inverter: A Review and Educational Perspective 024 IEEE Frontiers in Education (FIE), October 13-16, 2024 Washington DC, USA

- Colón-González, Alanis\*; Ortiz-Rivera, Eduardo I.; Implementing Problem-Based and Experiential Learning for Undergraduate Students in Power Electronics Applied to Renewable Energy Education (FIE), October 13-16, 2024 Washington DC, USA
- Batista Alvarez, Natanael\*; Lopez-Cardalda, Guillermo; Ortiz-Rivera, Eduardo I.; ESSPI as a Tool for STEM Education in Energy Backup System Design 2024 IEEE Frontiers in Education (FIE), October 13-16, 2024 Washington DC, USA
- Moscoso, Javier\*; Burgos, Alexis\*; De Jesus, Miguel\*; Vazquez, Diego\*; Guadalupe, Leonardo\*; Otero, Jan\*; Gonzalez, Emmanuel\*; Olivieri, Ambar\*; Valentin, Amarylis\*; Ortiz-Rivera, Eduardo I.; Proyecto Luz Verde UPRM: Project-Based-Learning Education on Power and Energy using Off-Grid PV Systems" 52nd IEEE Photovoltaic Specialist Conference, June 10-15, 2024 Seattle, WA
- Akhtar, Zeeshan; Ortiz-Rivera, Eduardo I.; Darbali, Rachid; Control Strategy For Small Hydro, PV & Fuel-Cell Ortiz-Rivera, Eduardo I.; " 52nd IEEE Photovoltaic Specialist Conf., June 10-15, 2024 Seattle, WA
- Darbali, Rachid; Ortiz-Rivera, Eduardo I.; Implementation of an Analytical Active Power Curtailment Method for Photovoltaic System Applications" 52nd IEEE Photovoltaic Specialist Conf., June 10-15, 2024 Seattle, WA (Received the Best Poster Award Presentation!)
- Ortiz-Rivera, Eduardo I.; Lopez- How to Determine the Shunt Resistance and Series Resistance Using the Photovoltaic Exponential Model?" 52nd IEEE Photovoltaic Specialist Conf., June 10-15, 2024 Seattle, WA
- Lozano, Fernando; Orama, Lionel; Darbali, Rachid; Ortiz-Rivera, Eduardo I.; Adaptive Protection for UPRM Microgrid System" 52nd IEEE Photovoltaic Specialist Conf., June 10-15, 2024 Seattle, WA
- Larry Theran Suárez, R.A. Rodríguez Solís, "A Wideband Low Power Single-To-Differential GaAs LNA for mmWave Spectrum Monitoring Applications", accepted at 2025 IEEE MTT-S Latin America Microwave Conference on 22-24 January 2024, San Juan. PR
- Y. Rong, J. A. Sanchez-Perez. D. Silbernagel, A.A. Venkataramani, D. W. Bliss, "mmWave Imaging Enabled Multi-Site Respiratory Monitoring. " submitted to the 2025 IEEE International Radar Conference.
- A. Nawar, A. H. Gazi, M. Chan, J. A. Sanchez-Perez, F. N. Rahman, C. Ziegler, O. Daaboul, G. Haddad, O. A. Al-Abboud, H. Ahmed, J.D. Bremmer, A.Quyummi V. Vaccarino, O.T. Inan, and A.J. Shah, "Quantifying the Cardiovascular Response to Mental Stress using a Compact Multimodal Wearable Sensing Patch, "submitted to the ACM Health journal.
- MEBC Technical Report: A report was submitted to the Monaco Energy Boat Challenge in preparation for participating in the event on July 1, 2025.

### Proposals

1. DOE-High Interoperable Open-Source Electromagnetic Transient Simulator for Power Electronics-Dominated Grid (HiEMT) Concept Paper (Co.PI, Leader: ORNL)
2. NSF Engineering Research Center for Rural Habitation Upgrades to Bolster Adaptation and Resilience in Building Power, Infrastructure, and Education (RHUBARB PIE)- Pre-propuesta (Co.PI, Leader: UAF) Deploying Synchronized Measurement Technologies for Real-Time Situational Awareness and Control for a Flexible and Resilient Transmission Grid in Puerto Rico. Concept Paper (Co.PI, Leader: LUMA)
3. Submitted and approved proposal The Micromouse Robotic Project (\$5,000.00)
4. Submitted and Approved PROTHEX INNOVATIONS: DESIGN AND CONSTRUCTION OF A ROBOTIC HAND WITH 3D PRINTER AND SENSORS (\$5,000.00).
5. Submitted and approved proposal IAP –"Advancing Power Electronics Education through Real-Time Simulation and Control of Grid-Tied and Grid-Forming Inverters for Undergraduate Training \$5,000.00
6. Submitted and Approved PQ Equivalency Analysis of RLC Loads in AC System \$5,000.00.
7. A Multi-Frequency Electrical Bioimpedance Sensing Platform for Non-Invasive Pulmonary Monitoring Research at UPRM, UPR/IAP.
8. Equipment: MRI: Track 1 Acquisition of 3D Motion Capture Equipment to support research on wearable technologies and edge AI computing at UPRM, NSF.

### Most relevant Presentations

1. August 28, 2024 – A. Irizarry, "Suministro de electricidad en Puerto Rico: oportunidades y amenazas". Cámara de Comercio del Oeste de Puerto Rico, Mayagüez, Puerto Rico
2. Anny Huamán, Agustín Irizarry "Limits of PV Hosting Capacity Of Distribution Feeders in Puerto Rico", Vista Pública Virtual, caso NEPR-MI-2024-0005, Negociado de Energía de Puerto Rico, 2 de octubre 2024.
3. Conferences: Simposio Internacional de Microrredes, Universidad de Puerto Rico Mayagüez, December 3-5, 2024.
4. Presentation Panel "El Futuro de la Transformación Energética de Puerto Rico: Retos y beneficios de sistemas sobre techos versus fincas solares", October 17, 2024, Colegio de Arquitectos y Arquitectos Paisajistas de Puerto Rico, San Juan, Puerto Rico.

### Ongoing research and work projects 2024/2025

1. DOE-EpSCOR (Alaska): Development and validation of models to assess dynamic response of converter-dominated power systems across multiple spatiotemporal scales.
2. RISE-UP (NSF): "Building Capacity: A Collaborative Undergraduate STEM Program in Resilient and Sustainable Infrastructure."
3. STORM (NSF): Collaborative Research: RII Track-2 FEC: STORM: Data-Driven Approaches for Secure Electric Grids in Communities Disproportionately Impacted by Climate Change
4. DOE-ORNL: Resilient Operation of Networked Community Microgrids with High Solar Penetration
5. DOE-IREC: Puerto Rico Energy Resiliency Hubs
6. 2021 TI Program at the UPRM
7. CHRES, DOE/NNSA
8. Evaluation of Resilience Tools for the Puerto Rico Electric Grid Restoration. SNL
9. Oasis de Luz
10. Poder Solar Comunitario
11. Special Project - enlace comunitario en el área de Indieras de Maricao y Rubias de Yauco

12. CARSE: Center for Advanced Radio Sciences and Engineering
13. EPSCORT Extension 3: Dynamic modeling of converter-dominated power systems (en colaboración con Universidad de Alaska y Universidad de Dakota del Sur)
14. NSF-STTR Phase I – Hand-Held Induction Heaters for Pancreatic and Prostatic Cancer Treatment
15. Graph based deep learning architecture for modeling ecosystem dynamics integrating hyperspectral and remote sensing data over the Alaskan Boreal region
16. PARTNER: Innovating AI for efficient and insightful data transformations
17. Evaluation of Resilience Tools for the Puerto Rico Electric Grid Restoration. Develop at least one online workshop and module using an urban or rural case as an example based on the Microgrid Conceptual Design Guidebook (MCDG) and the Microgrid Design Toolkit (MDT)
18. UNIFI Grid-Forming-Inverters Consortium
19. Innovative Wide Area Sensing (IWAS) Mitigation Technologies For Countering Weapons of Mass Destructions.
20. SpectrumX An NSF Spectrum Innovation Center. Development of antennas for radio spectrum monitoring applications, and coexistence with passive receivers.
21. Development of broadband aperiodic phased arrays
22. Development of mm-wave SIW filters
23. UPRM's Solar Boat 2025: The Solar Splash Competition - mentoring for the interdisciplinary team of the UPRM Solar Boat.
24. DOE-HACEER(Utep): STORM (NSF): Collaborative Research: RII Track-2 FEC: STORM: Data-Driven Approaches for Secure Electric Grids in Communities Disproportionately Impacted by Climate Change.
25. DOE-ORNL Resilient Operation of Networked Community Microgrid with High Solar Penetration
26. DOE-IREC: Puerto Rico Energy Resiliency Hubs
27. Equitable Pathways
28. Graph based deep learning architecture for modeling ecosystem dynamics integrating hyperspectral and remote sensing data over the Alaskan Boreal region
29. PARTNER: Innovating AI for efficient and insightful data transformations
30. RII Track-2 FEC: STORM: Data-Driven Approaches for Secure Electric Grids in Communities Disproportionately Impacted by Climate Change
31. Consortium for Hybrid Resilient Energy Systems
32. NIFA US D. of Agriculture - Enhancing Experiential Learning by Assessing Food Quality of Tropical Crops Using Advanced Chemical Sensors and Unmanned Aerial Vehicles
33. Vanadium oxides based antennas and circuits.
34. Development of Open Air 5G testbed
35. A Multi-Frequency Electrical Bioimpedance Sensing Platform for Non-Invasive Pulmonary Monitoring Research at UPRM

## Department of Civil Engineering and Surveying

### Submitted Proposals:

1. System" for nearly \$3 million to the Department of Energy on February 5, 2A proposal for "MRI: Track 2 Acquisition of a High-Fidelity Driving Simulator Facility for Interdisciplinary Research" was submitted to NSF for \$1,807,211.00 on November 12, 2024, with Dr. Ivette Cruzado and Dr. Daniel Rodríguez as Co-PIs.
2. "Functionalization of Recycled Aggregate via Polymer Emulsion for Enhanced Mechanical Properties of Concrete" for \$120,000 was submitted by Dr. Felipe J. Acosta Costa and Dr. Arsenio Cáceres Fernández to NEx (An ACI Center of Excellence) on September 20, 2024.
3. Dr. Ismael Pagán Trinidad submitted a "Research Collaborative Proposal with Texas A&M University" for "The International Research Experiences for Students (IRES) Program" for \$25K per year for 5 years to NSF in October 2024.
4. Dr. Magda S. Galloza (PI) and Dr. Salvador F. Acuña-Guzmán (CoPI) submitted a proposal "Utilizing Event-Based Real-Time GPS Location Data to Analyze Community Behavior in Flood-Prone Areas for Enhanced Decision-Making during Flood Events" for \$52,700 to the Puerto Rico Water Resources and Environmental Research Institute on April 12, 2025.
5. Dr. Ivette Cruzado (PI) and Dr. Daniel Rodríguez submitted "Modeling Evacuation Decisions in Response to App-Based Flood Warnings" for \$24,995.10 to the Puerto Rico Water Resources and Environmental Research Institute on April 14, 2025.
6. Dr. Umberto Ciri (INME) and Dr. Luis D. Aponte Bermúdez (INCI) submitted "PROWESS: Puerto Rico Offshore Wind Energy 025.
7. Dr. Daniel Rodríguez Román submitted "Collaborative Research: CISE MSI: RPEP: CPS: Data-driven travel demand management through integrated parking and ridesharing cyber-physical systems" for \$720,000 to NSF on February 5, 2025. He also submitted "CIVIC-FA Track B: Mobility and Aging in Collaboration (MAGIC): A Transportation Platform for Older Adults" for \$110,000 to NSF (sub-award via Univ. of Arkansas) on March 4, 2025.
8. Dr. Carlos López del Puerto (Co-PI) submitted "An S-STEM Model to Enhance Engineering Workforce Development in Areas of National Strategic Need" for \$1,999,800 to NSF on February 28, 2025.
9. Dr. Daniel Rodríguez Román (PI) submitted a Letter of Intent for "HY-SPARC: A Hybrid Smart Parking and Carpooling System for Collaborative Mobility" for \$150,000 to the Puerto Rico Science, Technology & Research Trust on January 8, 2025.

### New Projects:

1. Dr. Daniel Rodríguez (PI) received a sub-award of \$20,000 from the University of Arkansas/NSF for "Mobility and Aging in Collaboration (MAGIC): A Transportation Platform for Older Adults" on October 1, 2024.
2. Dr. Walter Silva Araya (CoPI) is involved in "CHIRRP: Towards a Water Equity Framework for Mitigating Multi-Flood Hazards Events in Puerto Rico: A Case Study for the San Juan Bay Estuary" for \$109,000 from NSF (subaward with University of Georgia) for 2025-2029.

## Publications and Presentations:

1. Dr. Pedro Tarafa co-authored two posters/presentations on Lanthanum Oxynitride synthesis and nanoparticle performance presented at the American Association for the Advancement of Science (AAAS) and the American Chemical Society meetings in October and November 2024. He also presented a seminar on "Investigations in Environmental Engineering and its Graduate Program" on March 4, 2025.
  2. Dr. Daniel Rodríguez-Roman presented a seminar on "Carpool-based Parking Assignment Policy" in December 2024.
  3. Dr. Alberto Figueroa Medina and Dr. Didier Valdés Díaz presented "Equity and Resilience-Based Analysis of Transportation Corridors in Coastal Areas" and "Construction and Driving Simulation-Based Assessment of the First Diverging Diamond Interchange (DDI) in Puerto Rico" at the International Road Federation Caribbean Region Conference (July-August 2024). They also presented at the Road Safety and Simulation (RSS 2024) conference in October 2024, where their paper "Driving Simulator Analysis of the First Time Driving on a Diverging Diamond Interchange" won best paper.
  4. Dr. Alberto Figueroa Medina, Dr. Carla López-del Puerto, and Dr. Ismael Pagán-Trinidad co-authored "Fostering Transportation Workforce Development for the Blue Economy" presented at the Frontiers in Education (FIE2024) conference in October 2024.
  5. Dr. Ivette Cruzado, Dr. Didier Valdés, and Dr. Alberto Figueroa Medina co-authored "Evaluating the Effectiveness of Visual and Auditory ADAS Alerts on Rural Roads Using a Driving Simulator" and "Drivers' Behavior while Interacting With E-Scooters in Urban Areas: An Assessment using Driving Simulation" which were accepted for presentation at the LACCEI and AHFE International Conferences in July 2025.
  6. Dr. Walter Silva Araya co-authored "A technique for stream geometry estimation based on watershed morphometric characteristics" published in Environmental Modelling & Software in May 2025, and "Making waves: Harnessing stormwater for resilient water supply - A blueprint for vulnerable continental coasts and oceanic islands" published in Water Research in 2025.
  7. Several students presented research at the 104th Transportation Research Board Annual Meeting in January 2025 on topics including remote driving, traffic management for disaster resilience, parking availability, ridesharing, and structural health monitoring.
  8. Dr. Ali Saffar published his book on Timber Structure Design, for which he was congratulated by the faculty.
- Travel, Conferences, and Meetings:
1. Dr. Evi De La Rosa Ricciardi attended conferences such as Trimble Dimensions 2024 (November 2024), the XVI Ibero-American Meeting of Women Engineers, Architects and Land Surveyors 2024 (November 2024), FIG Working Week 2024 (May-June 2024), Faculty Resource 2024 Network Summer Program (June 2024), 22nd Best Practice Conference on Teaching and Learning (December 2024) and the "2025 Winter School for Scientific Artificial Intelligence (SAI)" (January 2024) 2025). He also participated in multiple webinars and conferences on robotics, GNSS, ethics and road safety.
  2. Dr. Daniel Rodríguez Román attended the CIVIC MAGIC Workshop (December 2024) and the NSF CIVIC Forum 2024 (October 2024).
  3. Dr. Walter Silva Araya attended the 2025 National Water Resources Institutes Annual Conference (February 2025) and moderated the 2025 National Watershed & Stormwater Conference (April 2025).
  4. Dr. Alberto Figueroa Medina participated in the Abertis International Sustainable Mobility Awards Ceremony (November 2024), the NLTAPA Annual Meeting (July 2024), the Frontiers in Education (FIE2024) conference (October 2024), and the Road Safety and Simulation (RSS 2024) conference (October 2024). He also participated in meetings of the Mayagüez Community Board and the State Council for Innovation in Transportation (STIC).
  5. Dr. Didier Valdés Díaz recorded episodes of the podcast "The Road Ahead" with leading figures in transportation. Participated in the Southeast Regional Meeting of the LTAP Centers (March-April 2025).
  6. Dr. Carla López del Puerto attended the IRF Conference (July 2024), the Faculty Resource 2024 Network Summer Program (June 2024), and the 2023 IEEE ASEE Frontiers in Education Conference (October 2024).
  7. Dr. Ingrid Padilla Cestero participated in several NSF and Ford Fellowship program workshops and conferences (May-June 2024). He also participated in a "Latinos & Space" panel at the White House (September 2024).
  8. Dr. Felipe Acosta Costa attended the workshop "Rheology and 3D Printing of Concrete" (August 2024) and the ICA Congress (November 2024).

## Department of Computer Science and Engineering

### Active Grants during or until 2024-2025

1. Emmanuel Arzuaga (PI), Manuel Rodríguez (Co-PI), UPR Mayaguez | Technical Workforce Development Certifications for The Puerto Rico Broadband Program, OGP, \$700K, 12/2024-11/2025.
2. Emmanuel Arzuaga (Co-I), Remote Sensing of Sargassum Accumulation and Impacts on Tropical Marine Ecosystems: A Multi-Scale Approach, NASA, \$749,721, 08/2021 – 07/2025.
3. Emmanuel Arzuaga (Co-PI), NOAA EPP/MSI Cooperative Science Center for Earth System Sciences and Remote Sensing Technologies, \$825K, 08/2023-07/2027.
4. Kejie Lu (PI), Collaborative Research: CCRI: ENS: Enhanced Open Networked Airborne Computing Platform, NSF, \$287,019, 2023-2026.
5. Juan Medina Lee (PI), CAWT: Driver monitoring system for takeover time prediction based on wearable devices.
6. Juan Patarroyo (PI), CAWT: An AI-based wearable framework to integrate and correlate motion analysis with other sensors and biomarkers.
7. Wilson Rivera (Co-PI), An educational approach to precision livestock farming for current and potential undergraduate students through research, extension, internship, and study abroad experiences using small ruminants as models, USDA NIFA, \$199K, 08/01/2024-07/31/2027.
8. Manuel Rodríguez (PI), R15 THS: Using Twitter and Big Data Analytics to Track and Predict Health Conditions, NIH, \$359,367, 9/15/24-5/1/27
9. Manuel Rodríguez (PI), Heidy Sierra (Co-PI), Emmanuel Arzuaga (Co-PI), MRI: Track 1 Acquisition of GPU Cluster for AI-HSI - a campus-wide cyberinfrastructure to support AI, hyperspectral imaging, and optics research at UPRM, NSF, \$513K, 06/01/2024-05/30/2027.
10. Heidy Sierra (Co-PI), Empowering Future Professionals: A multidisciplinary Approach toward Agriculture 4.0 Career Readiness in Puerto Rico, USDA NIFA, \$199K, 08/01/2024-07/31/2027.

11. Bienvenido Velez (PI), Stackable Certifications in Computing Programs at the College of Engineering of the University of Puerto Rico, Mayaguez, DDEC, Budget: \$300,000.

#### Proposals Submitted

1. Heidy Sierra (PI), Manuel Rodriguez (Co-PI), Emmanuel Arzuaga (Co-PI), CREST Phase I: Center for Intelligent Environmental Monitoring using Proximal and Remote Sensing, \$7,500,000, NSF.
2. Juan F. Medina (PI), MRI: Track 2: Acquisition of a High-Fidelity Driving Simulator Facility for Interdisciplinary Research at the University of Puerto Rico, Mayaguez Campus, \$1,500,000.
3. Juan F. Patarroyo (PI), MRI: Track 1 Acquisition of 3D Motion Capture Equipment to support Research on Wearable Tech, \$267,987.
4. Juan F. Patarroyo (PI), CAREER: Intelligent Biomarker Analysis based on Wearable Distributed Computing, \$503,930, NSF (Awarded).
5. Wilfredo Lugo (PI), CAREER: SimEdgeAI: A Modular Framework for Edge AI Simulation, Compression, and Distributed Inference, \$500,000, NSF.
6. Juan F. Medina (PI), CAREER: Human Vehicle Teaming System for Enhancing Mobility in Older Adults, \$500,000, NSF.
7. Venkataramani Kumar (PI), CRII: SaTC: Advanced Physical Layer Security Framework for Scalable and Efficient IoT Networks, \$200,000, NSF.

#### Publications

1. Justin S. Lee, Nicholas Palmer, Junfei Xie, Yan Wan, Kejie Lu, Shengli Fu, "RAPTURE: a Remotely Accessible Platform of Testbeds for UAS Research and Education", in Proc. AIAA 2024, jul 2024.
2. Jinran Zhang, Kejie Lu, Yan Wan, Junfei Xie, Shengli Fu, "Empowering UAV-Based Airborne Computing Platform with SDR: Building an LTE Base Station for Enhanced Aerial Connectivity", IEEE Transactions on Vehicular Technology, Vol. 73, No 10, pp. 15513-15524, Oct. 2024.
3. K. Ruiz-Rohena and M. Rodriguez-Martínez, "ArcaDB: A Disaggregated Query Engine for Heterogenous Computational Environments," 2024 IEEE 17th International Conference on Cloud Computing (CLOUD), Shenzhen, China, 2024, pp. 42-53.
4. Andrea Gomez, Emmanuel Arzuaga, "Comparing YOLO Models for Real Time American Sign Language Recognition", International Symposium on Intelligent Computing and Networking (ISCIN 2025).
5. Michael Alvarez, Emmanuel Arzuaga, Heidy Sierra, "Virtual Stain and Phase Estimation using Encoder-Decoder Networks", International Symposium on Intelligent Computing and Networking (ISCIN 2025).

#### Department of Mechanical Engineering

##### Quantity of external funds received, by source, for research and creative work

- DoE (4 projects): \$981,282.79
- ONR (2 projects): \$178,829
- NSF (5 projects): 1,100,000
- USGS (2 projects): \$341,933
- USDA (2 projects): \$399,919
- AFRL \$1,061,535
- PR Department of Environmental Resources \$1,267,896
- NOAA (Caricoos) \$63,200
- PRSTRT (2 projects): \$139,933
- P&W Turbolab \$500,000
- NIST \$7.425M
- TOTAL \$13,459,527.79

Total number of proposals submitted and approved by department-16

Number of new research and creative work projects-9

Number of ongoing research and creative work projects-22

#### Brief description of new and ongoing projects with significant impact.

- DoE: Dr. Umberto Ciri (PI) and Dra. Sheilla Torres (Co-PI) were awarded a proposal entitled: "Academic Center for Reliability and Resilience of Offshore Wind (ARROW)". This is a collaboration with the University of Massachusetts Amherst (main recipient). Total Amount: \$261,675.79.
- Addressing Barriers in Today's and Tomorrow's OSW Power Deployment by Enhancing U.S. Workforce and Education" is a proposal submitted to the DOE Centers of Excellence program. ARROW's mission is to ensure reliable and resilient Offshore Wind (OSW) infrastructure, transmission and supply chain, workforce diversity and an equitable energy transition. ARROW will prepare the next generation of US OSW professionals, researchers and educators to achieve US development and deployment goals through a comprehensive, integrated and multidisciplinary program of education and research.
- ONR: Dr. Umberto Ciri collaborates with Purdue's University (main recipient) on a project that was recently awarded by ONR entitled: "Blue Integrated Partnership 2.0 (BIP 2.0)". Total Amount: \$30,000. This work seeks to expand and improve the already-successful BIP program funded in 2021. The BIP program built an educational ecosystem to support and develop a U.S. STEM Workforce that is ready to address the world's grand challenges, such as climate change and coastal vulnerability. During BIP 2.0, we will have a Summer Institute where fellows, mentors, and external board members will meet to build a supportive community that nurtures our future workforce beyond 8-weeks of the summer program. The specific topics that will be addressed at UPRM are:

- Assessment of marine renewable energy resources in the Caribbean region.
- Optimization of coupled renewable energy-carbon sequestration devices.
- Mitigation of coastal hazards from extreme weather events.
- ONR: Dr. Andre Amador was awarded a proposal as Co-PI entitled: "Inclusion and Belonging in Ocean Science (IBOS) Collaborative: The East Coast Division of the D-ENTERPRISE Initiative". Total Amount: \$148,829. The main objective is to increase representation of students from underrepresented backgrounds in oceanography through assistantships, mentoring, and professional development while building research capacity at UPRM.
- NSF CAREER: Dr. Umberto Ciri is the recipient of an NSF CAREER award entitled: "Coupled air-sea dynamics in offshore wind turbine flows with complex bathymetry". Total Amount: \$500,000. The overall goal underlying this CAREER development plan is to understand the interactions between wind turbines and the coupled air-sea dynamics in coastal areas to advance offshore wind energy. As a step toward this goal, the research objectives of this CAREER proposal are to clarify the mechanisms of windwave interactions in presence of complex coastal bathymetry, and their effects and feedback with offshore wind turbines and their wakes. The research objectives are complemented by an educational plan aimed at forming the next generation of computational scientists and researchers while retaining local talent at the University of Puerto Rico at Mayagüez (UPRM) throughout the undergraduate-graduate pipeline.
- U.S. Geological Survey (USGS) via PRWRERI (Puerto Rico Water Resources and Environmental Research Institute): Dr. Pedro Resto was awarded the proposal entitled: "Multispectral Imaging and Artificial Intelligence in a Rapid, Portable and Low-Cost Water Quality Sensor". Total Amount: \$21,933. Biosensors are systems that detect a biological or chemical target and transduce the detection into a signal using thermal, optical, or electrical methods. Conventional methods for fecal bacteria testing in water have high sensitivity and specificity but provide delayed responses. This proposal aims to study how Multispectral Imaging (MI), the sample's excitation at varying wavelengths from ultraviolet (UV) to infrared (IR), can be used for bacteria quantification in a low-cost, potable water quality sensor. This project builds on previous PRWRERI funding to continue the development of low-cost, rapid bacteriological detection tools for providing water quality information and developing tools for water quality monitoring, including the integration of artificial intelligence for bacteriological quantification.
- Air Force Research Laboratory (AFRL): Dr. Ricky Valentín was awarded a proposal entitled: Joint Aluminum Manufacturing Maturation (JAMM). This proposal is a collaboration with the University of Texas el Paso with funds from. Total Amount: \$1,061,535. This research has the objective to establish capability to evaluate powder characteristics essential to process compatibility and high-quality prints. The group will explore manufacturing challenges for at least three materials among a lower strength aluminum (AlSi10Mg or F357) for baselining purposes, Constellium CP1, EOS Al5X1 and Elementum 5083 RAM2. Also, they will establish best practices for heat treatment, stress relief, and thermal exposure of the above listed alloys and develop and demonstrate methodology for environmental exposure effects of powders and materials in a variety of conditions of concern.
- PR Department of Environmental Resources: Dr. Andre Amador was awarded a proposal entitled: "Development of an integrated platform for monitoring and forecasting harmful algal blooms at San Jose Lagoonas". Total Amount: \$1,267,896. As a CoPI of this project, he will be responsible for developing an advanced monitoring and early warning system for Harmful Algal Blooms (HABs) in the San José Lagoon, San Juan, Puerto Rico. The research will leverage recent advancements in remote sensing, in-situ monitoring, and Machine Learning (ML) by integrating multi-spectral satellite imagery with in-situ environmental data. The research aims to create a state-of-the-art, data-driven predictive system for HAB events.
- NOAA - Caribbean Coastal Ocean Observing System (CARICOOS). Dr. Andre Amador was awarded a proposal entitled: "Assessing Mesoscale Eddy Subsurface Vertical Structure under Extreme Heat: Integrating Underwater Glider Data and Remote Sensing Techniques". Total Amount: \$63,200. The proposal aims to document and analyze the spatiotemporal evolution of recent Marine Heat Wave (MHW) in the Western Tropical Atlantic and Eastern Caribbean. As a PI, the scope of work involves conducting oceanographic observations, collecting data, and analyzing data.
- PRSTRT: Dr. Andre Amador was awarded a proposal entitled: "Wave Transformation Dynamics over Coral Reefs: Evaluating Wave Dissipation Formulations for Coastal Defense in Puerto Rico". Total Amount: \$69,933. The main objective of the proposal is to evaluate the performance of various formulations for wave energy dissipation, focusing on both breaking and bottom friction parameterizations within the Simulating Waves Nearshore (SWAN) spectral wave model. As a PI, the scope of work will focus on carrying out detailed, high resolution numerical simulations using the SWAN model on an ongoing coral reef restoration project.
- Aerospace Institute for Research (AIR): Enhancing Capabilities in Research, Development and Aerospace-Related Economic Development (AIR) Summary: This project started last academic year, however, since it has a significant impact on our department we are including a brief summary.
  - The scope of work for this project is for the construction of the Aerospace Institute for Research (AIR). The award will provide for the construction of a 9,000-12,000 square foot structure, pending construction costs at the time of final design, within the allotted budget of \$7,425,000.
  - The project intent is to incorporate novel research and development activities, expanding the capabilities of the UPRM Aerospace Institute for Research (AIR) to expand and improve upon the scientific, technological, and educational capacity of Puerto Rico and the United States. The building at UPRM will house resilient and energy-efficient research and development laboratories and facilities (i.e., classrooms, meeting spaces and administrative offices) in the thrust areas of propulsion technologies, material sciences, navigational technologies, atmospheric sciences and human factors, and high-performance computing.
  - For the initial 17 months since the award date, the administration of the project was a shared endeavor between UPR Central Administration (UPR's Office of Physical Development and Infrastructure) and UPRM. At UPRM, a steering committee was designated by the Chancellor, Dr. Agustín Rullán. Dr. Sheilla Torres-Nieves was designated as the point of contact and lead of the committee, composed of representatives and administrators of the relevant Departments, Deanships and Offices to ensure project compliance and completion. Biweekly meetings are held, ensuring that the project stays on schedule and that all milestones are met. In January of 2025, an official letter from the Office of the President of the University of Puerto Rico confirming the delegation of the project in its entirety to UPRM for administration. This has no direct impact on the interactions with the agency (NIST).
  - For the past reporting periods, tasks were focused on planning and administrative tasks in fulfillment with UPR regulations and compliance leading towards identifying the final designer for the project, completing reports and documentation in compliance with NIST, as well as tasks in support of an Environmental and Historic Review of the project, as required by the agency. Moreover, the 2024 annual site visit from NIST program manager, Robert Slocum, was hosted in February of 2024. The site visit for 2025 was postponed by the agency until further notice.
  - In March of 2024, the final design phase was initiated. In November of 2024, after a thorough review process of five proposals by an evaluation committee designated by Dr. Rullán, the studies, final design and supervision services of the project were adjudicated to MARVEL Architects, Landscape Architects, LLP. In June of 2025, the schematic design phase was concluded. The team is now moving towards a detailed design phase of the project.
  - Financial and Performance Progress Reports must be submitted quarterly after award start date. In fulfillment with this requirement, all Performance and Financial Progress Reports have been submitted to NIST on time, before the established deadlines. Progress reports are also shared with UPR's Office of Physical Development and Infrastructure (ODFI) for



- documentation purposes. All documentation requested by the agency has been prepared on time, all deadlines have been met and/or extensions have been requested, before the prescribed deadlines, when applicable to ensure compliance.

#### Impact outcomes of research and creative work projects (e.g., patents, discoveries).

##### • Patents

- S. Cancelos, M. Rivera, E. López, W. García. "Method and system for increasing the gas-dissolution rate of a bubble in a liquid media via non-invasive resonant acoustic pressure". US Patent 12,296,200 B2. United States Patent and Trademark Office. May 13, 2025

##### • Provisional Applications

- Marco Menegozzo, Andres Cecchini Brigi, Frederick A. Just-Agosto, David Serrano Acevedo. "SCUTOIDAL SUB-CELL AND CELL ARRANGEMENTS" - US Patent Application - 71900/373750 , July 12, 2024.
- P. J. Resto-Irizarry, "Autonomous Portable Water Monitoring System for Rapid Enterococcus Detection," Provisional Patent Application, Jul. 2024. PAT: 63/540,469.
- P. J. Resto-Irizarry, "Automated Biosensor Board for Rapid Detection of Fecal Bacteria in Water," Provisional Patent, Feb. 2024. PAT: 63/539,360.
- P. J. Resto-Irizarry, "Autonomous Microfluidic Device for Water Quality Analysis," Provisional Patent Application, Mar. 2022. PAT: 63/307,745, PCT/US2023/012505
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#### Number of research collaboration agreements and brief description (purpose, validity period, and agency name).

##### Most relevant publications and presentations.

1. U Ciri, S Rodriguez-Abudo, S Leonardi. "Comparison between shear-driven and pressure-driven oscillatory flows over ripples," Journal of Fluid Mechanics 998, A42 (2024).
2. R Sanchez, U Ciri. "Turbulent statistics and heat transfer around a wall-mounted prism in a boundary layer", Proceedings of the 10th Thermal and Fluids Engineering Conference pp. 529-539, March 9th-12th, Washington, DC, USA, 2025
3. Cecchini, A.; Menegozzo, M.; Roman, E. Multi-Objective Geometry Optimization of Additive-Manufactured Hexagonal Honeycomb Sandwich Beams Under Quasi-Static Three-Point Bending Loading. Materials 2025, 18, 867. <https://doi.org/10.3390/ma18040867>
4. Candelaria Caraballo, S.; Menegozzo, M.; Serrano Acevedo, D. An Innovative Approach to Tailor Sandwich Core Structures for Multi-Directional Loading Scenarios. Materials 2025, 18, 599. <https://doi.org/10.3390/ma18030599>
5. Jeancarlos Melendez, Samir Candelaria, David Serrano, Marco Menegozzo, Patrick Gonzales, PARAMETRIC STUDY OF ENERGY ABSORPTION CAPABILITIES OF A NOVEL LATTICE STRUCTURE, abstract accepted for presentation and publication [in the Proceedings] at the 21st International Conference on Experimental Mechanics [ICEM21] - Bologna, Italy, July 7-10, 2025.
6. Arnold E. Berrocal-Coba, Marco Menegozzo, Frederick A. Just-Agosto, Andrés Cecchini Brigi, USE OF SHAPE MEMORY ALLOY FOR THERMAL STRAIN-ABSORPTION IN AEROSPACE APPLICATIONS, abstract accepted for presentation and publication [in the Proceedings] at the 21st International Conference on Experimental Mechanics [ICEM21] - Bologna, Italy, July 7-10, 2025
7. Tensile Plastic Instability in Useful Deformation for Volume Conservation Type Materials Forming Processes in Manufacturing Industries; Jayanta Banerjee; Luis Cruz-Zapata - 21st International Conference on Experimental Mechanics; Bologna, Italy; 6 - 11 July, 2025
8. Some of the Governing Parameters of the Machine Settings During the Manufacturing Processes of Mass Production in Metalworking Industries; Jayanta Banerjee; Julián Rivera-Rodríguez; Luis Cruz-Zapata 8th International Conference on Integrity-Reliability-Failure (IRF 2025); Porto, Portugal; 15 - 18 July, 2025.
9. Echeverría-Altamar K, Barreto-Gamarra C, Domenech-García M, Resto-Irizarry P. Prediction of cardiac differentiation in human induced pluripotent stem cell-derived cardiomyocyte supernatant using surface-enhanced Raman spectroscopy and machine learning. Biosens Bioelectron. 2025 Sep 1;283:117528. doi: 10.1016/j.bios.2025.117528. Epub 2025 Apr 29. PMID: 40339557.
10. Saavedra-Ruiz, A.; Resto-Irizarry, P.J. A Portable UV-LED/RGB Sensor for Real-Time Bacteriological Water Quality Monitoring Using ML-Based MPN Estimation. Biosensors 2025, 15, 284. <https://doi.org/10.3390/bios15050284>
11. García-Rodríguez, W.; Lasalde-Ramírez, J. A.; Nicolau, E.; Echeverría-Altamar, K.; Resto-Irizarry, P. J. Two-Level Full Factorial Design and Central Composite Design for the Development of Laser Scribed Graphene Electrodes for Label-Free L-Histidine Detection in Artificial Sweat. Preprints 2025, 2025030039. <https://doi.org/10.20944/preprints202503.0039.v1>
12. W. García-Rodríguez, A. Saavedra-Ruiz and P. J. Resto-Irizarry, "Label-Free Classification of L-Histidine Vs Artificial Human Sweat Using Laser Scribed Electrodes and a Multi-Layer Perceptron Neural Network," 2024 46th Annual International Conference of the IEEE Engineering in Medicine and Biology Society (EMBC), Orlando, FL, USA, 2024, pp. 1-4, doi: 10.1109/EMBC53108.2024.10781841.
13. Saavedra-Ruiz, A.; Resto-Irizarry, P.J. Rapid, Portable, and Low-Cost Water Quality Assessment Device Based on Machine Learning. Proceedings 2024, 104, 6. <https://doi.org/10.3390/proceedings2024104006>
14. Ramirez, Miguel, and Guillermo Araya. 2025. "Stability Analysis of Unsteady Laminar Boundary Layers Subject to Streamwise Pressure Gradient" Fluids 10, no. 4: 100. <https://doi.org/10.3390/fluids10040100>
15. Christian Lagares, Subhajit Roy and Guillermo Araya. An Algebraic Domain Reprojection, Deep Learning and DNS-Data-Driven Approach for Turbulence Modeling. American Institute of Aeronautics and Astronautics, SCITECH 2025 forum 0697. Published Online:3 Jan 2025 <https://doi.org/10.2514/6.2025-0697>
16. Christian J. Lagares-Nieves, Guillermo Araya. EFFECTS OF GAS RAREFACTION AND WALL COOLING CONDITION IN HYPERSONIC BOUNDARY LAYERS. Proceedings of the 10th Thermal and Fluids Engineering Conference pp747-757, March 9th-12th, Washington, DC, USA, 2025
17. Christian J. Lagares-Nieves, Guillermo Araya, Kenneth Jansen. Reynolds Number Dependency in Compressible Crossflow-Jet Problems. American Institute of Aeronautics and Astronautics, SCITECH 2025 forum 1953 Published Online:3 Jan 2025 <https://doi.org/10.2514/6.2025-1953>
18. Joseph Rutherford, Matthew Holland, Christian J. Lagares, Christopher Combs, Guillermo Araya. Assessment of Flat-Plate Supersonic Turbulent Boundary Layers Under Wall Cooling Conditions. 2410 American Institute of Aeronautics and Astronautics, SCITECH 2025 forum 6-10 January 2025 Orlando, FL. <https://doi.org/10.2514/6.2025-2410>
19. Guerrero-Fernandez, M., Quintero, P., and Ozdemir, O. C. (July 26, 2024). "Cold Gas Spraying Copper Metal on AlN Ceramics as an Alternative to Thick Direct Bond Copper Substrates for Power Electronics." ASME. J. Electron. Packag. December 2024; 146(4): 041107. <https://doi.org/10.1115/1.4065943>

20. M. Guerrero-Fernandez, O. Ozdemir, N. Zhu, P. Allison, B. Jordon and P. Quintero, "Bonding Mechanism of Cold Gas Sprayed Copper Particles onto Aluminum Nitride Substrates for Power Electronics Packaging," in IEEE Transactions on Components, Packaging and Manufacturing Technology, (2025), doi: 10.1109/TCPMT.2025.3564520.
21. M. Guerrero-Fernandez, O. Ozdemir, Z. Ning, P. Allison, B. Jordon and P. Quintero, "Bonding Mechanism of Cold Gas-Sprayed Copper Particles Onto Aluminum Nitride Substrates for Power Electronics Packaging," in IEEE Transactions on Components, Packaging and Manufacturing Technology, vol. 15, no. 7, pp. 1511-1522, July 2025
22. Vargas-Martinez, J.C., Rodríguez-Abudo, S. Simultaneous velocity and concentration measurements over a rippled boundary subjected to oscillating fluid forcing. *Exp Fluids* 65, 101 (2024). <https://doi.org/10.1007/s00348-024-03840-x>
23. Dooner, D. "The Third Law of Gearing: A Surface Defining Maximum Relative Curvature of Conjugate Gear Flanks." Proceedings of the ASME 2024 International Design Engineering Technical Conferences and Computers and Information in Engineering Conference. Volume 10: 2024 International Power Transmission and Gearing Conference (PTG). Washington, DC, USA. August 25–28, 2024. V010T10A001. ASME. <https://doi.org/10.1115/DETC2024-142504>
24. Dooner, D., Garcia-Garcia, R., and Rico, J. M. (November 6, 2024). "The Bressisque Surface: Distribution of Screw Pitch." ASME. *J. Mechanisms Robotics*. April 2025; 17(4): 044502. <https://doi.org/10.1115/1.4066848>
25. Ricardo García-García, José M. Rico, David B. Dooner, J. Jesús Cervantes-Sánchez, Mario A. García-Murillo Construction of Interactive Kinematic Spatial Mechanism and Robot Models Through GeoGebra Software. *Computer Applications in Engineering Education*. Vol 33 issue 3 May 2025 e70039
26. Torres-Nieves, S.N., and Medard, P., "Turbulence Model Assessment on Roughness Effects on Boundary Layer Development Over Adjacent Compressor Blades", 2024 AIAA AVIATION Forum, Las Vegas, Nevada, AIAA Paper Number 2024-3677, 2024.

#### Conference presentations, poster presentations and participation in workshops

1. J. Amell, J. Camacho, M. Guerrero, F. Matallana, O. Orozco, O. Tafur, U. Ciri "Assessing Puerto Rico's Renewable Energy Potential: Solar, Wind, Salinity Gradient, and Ocean Thermal Power". Poster Presentation. "Energy Security and Economic Development: From the Caribbean to the Pacific", Bayamon, PR, February, 26-28, 2025.
2. P Medard, U Ciri "Waves Effects on Wake and Power Generation of a Single Horizontal Axis Wind Turbine Using Coupled Level-Set Method and Large Eddy Simulation". Poster Presentation. "Energy Security and Economic Development: From the Caribbean to the Pacific", Bayamon, PR, February, 26-28, 2025.
3. O Tafur Ushinahua, U Ciri "Numerical study of effects of bathymetry slope on wave hydrodynamics". Poster Presentation. "Energy Security and Economic Development: From the Caribbean to the Pacific", Bayamon, PR, February, 26-28, 2025.
4. Paper presentation co-author in two presentations at the APS Division of Fluid Dynamics, Salt Lake City, UT, November 24-26 2024
5. Co-author of a presentation given by graduate student Pharlin Ménard at the NAWEA/WindTech, New Brunswick, NJ, October 30-November 1, 2024
6. Co-author of a presentation given by Dr. Ciri's collaborator Larry K. Beng (PNNL) at the AGU24 Annual Meeting in Washington, DC, December 9-13.
7. Pedro Quintero. "Supporting manufacturing Competitiveness with Onsite Energy". Oral Presentation. First Puerto Rico Industrial Power Connect Conference, March 27, CooperVision, Juana Diaz, PR.
8. Pedro Quintero. "Gas Turbine Tropicalization: Incorporating Absorber for Intake Air Conditioning". Oral Presentation. Second Puerto Rico Industrial Power Connect Meeting, June 27, Baxter, Aibonito, PR.
9. Andre Amador, Patricia Chardón, Edward Cruz, Luis Rodríguez, Julian Morell, Kevin Martínez, Julio Morell. Poster presentation: "Vertical Extent and Influence of Mesoscale Eddies on Marine Heatwaves in the Northeastern Caribbean" in "Optimizing Ocean Observing Networks for Detecting the Coastal Climate Signal Workshop" (September 23-25, 2024)
10. Jhon Herrera, Andre Amador, Gustavo Martinez. Oral presentation: Developing a Predictive System for Harmful Algal Blooms in the San Jose Lagoon, Puerto Rico in "Optimizing Ocean Observing Networks for Detecting the Coastal Climate Signal Workshop" (04/2025)
11. Daniela Herrera Molina, Carlos Marín, Juan M. Lopez Encarnación, Silvina Cancelos. Oral Presentation. Modeling Goldberg polyhedral like water nanobubbles structure stability using density functional theory. 91st Annual Meeting of the Southeastern Section of the APS Thursday–Saturday, October 24–26, 2024; UNC Charlotte, North Carolina
12. H. Valle, S. Cancelos, C. Marín "Detailed Characterization of bubble motion for Enhancing Heat Transfer Correlations Using High-Speed PIV Technology. Poster Presentation. "Energy Security and Economic Development: From the Caribbean to the Pacific", Bayamon, PR, February, 26-28, 2025.
13. W. N. Ríos, S. Cancelos, C. Marín : "Exploring Fast Neutron Directionality through Cavitation Rate 'Musicality'". Poster Presentation. "Energy Security and Economic Development: From the Caribbean to the Pacific", Bayamon, PR, February, 26-28, 2025.
14. R. Báez, S. Cancelos, C. Marín "An Experimental Facility For Assessing the risk of Bubble Rupture In Molten Salt Nuclear Reactors". Poster Presentation. "Energy Security and Economic Development: From the Caribbean to the Pacific", Bayamon, PR, February, 26-28, 2025.
15. O. Orozco, C. Marín, S. Cancelos. Reducing the cost of hydrogen production using piezoelectric nanoparticles actuated by acoustic chambers. Poster Presentation. "Energy Security and Economic Development: From the Caribbean to the Pacific", Bayamon, PR, February, 26-28, 2025.
16. Participation in the EOP (Engineering for One Planet) Faculty Workshop in Villanova University. June 3-7 2024. Villanova, Pennsylvania USA.
17. Oral presentation of the Nuclear Engineering Minor at the CIAPR by Dr. Cancelos and ANS UPRM Chapter Mariana Guido. Feb 1 2025 San Juan PR
18. Dra. Sheilla Torres was invited by The White House National Space Council and the Office of Public Engagement to attend the Young Hispanic Leaders in the Space Industry roundtable on Monday, September 30th at the White House. This roundtable intended to engage the next generation of Space leaders, highlight the career paths and contributions of Latinos in the space enterprise and amplify the Biden-Harris Administration's continued commitment to the Latino community.
19. Dra. Sheilla Torres was invited to participate in the Hispanic Heritage Month celebration in the NASA headquarters in Washington, D.C.
20. Torres-Nieves, S.N., "The Growth and Vision of the Aerospace Ecosystem: Academics and Research and Development for Workforce Development", Puerto Rico Aerospace Technology Consortium 10th Anniversary Summit, February 2025, Manatí, Puerto Rico.
21. Morales, S. and Torres-Nieves, S.N., Metocean modeling for reliable wind-wave characterization for offshore wind applications, 2025 Puerto Rico Louis Stokes Alliance for Minority Participation 58th Junior Technical Meeting and 43th Puerto Rico Interdisciplinary Scientific Meeting (JTM/PRISM), April 2025.

**Papers submitted under review**

1. Andres Cecchini, Marco Menegozzo, Emerson Roman, Geometric Parameter Analysis and Optimization of Additive Manufactured Hexagonal Sandwich Composite Beams under Three-Point Bending, manuscript submitted to the journal "Engineering Structures" in March 2025.
2. Juan Perez, Silvina Cancelos. Experimental Analysis of Individual Forces in Force-Balance Model for Bubble Departure Diameter Prediction. ASME Journal of Nuclear Engineering and Radiation Science. Submitted October 2024, first review received December 2024 and review version submitted by Feb 2025. Status Pending.
3. R. F. Crespo, K. E. Altamar, P. R. Irizarry, and D. Suleiman, "Surface Modification of Gold Screen-Printed Electrodes with Sulfonated Polymer for Improved Electrochemical Detection of Cardiac Troponin I," ACS Omega, under review, 2025.

**Books**

1. Materials Science: Theory and Engineering Springer 2024 Nestor Perez
2. Phase Transformation in Metals, Mathematics, Theory, and Practice 2nd Edition 2025 Springer Nestor Perez
3. Métodos determinísticos en manufactura metalmecánica, ISBN 978-1-5065-5439-6

**Department of Chemical Engineering****Submitted Proposals:**

1. "Curbing climate change and improving resilience in rural communities by creating new lifecycles for mixed waste plastics and biomass" por \$1,800,000, 4 años. En esta propuesta participan Dra. Yomaira Pagán (PI, UPRM), Dr. Arturo J. Hernández-Maldonado (Co-PI) y Dra. Claribel Acevedo (Co-PI). Proposal submitted to the NSF EPSCoR Track 2 program – January 23, 2024.
2. "UPR-UW PREM: Center for Advancing Research and Training for STEM Success" por \$4,200,000, for 6 years. Dr. Claribel Acevedo (PI), Dr. Yomaira Pagán (Co-PI), Dr. Arturo J. Hernández-Maldonado (Co-PI), Dr. Ubaldo Cordova (Co-PI) and Dr. Camilo Mora (Co-PI) participate in this proposal. Proposal submitted to the NSF PREM program –March 12, 2024.
3. "Characterization, detection, and degradation of persistent emerging contaminants (PEC) in air (dust from Saharan desert), soils, and irrigation districts of Puerto Rico" por \$ 3,621,780, 5 años. Dr. Samuel Hernández (PI, Chemistry) and Dr. Arturo J. Hernández-Maldonado (Co-PI) participate in this proposal. Proposal submitted to the NSF GCR program – April 12, 2024.
4. "AIMS: AI-Enabled Materials Discovery, Design, and Synthesis Institute" for \$414,000, 5 years. Dr. Arturo J. Hernández-Maldonado (Co-PI) and Dr. Ubaldo Cordova (Co-PI) participate in this proposal. Proposal submitted to the program NSF National Artificial Intelligence (AI) Research Institutes –16 de mayo de 2024
5. Non-invasive Therapy using Lamina Propria Extract for Vocal Fold Healing, C. Mora
6. Vocal Fold Restoration via incorporation of Matrix-Bound Vesicles as Tissue Specific Signaling Factors into Injectable Hydrogels. C. Mora
7. Tissue-Specific Matrix-Bound Vesicles Shaping Wound Healing and Bio-Substrate Innovation MIRA, C. Mora
8. RISE 2 the BEST Graduate Level, C. Mora
9. "Collaborative Research: RII Track-2 FEC: Curbing climate change and improving resilience in rural communities by creating new lifecycles for mixed waste plastics and biomass". (PI: Yomaira Pagán; co-PIs: Claribel Acevedo, Liz Díaz, Keyla Soto). Submitted January 2024. Total Amount: \$1,800,000. Declined.
10. "UPR-UW PREM: Center for Advancing Research and Training for STEM Success". (PI: Claribel Acevedo; co-PI: Yomaira Pagan, Paul Voyles, Shelly Grandell). Submitted March 2024. Total Amount: \$4,200,000. (Awarded on 24/July/2024).
11. "BioFoundry: Artificial Intelligence-Driven RNA BioFoundry". Lead PI: Daeyeon Lee (co-PIs: Claribel Acevedo-Vélez, David Issadore, Zachary Ives, Drew Weissman) PI at UPRM: Claribel Acevedo-Vélez. Sub-award Amount: \$1,599,580. Submitted October 2023. Total Amount: \$18,000,000. (Awarded on 27/August/2024)
12. PRSTRT: Polymer Nanocomposite Membrane Assembly for Water Purification on the International Space Station (PI), (Approved-New).
13. DOD: Acquisition of an NMR for the Study of Novel Multi-Ionic Polymers (PI), (Approved-New).
14. DOD-ARO: Sulfonated Poly(arylene-ether-ketone-sulfone) with Additional Elastomeric Domains for Protective Clothing and Fuel Cell Applications (PI), (Pending).
15. NFS-CAWT- Materials Discovery for Cardiorespiratory Disease Biomarker Detection Using Machine Learning (PI) (Pending).
16. DOE: Manufacturing of Reinforced Membranes for Redox Flow Batteries (PI), (Pending).
17. DOE: Intermediate Temperature Fuel Cell Membranes Based on Conducting Azole Systems PI), (Pending).
18. DOE: Synthesis and Nanoscale Assembly of Stable and Highly-Active Photocatalytic Membranes for Wastewater Purification Systems (PI), (Pending).
19. PRBio Tech Hub, senior personnel, EDA, 2M, February 2024, M. Torres-Lugo
20. Hand Held Induction Heaters for Pancreatic and Prostatic Cancer, \$275K, NSF, SBIR, October 2023, M. Torres-Lugo
21. PR INBRE Feasibility Grants: TMT-Proteomic analysis of total protein extracts from yeast *S. cerevisiae* cultures in microgravity conditions (ACCEPTED) (\$5,150) M. Latorre
22. Catalyzer Research Grants: Production of Biopolymeric Filaments from Agricultural Waste for Sustainable Additive Manufacturing (\$69, 860). Not accepted, will be resubmitted. M. Latorre
23. Puerto Rico Science, Technology and Research Trust - Commercialization of a Turn-key System for Sampling and Analysis of Flowing Powder Blends. Rodolfo J. Romañach, Rafael Méndez, awarded
24. NSF Collaborative Research: HSI Pilot Project: PRACTICE - Performance Refinement through AI Correction in Technical Writing for Chemical and Electronics Engineering; PI Ubaldo M. Córdova-Figueroa (UPRM), CoPI Gabriel Castelblanco (University of Florida), CoPI Elías Beauchamp (UPR-Bayamón); \$300,000; September 15, 2024 – August 31, 2026. (Awarded)
25. NASA MOSAICS: Controlled Assembly of Amphiphilic Janus Particles in Polymer Matrix for Novel 3D Printing Applications in Space; PI Ubaldo M. Córdova-Figueroa (UPRM), CoPI Carlos Martinez (Purdue), SP John McQuillen (NASA Glenn Research Center); \$300,000; 2 Years. (Awarded)
26. NSF Collaborative Research: EPIIC: Strategic University Practices to Expand Research (SUPER) Partnerships; PI Ubaldo M. Córdova-Figueroa (UPRM); \$400,000; September 1, 2024 to August 31, 2027. (Awarded)
27. Huck Institutes of the Life Sciences (Huck) and the Materials Research Institute (MRI) Inter-Institutional Partnerships for Diversifying Research (IPDR) Program: Ultrasound microfluidic cell manipulation and separation; PI Igor Aronson (Penn State), CoPI Ubaldo M. Córdova-Figueroa (UPRM); \$15,000 (funding remains in PSU); September 1, 2024 to August 31, 2025. (Awarded)
28. NSF Artificial Intelligence (AI) Research Institute, Theme 2: AIMS: AI-Enabled Materials Discovery, Design, and Synthesis Institute; PI Vasant Honavar (Penn State), etc., SP Ubaldo M. Córdova-Figueroa, SP Arturo Hernández-Maldonado; \$20M (\$414,000 to UPRM as subaward); 5 Years. (Submitted)

29. NSF - Collaborative Research: RII Track-2 FEC: Curbing climate change and improving resilience in rural communities by creating new lifecycles for mixed waste plastics and biomass; 09/01/2024-08/31/2028; Center-\$6M/4 years; UPRM \$1.8 M/4 years (Role: PI).
30. Dr. Arturo Hernández submitted the proposal titled "NASA EPSCoR Rapid Response Research (R3) RFA-034: Low Consumable Environmental Control and Crew Systems" to UPRM CID for consideration in internal competition. December 11, 2024
31. NFS-CAWT- Materials Discovery for Cardiorespiratory Disease Biomarker Detection Using Machine Learning (PI) DSuleiman (Pending).
32. DOE: Improving Polymer Electrolytes Through Controlling the Interplay between Microstructure and Proton Transport (PI), DSuleiman (LOI approved-Full proposal to be submitted next semester).
33. NASA-MUREP: Center for Nanomaterials and Chemical Sensing for Water Quality to Ensure Food Safety for Terrestrial Systems (Co-PI) DSuleiman (Pending).
34. NSF-ERC: Engineering Research Center (ERC) on Reliable, Efficient and Sustainable Electrochemical Transformations and Separations (RESETS) (Co-PI) DSuleiman (Pending)
35. Integration of Bifurcation Analysis and Multiobjective Nonlinear Model Predictive control of Problems Involving Molecular Networks and Metabolic Pathways, NSF, LSridhar
36. Bifurcation analysis and Multiobjective nonlinear model predictive control of cancer therapy models, NSF, LSridhar
37. A mathematical framework involving bifurcation analysis and multiobjective nonlinear model predictive control to deal with environmental engineering problems, NSF, LSridhar
38. STTR Phase I: Hand-Held Induction Heaters for Pancreatic and Prostatic Cancer Treatment, (senior personel), \$275,000 (\$83,483), 10/1/2024-9/30/2025. M. Torres AWARDED
39. Modeling the Gut-Immune Axis Using a Human Organoid-Derived Microphysiological System in Space. Maribella Domenech (PI, UPRM) and Andres Garcia (MPI, Georgia tech), Ankur Singh (Co-I Georgia tech), Rhodium Scientific. Tissue Chips in Space 2.0 -NIH. Total funds \$2,882,834.00 (phase 1, 3-years), \$1,995,107.00 (phase 2, 2-years)
40. Engineering Oncoaging Models of Breast Cancer Harnessing Patient-Derived Extracellular Matrix Signals. Maribella Domenech (PI, UPRM), Camilo Mora (co-PI, UPRM) and Rosa Velez (co-I, Southern pathology). NIH, Total: \$400,845 (2 years)
41. A biodegradable collagen hydrogel as a regenerative approach for the treatment of Stress Urinary Incontinence in women. CHEN, BERTHA (co-PI, Standford), MALHOTRA, RAJ (PI, Smartweave) and Maribella Domenech (co-I, UPRM). NIH SBIR/STTR. Total: \$2,169,691 (3 years)
42. SBIR Phase I: Novel surface coatings for urethral slings to mitigate inflammatory responses in Diabetic patients. MALHOTRA, RAJ (PI, Smartweave), CHEN, BERTHA (co-I, Standford), and Maribella Domenech (co-I, UPRM), NSFSBIR/STTR. Total \$305,000 (1 year).
43. Enhancing PR Biopharmaceutical & Deep-Tech Innovation Ecosystem Through CytoBOOS; FY 2024 Build to Scale, U.S. Economic Development Administration; \$3,054,000; PI Moraima De Hoyos-Ruperto, Co-PI Marien Mendez, Co-PI Ubaldo M. Córdova-Figueroa; 02/03/2025 - 02/02/2027 (submitted)
44. Workforce Development, Innovation, Research and Entrepreneurship (WIRE) Center; FY23 EDA Disaster Supplemental; \$750,000; PI Ubaldo M. Córdova-Figueroa, Co-PI Moraima De Hoyos-Ruperto (not funded)
45. RISE to the BEST graduate Research pending 12/2024/-11/2029 NIH, CMora, Senior personnel
46. Engineering Oncoaging model of breast cancer harnessing patient-derived matrix signaling, Pending, 08/01/2025 -07/31/2027, \$275000 / 2 years NIH NIA, CMora, Co-PI
47. Modeling the Gut-Immune Axi Using a Human Organoid-Derived Microphysiological System in Space, Pending, 07/01/2025-06/30/2030, \$3,728,136 / 5 years NIH NCATS, CMora, Co-investigator
48. MRI: Track 1 Acquisition of an Atomic Force Microscope to Support Education and Research in Nanoscale Material Science, CAcevedo, total requested: \$764,055, submitted: November 15, 2024
49. Preproposal Re-submitted to Puerto Rico Science Trust: Advancing Renewable Solutions for Biomedical Applications. MLatorre, Submitted January 10, 2025. \$150,000
50. NSF: (Co-PI) Collaborative Research: FEC: Manufacturing Sustainable Materials for Medical Uses from Renewable Feedstocks. MLatorre, submitted January 27, 2025. \$2,000,000
51. DOE VFP: Hybrid Electrodialysis System with Redox-Enhanced Porous Electrodes for Arsenic Detection and Removal, PBaldaguez (PI), (Pending).
52. USGS PR CLIMA: Dual-Phase Redox Flow Desalination System for Heavy Metal Detection and Water Desalination, PBaldaguez (PI), (Pending)
53. PR Science Trust ARG: Molecularly Imprinted Electrochemical Sensor for Lactic Acid Detection in Sweat for Non-Invasive Biomonitoring, PBaldaguez (PI), (Pending).
54. NSF EPSCOR Fellow: Electrochemically Mediated Solutions for Selective Arsenic Detection and Remediation, PBaldaguez (PI), (Pending)
55. Sloan Foundation: Lactic Acid Biomonitoring for Electrochemical Detection in Sweat, PBaldaguez (PI), (Pending)

#### New Projects:

1. "RII Track-4: NSF: Design of Bioresponsive Liquid Crystal Droplets for Sensing in Cellular Environments" PI: Claribel Acevedo-Vélez (collaborators: David Lynn and Sean Palecek, UW-Madison) Submitted to NSF EPSCoR in April 2023. Award Amount: \$299,902. (Awarded on 6/November/2023)
2. "BioFoundry: Artificial Intelligence-Driven RNA BioFoundry" Lead PI: Daeyeon Lee (co-PIs: Claribel Acevedo-Vélez, David Issadore, Zachary Ives, Drew Weissman) PI at UPRM: Claribel Acevedo-Vélez. Sub-award Amount: \$1,999,476. Submitted to NSF BioFoundries to Enable Access to Infrastructure and Resources for Advancing Modern Biology and Biotechnology (BioFoundries) in October 2023. Total Amount: \$24,000,000.
3. "UPR-UW PREM: Center for Advancing Research and Training for STEM Success". (PI: Claribel Acevedo; co-PI: Yomaira Pagan, Paul Voyles, Shelly Grandell). Submitted March 2024. Total Amount: \$4,200,000. (Awarded on 24/July/2024).
4. PRSTRT-ARG Polymer Nanocomposite Membrane Assembly for Water Purification on the International Space Station DSULEIMAN (PI).
5. DODI: Acquisition of an NMR for the Study of Novel Multi-Ionic Polymers, DSULEIMAN (PI), (Approved-New).
6. Puerto Rico Science, Technology and Research Trust - Commercialization of a Turn-key System for Sampling and Analysis of Flowing Powder Blends. \$150,000, R. Romanach, R. Mendez. awarded
7. PR-INBRE-IDeA. Small Instrument Grant. Ultracentrifuge for Isolation of Extracellular Vesicles 60K CMORA (PI)
8. PR-INBRE-IDeA\_ Development Award for Early-Stage Investigators "Matrix-bound Vesicles as Tissue- Specific Signaling Factors for Wound Healing in Vocal Fold Treatment" CMORA (PI) \$300,000
9. PR INBRE Feasibility Grants: TMT-Proteomic analysis of total protein extracts from yeast *S. cerevisiae* cultures in microgravity conditions (ACCEPTED) (\$5,150) M. Latorre
10. "Impact of Microgravity on microcarrier culture of mesenchymal stem cells". Maribella Domenech (PI, INQU, UPR-Mayaguez). PRTRUST. Total: \$50,000, 05/2024 – 12/2025.
11. Cracking the developmental blueprint of life: Omics, Computational Science, and AI. Riccardo Pappa (PI, BIOL, UPR-Rio Piedras), Maribella Domenech (Co-PI, INQU, UPR-Mayaguez), NSF, Total: \$7,000,000 (~\$350,000 sub-award to UPR-Mayaguez) 08/2024 – 12/2029.
12. "Bioink Innovation: BioExtend Bioink Technology for 3D bioprinting applications". Maribella Domenech (PI, INQU, UPR-Mayaguez) PRTRUST, Total: \$75,000, 08/2024 – 12/2025

13. NSF Collaborative Research: HSI Pilot Project: PRACTICE - Performance Refinement through AI Correction in Technical Writing for Chemical and Electronics Engineering; PI Ubaldo M. Córdova-Figueroa (UPRM), CoPI Gabriel Castelblanco (University of Florida), CoPI Elías Beauchamp (UPR-Bayamón); \$300,000; September 15, 2024 – August 31, 2026. (Awarded)
14. NASA MOSAICS: Controlled Assembly of Amphiphilic Janus Particles in Polymer Matrix for Novel 3D Printing Applications in Space; PI Ubaldo M. Córdova-Figueroa (UPRM), CoPI Carlos Martinez (Purdue), SP John McQuillen (NASA Glenn Research Center); \$300,000; 2 Years. (Awarded)
15. NSF Collaborative Research: EPIIC: Strategic University Practices to Expand Research (SUPER) Partnerships; PI Ubaldo M. Córdova-Figueroa (UPRM); \$400,000; September 1, 2024 to August 31, 2027. (Awarded)
16. Huck Institutes of the Life Sciences (Huck) and the Materials Research Institute (MRI) Inter-Institutional Partnerships for Diversifying Research (IPDR) Program: Ultrasound microfluidic cell manipulation and separation; PI Igor Aronson (Penn State), CoPI Ubaldo M. Córdova-Figueroa (UPRM); \$15,000 (funding remains in PSU); September 1, 2024 to August 31, 2025. (Awarded)

#### On Going Projects:

1. ERC-NSF, UPRM- Engineering Research Center for Cell Manufacturing Technologies- Khri Roy (PI-Lead Georgia Tech), Sean Palecek (Co-PI, UW-Madison), UPRM personnel: Madeline Torres-Lugo (Co-PI, UPR-Mayaguez), Maribella Domenech (INQU Testbed 3 Co-lead), Jorge Almodovar (INQU Testbed 1 Co-lead), Wandaliz Torres (ININ, senior personnel), Agnes Padovani (INCM, Education Co-lead) and Pedro Resto (INME, senior personnel). \$ 2,570,832 of total \$10,000,000, 10/01/2022 to 08/14/2027.
2. Wisconsin - Puerto Rico Partnership for Research and Education in Materials (Wi(PR)2EM), Ubaldo M. Córdova-Figueroa (PI), Nicholas Abbott (CoPI), Nelson Cardona (CoPI), Anne Gillian-Daniel (CoPI); NSF, \$4.2M, 10/01/18-10/31/2024 (6 years), (SP) Aldo Acevedo, Claribel Acevedo, Arturo Hernández, Yomaira Pagán, Rodolfo Romañach.
3. Los doctores Arturo Hernández-Maldonado (PI), Brad Weiner (Co-PI, UPR-RP) y Madeline Torres-Lugo (Co-PI) recibieron aprobación de la propuesta “Center for the Advancement of Wearable Technologies (CAWT): Engineered (Bio)Interfaces, Energy Harvesting/Storage and Data Analytics for Health and Diagnostic Monitoring” por parte de NSF y por \$17,100,000/5 años. Doctors Ubaldo Cordova and Maribella Domenech also participate in this project, as well as a group of professors from UPR-RP, and other educational and private institutions in Puerto Rico (41 researchers and educators, 23 institutions in total). 1 de julio 2019- jun/30/24.
4. Doctors Arturo J. Hernández-Maldonado and Yomaira Pagán, together with researchers from the University of Puerto Rico – Río Piedras received approval of the proposal “Puerto Rico Space Partnership for Research, Innovation and Training to Engage the Next Generation of Explorers (PR-SPRInT)” por parte del programa NASA MIRO y por \$3,000,000 por tres años. 12 de julio de 2019-9/30/24.
5. DoE Membrane-Catalyst Co-Design for Transformative Manufacturing. UPRM Subaward PI, sep/1/22, aug/31/25, \$574,383. Externos (DoE), Dr. Arturo J. Hernández-Maldonado
6. NASA - Center of sustainable technologies for water reclamation and reuse (CSTWR2). NASA, \$1,125,000 / 3 years, DSuleiman (Co-PI) (Approved). (10/2020 – 8/2025)
7. Distinct contributions of mesenchymal cell niches in the therapeutic potential of the hedgehog pathway in triple negative breast cancer. Maribella Domenech (PI, INQU, UPR-Mayaguez), Wandaliz Torres-García (Co-I, ININ, UPR-Mayaguez) and Madeline Torres-Lugo (Senior personnel, INQU, UPR-Mayaguez). NIH-NIGMS SC1, \$ 1,398,145 total costs, 08/2020-07/2024.
8. “Membrane-Catalyst Co-Design for Transformative Manufacturing” to US DoE. Submitted on March 16, 2022 – by Dr. Michael Tsapatsis (Johns Hopkins U.), Dr. Arturo Hernández-Maldonado, Dr. Ilja Siepmann (U. Minnesota), Dr. Rebecca Lindsey (Lawrence Livermore National Lab.), Dr. Chao Wang (Johns Hopkins U.), and Chao Wang (Johns Hopkins U.), and Brandon Bukowski (Johns Hopkins U.) March 17, 2022 – Proposal “Membrane-Catalyst Co-Design for Transformative Manufacturing” submitted to US DoE by Dr. Michael Tsapatsis (Johns Hopkins U.), Dr. Arturo Hernández-Maldonado, Dr. Ilja Siepmann (U. Minnesota), Dr. Rebecca Lindsey (Lawrence Livermore National Lab.), Dr. Chao Wang (Johns Hopkins U.), and Dr. Chao Wang (Johns Hopkins U.), and Dr. Brandon Bukowski (Johns Hopkins U.) was approved. The group submitted formal proposal to US DoE for \$4,500,000/3 years.
9. NIH-NIGMS, Diversity Supplement Program - Effect of Extracellular Matrix Components (tumor vs. normal) on the Hedgehog Pathway in Triple-Negative Breast Cancer–Maribella Domenech (PI), and Camilo Mora (faculty candidate). \$300,000. 08/01/2022 to 07/30/2024.
10. NSF-MRI: Acquisition of a Zeiss 560 VP FE-SEM for Chemical and Surface Characterization and Training (SP), DSuleiman (Approved-New).  
Phase 2: Propel for the E-Team Program Venturewell Winter 2024: Per3DPrints (December 1, 2023-June 30, 2025). MLatorre, Accepted \$19,988.00.
11. “R11 Track-4: NSF: Design of Bioresponsive Liquid Crystal Droplets for Sensing in Cellular Environments” PI: Claribel Acevedo-Vélez (collaborators: David Lynn and Sean Palecek, UW-Madison) Submitted to NSF EPSCoR in April 2023. Award Amount: \$299,902. (Awarded on 6/November/2023)
12. Extracellular vesicles (EVs) isolated from the Endothelial Extracellular Matrix to develop an EV-Biosensor for Monitoring Cardiovascular pathologies. Dr. C. Mora
13. “BioFoundry: Artificial Intelligence-Driven RNA BioFoundry” Lead PI: Daeyeon Lee (co-PIs: Claribel Acevedo-Vélez, David Issadore, Zachary Ives, Drew Weissman) PI at UPRM: Claribel Acevedo-Vélez. Sub-award Amount: \$1,999,476. Submitted to NSF BioFoundries to Enable Access to Infrastructure and Resources for Advancing Modern Biology and Biotechnology (BioFoundries) in October 2023. Total Amount: \$24,000,000.
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18. PR-INBRE-IDeA. Small Instrument Grant. Ultracentrifuge for Isolation of Extracellular Vesicles 60K CMORA (PI)
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21. “Impact of Microgravity on microcarrier culture of mesenchymal stem cells”. Maribella Domenech (PI, INQU, UPR-Mayaguez). PRTRUST, Total: \$50,000, 05/2024 – 12/2025.
22. Cracking the developmental blueprint of life: Omics, Computational Science, and AI. Riccardo Pappa (PI, BIOL, UPR-Rio Piedras), Maribella Domenech (Co-PI, INQU, UPR-Mayaguez), NSF, Total: \$7,000,000 (~\$350,000 sub-award to UPR-Mayaguez) 08/2024 – 12/2029.
23. “Bioink Innovation: BioExtend Bioink Technology for 3D bioprinting applications”. Maribella Domenech (PI, INQU, UPR-Mayaguez) PRTRUST, Total: \$75,000, 08/2024 – 12/2025
24. NSF Collaborative Research: HSI Pilot Project: PRACTICE - Performance Refinement through AI Correction in Technical Writing for Chemical and Electronics Engineering; PI Ubaldo M. Córdova-Figueroa (UPRM), CoPI Gabriel Castelblanco (University of Florida), CoPI Elías Beauchamp (UPR-Bayamón); \$300,000; September 15, 2024 – August 31, 2026. (Awarded)



25. NASA MOSAICS: Controlled Assembly of Amphiphilic Janus Particles in Polymer Matrix for Novel 3D Printing Applications in Space; PI Ubaldo M. Córdova-Figueroa (UPRM), CoPI Carlos Martinez (Purdue), SP John McQuillen (NASA Glenn Research Center); \$300,000; 2 Years. (Awarded)
26. NSF Collaborative Research: EPIIC: Strategic University Practices to Expand Research (SUPER) Partnerships; PI Ubaldo M. Córdova-Figueroa (UPRM); \$400,000; September 1, 2024 to August 31, 2027. (Awarded)
27. Huck Institutes of the Life Sciences (Huck) and the Materials Research Institute (MRI) Inter-Institutional Partnerships for Diversifying Research (IPDR) Program: Ultrasound microfluidic cell manipulation and separation; PI Igor Aronson (Penn State), CoPI Ubaldo M. Córdova-Figueroa (UPRM); \$15,000 (funding remains in PSU); September 1, 2024 to August 31, 2025. (Awarded)
28. Department of Energy – BOTTLE: Development of catalytic strategies for the production of monomer building blocks; 10/01/2024-09/30/2026; \$400,000/2-years. YPagan (PI – Awarded)

## Chemical Engineering

### Publications Submitted to Peer-reviewed Journals:

1. Lin, S.; Liu, B.; Wang, Y.; Zhao, Y.; Hernández-Maldonado, A.J.; Chen, Z. Rational Design of Zeolites to Remove Siloxanes with High Adsorption Loading and Enhanced Adsorption Energy. *Appl. Surf. Sci.* **2024**, *revision submitted*.
2. From Isolation to Detection, Advancing Insights into Endothelial Matrix-Bound Vesicles. *Extracellular Vesicle Journal*, Dr. C. Mora, Under Revision
3. Carlos Barreto and Maribella Domenech; **"Integrin Stimulation by Collagen I at the Progenitor Stage Accelerates Maturation of Human iPSC-Derived Cardiomyocytes"**. Submitted – In peer review
4. Raúl S. Rangel-Gil, Juan M. Nasralla-Álvarez, Rodolfo J. Romañach, Rafael Méndez. Blend uniformity monitoring in a continuous manufacturing mixing process for a low-dosage formulation using a stream sampler and near infrared spectroscopy Submitted in April 2024 to International Journal of Pharmaceutics.
5. Aristizabal-González, C.; Muñoz-Senmache, J.C.; Prerna; Siepmann, J.I.; Tsapatsis, M.; Hernández-Maldonado, A.J. "Ammonia Adsorption at High Temperature and Pressure using Sodium Containing Aluminosilicates: Selectivity over Nitrogen and Multicycle Working Capacities." *Ind. Eng. Chem. Res.* **2024**, *submitted*.
6. Kang, N.; Muñoz-Senmache, J.C.; Prerna; Gao, Z.R.; Aristizabal-González, C.; Prelesnik, J.; Liu, H.-F.; Ashtiani, P.H.; Hadi, R.P.; Wang, C.; Bukowski, B.C.; Hernández-Maldonado, A.J.; Siepmann, J.I.; Tsapatsis, M. High Temperature and Pressure Pure-Silica Zeolite Ammonia Adsorbents and Their Use in Adsorption-Enhanced Catalytic Reactors. *Angew. Chem.* **2024**, *submitted*.
7. Aristizabal-González, C.; Mullangi, D.; Muñoz-Senmache, J.C.; Prelesnik, J.; Prerna; Hernández-Maldonado, A.J.; Siepmann, J.I.; Tsapatsis, M. A Review of Ammonia (NH<sub>3</sub>) Adsorption in Porous Solids. *Chem. Rev.* **2024**, *submitted*.
8. Lin, S.; Liu, B.; Wang, Y.; Zhao, Y.; Hernández-Maldonado, A.J.; Chen, Z. Rational Design of Zeolites to Remove Siloxanes with High Adsorption Loading and Enhanced Adsorption Energy. *ACS Omega* **2024**, *submitted*.
9. Carlos Barreto and Maribella Domenech; **"Integrin Stimulation by Collagen I at the Progenitor Stage Accelerates Maturation of Human iPSC-Derived Cardiomyocytes"**. Submitted – In peer review
10. Juan M. Nasralla-Álvarez, Dhavalkumar Patel, Carlos Flores, Rodolfo J. Romañach, Rafael Méndez. Effects of the operating parameters for a high API concentration continuous mixing process feasibility study. Submitted in September 2024 to the International Journal of Pharmaceutics.
11. F. Cifuentes-Urtubey, P. A. Baldaguez Medina, J. E. Lorenzo, N. Mamaril, (2025, February) Empowering Hispanic Engineering Students for Success in Graduate Education with Hybrid Mentorship, 2025 Collaborative Network for Engineering & Computing Diversity (CoNECD), San Antonio, TX.
12. *Kinetics of Liquid Phase Glycerol Hydrodeoxygenation over Molybdenum Carbide Powder Catalyst*. Ammal, Salai; Albarracin-Suazo, Sandra; Lin, Zhexi; Chen, Jingguang; Pagán-Torres, Yomaira\*; Heyden, Andreas; *ACS Catalysis*, Under review. (Impact factor: 11.3)

### Publications Approved in Peer-reviewed Journals:

- o Book: Monocytes and Macrophages in Development, Regeneration, and Disease. DOI:10.1007/978-3-031-65944-7 Chapter Title: Macrophages and the Extracellular Matrix.
- o J. C. Rivera-Díaz and D. Suleiman. "Permeation of Urea and Water through Sulfonated Poly(styrene-isobutylene-styrene) Membranes with Counterion Substitution." *Journal of Applied Polymer Science*, 2024, e55256; <https://doi.org/10.1002/app.55256>
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## Invention Disclosure:

1. Invention Id: 23-031-DISC-UPR, Title: Sulfonated poly(arylene ether sulfone) and sulfonated poly(arylene ether ketone) membranes for improved fuel cell performance, D Suleiman.

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### Department of Engineering Sciences and Materials

The Department of Engineering Sciences and Materials, with a multidisciplinary faculty, ranks second in indirect cost recovery and fourth in proposal submissions among engineering departments. Research efforts have grown through lab renovations and graduate student support. Active projects, funded by agencies such as NSF, NASA, NOAA, NIH, DoE, and USDA, focus on areas including Materials Science, Fluid Mechanics, Bioengineering, Oceanographic Engineering, Structures, and Sustainability. One faculty member earned institutional incentives and secured full-year time buyout through external funding.

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- Carlos A. Peña-Becerra, William A. Pacheco-Cano, Daniel F. Aragonés-Vargas, Agustín Irizarry-Rivera and Marcel Castro-Sitiriche "Barrio Level Assessment of Solar Rooftop Energy and Initial Insights into Energy Inequalities in Puerto Rico", Solar 2025, 5, 28.
- Fabio Andrade; Jesus D. Vasquez-Plaza; Adriana Luna; Marcel Castro-Sitiriche; Agustin Irizarry, "Microgrids for Resilience: Powering Puerto Rico's Future: The role of community microgrids in improving resiliency for Puerto Rico's remote areas", IEEE Electrification Magazine, Volume 13, Issue 2, pp 26-36, June 2025.
- Díaz, N.L., Díaz, J.L., García, Y.V., Luna, A.C. (2024). Cooperative and Transactive Integration of Multiple Microgrids. In: Shahnian, F., Guerrero, J.M. (eds) Microgrids and Virtual Power Plants. Power Systems. Springer, Singapore. [https://doi.org/10.1007/978-981-97-6623-9\\_15](https://doi.org/10.1007/978-981-97-6623-9_15)
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- Zelada-Quiroz, Cindy M.; Ortiz-Rivera, Eduardo I.; Application of 3D Printing and Design in Healthcare: A Focus on Undergraduate Research to Attract Students to Bioengineering and Related Disciplines" 2024 IEEE Frontiers in Education (FIE), October 13-16, 2024 Washington DC, USA
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- Akhtar, Zeeshan; Ortiz-Rivera, Eduardo I.; Colón-Grid-Forming Inverter: A Review and Educational Perspective 024 IEEE Frontiers in Education (FIE), October 13-16, 2024 Washington DC, USA
- Colón-González, Alanis\*; Ortiz-Rivera, Eduardo I.; Implementing Problem-Based and Experiential Learning for Undergraduate Students in Power Electronics Applied to Renewable Energy Education (FIE), October 13-16, 2024 Washington DC, USA
- Batista\_Álvarez, Natanael\*; Lopez-Cardalda, Guillermo; Ortiz-Rivera, Eduardo I.; ESSPI as a Tool for STEM Education in Energy Backup System Design 2024 IEEE Frontiers in Education (FIE), October 13-16, 2024 Washington DC, USA
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#### Department of Computer Science and Engineering – Publications

1. Justin S. Lee, Nicholas Palmer, Junfei Xie, Yan Wan, Kejie Lu, Shengli Fu, "RAPTURE: a Remotely Accessible Platform of Testbeds for UAS Research and Education", in Proc. AIAA 2024, jul 2024.
2. Jinran Zhang, Kejie Lu, Yan Wan, Junfei Xie, Shengli Fu, "Empowering UAV-Based Airborne Computing Platform with SDR: Building an LTE Base Station for Enhanced Aerial Connectivity", IEEE Transactions on Vehicular Technology, Vol. 73, No 10, pp. 15513-15524, Oct. 2024.
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4. Andrea Gomez, Emmanuel Arzuaga, "Comparing YOLO Models for Real Time American Sign Language Recognition", International Symposium on Intelligent Computing and Networking (ISCIN 2025).
5. Michael Alvarez, Emmanuel Arzuaga, Heidy Sierra, "Virtual Stain and Phase Estimation using Encoder-Decoder Networks", International Symposium on Intelligent Computing and Networking (ISCIN 2025).

#### Mechanical Engineering

- **Patents**
  - S. Cancelos, M. Rivera, E. López, W. García. "Method and system for increasing the gas-dissolution rate of a bubble in a liquid media via non-invasive resonant acoustic pressure". US Patent 12,296,200 B2. United States Patent and Trademark Office. May 13, 2025
- **Provisional Applications**
  - Marco Menegozzo, Andres Cecchini Brigi, Frederick A. Just-Agosto, David Serrano Acevedo. "SCUTOIDAL SUB-CELL AND CELL ARRANGEMENTS" - US Patent Application -71900/373750 , July 12, 2024.
  - P. J. Resto-Irizarry, "Autonomous Portable Water Monitoring System for Rapid Enterococcus Detection," Provisional Patent Application, Jul. 2024. PAT: 63/540,469.
  - P. J. Resto-Irizarry, "Automated Biosensor Board for Rapid Detection of Fecal Bacteria in Water," Provisional Patent, Feb. 2024. PAT: 63/539,360.
  - P. J. Resto-Irizarry, "Autonomous Microfluidic Device for Water Quality Analysis," Provisional Patent Application, Mar. 2022. PAT: 63/307,745, PCT/US2023/012505

#### Conference presentations, poster presentations and participation in workshops

1. J. Amell, J. Camacho, M. Guerrero, F. Matallana, O. Orozco, O. Tafur, U. Ciri "Assessing Puerto Rico's Renewable Energy Potential: Solar, Wind, Salinity Gradient, and Ocean Thermal Power". Poster Presentation. "Energy Security and Economic Development: From the Caribbean to the Pacific", Bayamon, PR, February, 26-28, 2025.
2. P Medard, U Ciri "Waves Effects on Wake and Power Generation of a Single Horizontal Axis Wind Turbine Using Coupled Level-Set Method and Large Eddy Simulation". Poster Presentation. "Energy Security and Economic Development: From the Caribbean to the Pacific", Bayamon, PR, February, 26-28, 2025.
3. O Tafur Ushinahua, U Ciri "Numerical study of effects of bathymetry slope on wave hydrodynamics". Poster Presentation. "Energy Security and Economic Development: From the Caribbean to the Pacific", Bayamon, PR, February, 26-28, 2025.
4. Paper presentation co-author in two presentations at the APS Division of Fluid Dynamics, Salt Lake City, UT, November 24-26 2024
5. Co-author of a presentation given by graduate student Pharlin Ménard at the NAWEA/WindTech, New Brunswick, NJ, October 30-November 1, 2024
6. Co-author of a presentation given by Dr. Ciri's collaborator Larry K. Beng (PNNL) at the AGU24 Annual Meeting in Washington, DC, December 9-13.
7. Pedro Quintero. "Supporting manufacturing Competitiveness with Onsite Energy". Oral Presentation. First Puerto Rico Industrial Power Connect Conference, March 27, CooperVision, Juana Diaz, PR.
8. Pedro Quintero. "Gas Turbine Tropicalization: Incorporating Absorber for Intake Air Conditioning". Oral Presentation. Second Puerto Rico Industrial Power Connect Meeting, June 27, Baxter, Aibonito, PR.
9. Andre Amador, Patricia Chardón, Edward Cruz, Luis Rodríguez, Julian Morell, Kevin Martínez, Julio Morell. Poster presentation: "Vertical Extent and Influence of Mesoscale Eddies on Marine Heatwaves in the Northeastern Caribbean" in "Optimizing Ocean Observing Networks for Detecting the Coastal Climate Signal Workshop" (September 23-25, 2024)
10. Jhon Herrera, Andre Amador, Gustavo Martinez. Oral presentation: Developing a Predictive System for Harmful Algal Blooms in the San Jose Lagoon, Puerto Rico in "Optimizing Ocean Observing Networks for Detecting the Coastal Climate Signal Workshop" (04/2025)

11. Daniela Herrera Molina, Carlos Marín, Juan M. Lopez Encarnación, Silvina Cancelos. Oral Presentation. Modeling Goldberg polyhedral like water nanobubbles structure stability using density functional theory. 91st Annual Meeting of the Southeastern Section of the APS Thursday–Saturday, October 24–26, 2024; UNC Charlotte, North Carolina
12. H. Valle, S. Cancelos, C. Marín “Detailed Characterization of bubble motion for Enhancing Heat Transfer Correlations Using High-Speed PIV Technology. Poster Presentation. "Energy Security and Economic Development: From the Caribbean to the Pacific", Bayamon, PR, February, 26-28, 2025.
13. W. N. Ríos, S. Cancelos, C. Marín : “Exploring Fast Neutron Directionality through Cavitation Rate ‘Musicality’. Poster Presentation. "Energy Security and Economic Development: From the Caribbean to the Pacific", Bayamon, PR, February, 26-28, 2025.
14. R. Báez, S. Cancelos, C. Marín “An Experimental Facility For Assessing the risk of Bubble Rupture In Molten Salt Nuclear Reactors”. Poster Presentation. "Energy Security and Economic Development: From the Caribbean to the Pacific", Bayamon, PR, February, 26-28, 2025.
15. O. Orozco, C. Marín, S. Cancelos. Reducing the cost of hydrogen production using piezoelectric nanoparticles actuated by acoustic chambers. Poster Presentation. "Energy Security and Economic Development: From the Caribbean to the Pacific", Bayamon, PR, February, 26-28, 2025.
16. Participation in the EOP (Engineering for One Planet) Faculty Workshop in Villanova University. June 3-7 2024. Villanova, Pennsylvania USA.
17. Oral presentation of the Nuclear Engineering Minor at the CIAPR by Dr. Cancelos and ANS UPRM Chapter Mariana Guido. Feb 1 2025 San Juan PR
18. Dra. Sheilla Torres was invited by The White House National Space Council and the Office of Public Engagement to attend the Young Hispanic Leaders in the Space Industry roundtable on Monday, September 30th at the White House. This roundtable intended to engage the next generation of Space leaders, highlight the career paths and contributions of Latinos in the space enterprise and amplify the Biden-Harris Administration’s continued commitment to the Latino community.
19. Dra. Sheilla Torres was invited to participate in the Hispanic Heritage Month celebration in the NASA headquarters in Washington, D.C.
20. Torres-Nieves, S.N., “The Growth and Vision of the Aerospace Ecosystem: Academics and Research and Development for Workforce Development”, Puerto Rico Aerospace Technology Consortium 10th Anniversary Summit, February 2025, Manatí, Puerto Rico.
21. Morales, S. and Torres-Nieves, S.N., Metocean modeling for reliable wind-wave characterization for offshore wind applications, 2025 Puerto Rico Louis Stokes Alliance for Minority Participation 58th Junior Technical Meeting and 43th Puerto Rico Interdisciplinary Scientific Meeting (JTM/PRISM), April 2025.

#### **Papers submitted under review**

1. Andres Cecchini, Marco Menegozzo, Emerson Roman, Geometric Parameter Analysis and Optimization of Additive Manufactured Hexagonal Sandwich Composite Beams under Three-Point Bending, manuscript submitted to the journal “Engineering Structures” in March 2025.
2. Juan Perez, Silvina Cancelos. Experimental Analysis of Individual Forces in Force-Balance Model for Bubble Departure Diameter Prediction. ASME Journal of Nuclear Engineering and Radiation Science. Submitted October 2024, first review received December 2024 and review version submitted by Feb 2025. Status Pending.
3. R. F. Crespo, K. E. Altamar, P. R. Irizarry, and D. Suleiman, “Surface Modification of Gold Screen-Printed Electrodes with Sulfonated Polymer for Improved Electrochemical Detection of Cardiac Troponin I,” ACS Omega, under review, 2025.

#### **Books**

1. Materials Science: Theory and Engineering Springer 2024 Nestor Perez
2. Phase Transformation in Metals, Mathematics, Theory, and Practice 2nd Edition 2025 Springer Nestor Perez

## Appendix F. PREAS Participation in Community Initiatives Summary.

| Educational Programmatic Area                              | Initiative                                                                              |
|------------------------------------------------------------|-----------------------------------------------------------------------------------------|
| <b>Agriculture, Marketing and Natural Resources (AMNR)</b> | <b>Coffee</b>                                                                           |
|                                                            | Taro Festival, Camuy, January 25-26, 2025                                               |
|                                                            | Field Trip: Growing Sweet Potato, Gurabo, July 3, 2024                                  |
|                                                            | Studies and research on roots and tubers, Isabelita, October 23, 2024                   |
|                                                            | Coffee quality and brewing methods for university students, Adjuntas, June 2024         |
|                                                            | Coffee roasting and tasting in Dairy Festival, Hatillo June 2024                        |
|                                                            | Field Trip: Contour coffee planting, Adjuntas, June 2024                                |
|                                                            | Coffee harvesting and its importance in the cup, Para la Naturaleza, Lares, August 2024 |
|                                                            | Awards Ceremony Organization and Coordination La Taza de Oro, Adjuntas 2024             |
|                                                            | Coffee cupping in PROCAFE, Adjuntas - September 2024                                    |
|                                                            | Competition La Taza de Oro 2024, Mayagüez, September 2024                               |
|                                                            | Educational Table: Specialty Coffee in Cafesta, San Juan, October 2024                  |
|                                                            | <b>Dairy</b>                                                                            |
|                                                            | Workshop: Pasture management and sample collection for analysis                         |
|                                                            | Workshop: Heifer management                                                             |
|                                                            | Counseling: Milk Quality                                                                |
|                                                            | Counseling: Pasture Management                                                          |
|                                                            | Workshop: Automation in agricultural practices in dairy farms                           |
|                                                            | Workshop: Cheese making for young people                                                |
|                                                            | <b>Agricultural Economy</b>                                                             |
|                                                            | Project: Farm Management Project                                                        |
|                                                            | Workshop: Developing Your Agribusiness                                                  |
|                                                            | Workshop: Grant Proposal Writing                                                        |
|                                                            | <b>Natural Resources</b>                                                                |
|                                                            | Workshop: Prevention and Control of Mosquito Reproduction                               |
|                                                            | Workshop: dealing with Avian Influenza                                                  |
|                                                            | Workshop: Rainwater Harvesting                                                          |
|                                                            | Workshop: Dealing with Natural Disasters                                                |
|                                                            | Workshop: Home Storage, Filtration, and Disinfection for Water Purification             |
|                                                            | Workshop: Agroecological Producers and Promoters Course                                 |
| <b>Family and Consumer Sciences (FCS)</b>                  | Workshop: Older adults improve their quality of life                                    |
|                                                            | Workshop: Improving nutritional food security in older adults                           |

| Educational Programmatic Area                    | Initiative                                                                                                                          |
|--------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------|
|                                                  | Workshop: Consumer Education and Financial Literacy                                                                                 |
|                                                  | Workshop: Food preservation: home canning and dehydration                                                                           |
|                                                  | Project: Ageism Project                                                                                                             |
| <b>Youth and 4-H Clubs</b>                       | Congress: Más que listos (Beyond Ready)                                                                                             |
|                                                  | Workshop: Path to a Healthy Life                                                                                                    |
|                                                  | Workshop: Youth, Empower Your Health                                                                                                |
|                                                  | Workshop: 4-H Food Preservation Mechanism / FCS-STEM                                                                                |
|                                                  | Workshop: Bugs & Fungi Adventure / AGRI-STEM                                                                                        |
|                                                  | Congress: Pollinators 4-H-Pollinator Habitat Ambassador Squad                                                                       |
|                                                  | Workshop: Four Legs 4-H                                                                                                             |
|                                                  | Workshop: OYE                                                                                                                       |
|                                                  | Workshop: Lead to Change / School for All                                                                                           |
|                                                  | Congress: National 4-H Conference                                                                                                   |
|                                                  | Workshop: STEAM Educational Path at the UPR Easter Festival, Río Piedras                                                            |
|                                                  | Congress: True Leaders, Bethesda, MD                                                                                                |
| <b>Community Resources Development and (CRD)</b> | Workshop: Action Plan for the Development of Safe Spaces. Bo. Paraíso Fajardo                                                       |
|                                                  | Workshop: Action Plan for Community Emergencies. Sector Guzmán, Río Grande                                                          |
|                                                  | Community Garden: Huerto Sonrisas de mi Tierra. Elena Robles, Orocovis                                                              |
|                                                  | Community Garden: Huerto Sonrisas de mi Tierra. Elena Robles, Orocovis                                                              |
|                                                  | Workshop: Community Needs Assessment Study. Bo. Santana, Sabana Grande                                                              |
|                                                  | Workshop: Development of an Emergency Plan, Santiago/Lima Community, Naguabo                                                        |
|                                                  | Workshop: Action Plan for Animal Sanctuary, Barranquitas                                                                            |
|                                                  | Project: Butterfly House and Community Garden Bravos de Boston, San Juan                                                            |
|                                                  | Proposal: USDA Rural Development Proposal to Fund the Installation of Meters in the Community Aqueduct, Anones Community, Naranjito |
|                                                  | Workshop: Action Plan for Veredas del Bosque Community, Río Hondo, Mayagüez                                                         |
|                                                  | Workshop: Business Plan for the Monte Grande Community, Cabo Rojo                                                                   |

## Appendix G. CTI Facilities Improvements

- **Upgrade to the wireless network:** As part of the improvements to the Campus' communications infrastructure, 500 wireless access points were acquired. This will improve the access of the university community to the Internet and the Campus' computer resources. This year over 190 wireless access points have been installed and configured, the implementation process continues. Several old access points were relocated to areas with less traffic.
- **Cabling Infrastructure Improvements:** This year special requests were received, repair and improvement projects were carried out on the Campus' cabling infrastructure including:
  - **Luis Monzón Building:** Hybrid and Normal Classrooms, audio visual equipment and LAN for projector and TVs
  - **Student Center Building - Social and Cultural Activities Office:** Structured cable installation.
  - **C.I.D. Investigation Lab:** Structured Cable installation
  - **Hotel Colegial: Students Residences:** Structured cable upgrade, installation due to first 3 floors remodeling.
  - **C.I.D. Pre Intervention Office:** Structured cable upgrade and installation.
  - **Sanchez Hidalgo Building:** Structured cable in the Library SH-109
  - **Chemistry Engineering Building:** Convert to Hybrid the Amphitheater
  - **Printing Building:** Structured cable in remodeling area for New Printers
  - **Luis Stefani Building:** CIIM: Examination Classroom for Certifications
- **Upgrade to the campus network equipment:** As part of the improvements to the Campus communications infrastructure, 216 communication switches were acquired. The implementation process continues, this year has been configured and installed around 130 network switches.
- **Preparation of classrooms for Hybrid Education:** As part of the initiative to prepare facilities for hybrid education, 5 more classrooms were equipped with audiovisual equipment for a total of 149 hybrid education facilities.
- **Services requests from the users.** During the 2024-2025 year, CTI responded to 1,080 requests. These include user support and technical problems.

## Appendix H. Buildings and Grounds Department Projects

- Careful and dedicated preparation for the 2025 Graduation ceremonies.
- Restoration of several curbs, as part of the repaving project on the UPRM main campus.
- Cleaning the storm drain system on the UPRM Main Campus.
- Working on the restoration of the gazebos in the UPRM Klumb Plaza.
- Maintenance of the perimeter fence on State Highway PR 108.
- Quebrada de Oro cleaning in preparation for hurricane season.
- Rehabilitation of the interior spaces of the UPRM Student Center.
- Vertical trench and drench work to fertilize and aerate the Gran Ceiba tree with the help of an arborist and guidance from the College of Agricultural Sciences.
- Restoration of the space's lighting.
- Rehabilitation of the Eugenio María de Hostos y Bonilla Fountain Plaza.
- Improvements to pedestrian infrastructure in several areas of the UPRM Main Campus.
- Sealing the roof of the Main Building on Magueyes Laboratory Island on the Mayagüez Campus.