

**Bonds and Bridges:  
The Relative Importance of Relations with Peers and Faculty for College Student Achievement**

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The process of educational attainment is a complex combination of many factors, including family economic and cultural background, previous achievement, and interactions with opportunity structures in educational environments. Both institutions and families are primary social contexts for the development of youth, and the relative importance of these in educational processes has been a central concern of researchers who seek to account for differential outcomes and inequalities among groups (Dika & Singh, 2001). The framework elaborated in this paper proposes that the primary mechanism for the pursuit of educational goals is the set of social ties that link students to institutional funds of knowledge (Stanton-Salazar, 2001); social capital.

Research on student retention and attainment since the 1970s has emphasized the contributing roles of academic and non-academic factors (Bean, 1980, 1985; Cabrera, Castaneda, Nora, & Hengstler, 1992; Cabrera, Nora, & Castaneda, 1993; Tinto, 1975, 1993). In a study of 20 years of national data, researchers from ACT found that high school GPA and standardized test scores are the academic factors most strongly associated with college retention and GPA (Lotkowski, Robbins, & Noeth, 2004). Socioeconomic status also plays an important role. Self processes including academic self-confidence and achievement motivation influence achievement, while factors such as social support, institutional commitment, and social involvement are positively related to retention.

The literature on college student development over the past 20 years has shown that the best predictor of student learning and development is the time spent engaged in educationally purposeful activities (Astin, 1993; Pascarella & Terenzini, 1991; Pace, 1980), and emphasizes institutional practices to increase student engagement (e.g., Chickering & Gamson, 1987). The *National Survey of Student Engagement* (NSSE) has become a ubiquitous tool for institutions to assess the extent to which students are engaged in positive educational practices and to determine what they gain from those experiences (Kuh, 2001). While the literature has increasingly focused on the importance of student engagement during the college years, few studies have explored the idea of student engagement as the student accessing institutional funds of knowledge necessary for persistence and graduation.

Most scholars agree that social capital can be defined as the resources that accrue to an individual through social networks. Social capital is not only determined by an individual's choices but by the choices, actions, and dynamics in the social network. The purpose of this paper is to examine the role of different types of social capital developed in the college environment - bonding and bridging (Putnam, 2000; Woolcock, 2001) - in predicting achievement. Bonding social capital includes relationships with individuals in similar situations (i.e., peers and classmates), while bridging social capital involves looser relationships (i.e., student-faculty interaction). Putnam (2000) notes that bonding social capital builds solidarity while bridging social capital is better for providing access to external assets and information

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diffusion.

Following other studies of social capital and educational outcomes (Dika & Singh, 2007; Perna & Titus, 2005), this study integrates aspects developed by Coleman (1988), Bourdieu (1986), and Lin (2001a, 2001b) to conceptualize social capital as the academically-focused interactions of students with their peers and with faculty members. Specifically, the study seeks to determine the effects of interaction with peers and faculty members on college achievement over and above the effects of family background and previous achievement. Recently, educational researchers have conducted qualitative and mixed-method studies to understand how students access social capital in institutional settings. Various studies have pointed to the importance of cultural capital as important for persistence and achievement, including the understanding of the typical college student role (Collier & Morgan, 2008), and critical thinking (Tsui, 2003) as cultural capital. Collier and Morgan (2008) present a conceptual model "...distinguishing between learning the college student role and learning course content as two important influences on student performance" (p. 428). The authors suggest that student cultural capital affects understanding of professor's expectations, resulting in performance that is indicative of demonstrated rather than actual capacity. Other studies have examined the role of social capital for ethnic and racial minority students for attainment and persistence. Palmer and Gasman (2008) found that accessibility to mentors and role models was related to academic success for African American men attending a Historically Black University. Horvat (2003) conducted a longitudinal qualitative study with 14 African American women to understand how race and class influence the college choice process and the transition from high school to college. Specifically, Horvat proposes that educational research attempting to understand the influence of race and class in educational opportunity should acknowledge that habitus and capital interact in a field to produce practice. Applied to the study of education, an individual's internalized understanding of how to succeed in education, along with previous experiences and relationships valued by institutional agents in that setting, are the context for action.

Specifically, the study was guided by the following research questions:

1. Are there differences in bonding and bridging social capital based on membership in different student groups: first year, senior, male, female, first generation, continuing generation?
2. What is the relative importance of bonding social capital for college student achievement, taking into account previous achievement factors and student study efforts, and does this differ by student group?
3. What is the relative importance of bridging social capital for college student achievement, taking into account previous achievement factors and student study efforts, and does this differ by student group?

## **Method**

### ***Setting***

The University of Puerto Rico-Mayaguez (UPRM) is the second largest of 11 public institutions in the University of Puerto Rico system, with an enrollment of over 12,000 students. UPRM is a unique institution, in that it is both Hispanic serving (99% Hispanic) and STEM focused. Over 60% of undergraduate students in 2007-08 were enrolled in science and

engineering programs. Female participation in undergraduate STEM programs is above national averages, and women constituted the majority of graduates in seven STEM fields at the 2007 graduation: geology (77%), biology (75%), industrial microbiology (73%), chemical engineering (69%), industrial biotechnology (65%), industrial engineering (66%), and chemistry (54%). According to 2004-05 financial aid data submitted to the Integrated Postsecondary Education Data System (IPEDS), about 71% of students receive financial aid. Based on the annual survey of incoming first year students by the Office of Institutional Research and Planning, about 35% of new students come from families where neither parent has a four year degree.

### **Data Source**

Since 2005, UPRM has been a participating institution in the Building Engagement and Attainment of Minority Students (BEAMS) Project, coordinated by the Institute for Higher Education Policy (IHEP) and funded by the Lumina Foundation. BEAMS institutions use the *National Survey of Student Engagement (NSSE)* as a tool to facilitate data-based decision making about ways to improve student engagement, persistence, and attainment. As part of its involvement in BEAMS, UPRM administered the Spanish version of the NSSE (*Encuesta Nacional de Participación Estudiantil*) in 2005 and 2007.

The sample for this study includes all first year and senior students in the years 2004-05 and 2006-07 during two administrations of the NSSE (N=961). The majority of the participants were females (61%) in their first year of studies (62%), from families where one or both parents have attained a four-year degree (72%) (see Table 1). Background data on high school GPA and standardized test achievement, as well as college GPA, were obtained from the UPRM student information system and matched to the UPRM NSSE database.

### **Instrument**

The 2005 and 2007 Spanish web-based versions of the *National Survey of Student Engagement (NSSE)* (Kuh, 2001) were used for this study. Like its English version, the Spanish NSSE consists of more than 115 items on educational experiences and demographic variables. The current study included items that measure time devoted to study, interaction and relationships with peers, and interaction and relationships with faculty and administration.

The NSSE has certain limitations as a self-report measure (Pascarella, 2001). However, the English version of the instrument has demonstrated adequate reliability and validity (Kuh, 2003), and over 1,200 institutions have administered NSSE since 2000. There is little information available on the reliability and validity of the Spanish version of the NSSE in general, or for the Puerto Rican population specifically, and this is an important area for future research given the number of Puerto Rican institutions participating in the Spanish NSSE (eight between 2003 and 2007).

### **Variables**

The full study model includes twelve (12) independent variables. The five background variables include three standardized achievement/college admission tests (English, Spanish, and mathematics), high school GPA, and maximum parental education level. The variable of study effort (time preparing for classes) is included to account for the time spent on learning as an

important factor in college achievement and attainment. Among the six social capital variables, bonding social capital is composed of six items on interaction with peers (e.g., complete assignments with classmates outside of class), while bridging social capital includes five items on interaction with faculty members (e.g., participate in extracurricular activities with faculty members). Reliability estimates for both scales are acceptable (above  $\alpha=.60$ ). In addition, measures of quality of relationships with students, faculty members, administrators, and advising staff are included as social capital measures (one item each). The independent variable for this study is cumulative GPA at the end of the semester (June) in which the student participated in the NSSE. Table 2 defines the variables in detail, and presents means and standard deviations. Table 3 displays the frequencies for the study hours and quality of relationships variables.

Dichotomous student group variables based on year of study (first year/senior) and sex (male/female) were based on the institution-reported information to NSSE at the time of the survey administration. The dichotomous variable for first generation status (first generation/continuing generation) was created by recoding the variables for mother's and father's highest education level. In this study, first generation student is defined as a student from a family where neither parent/guardian has earned a baccalaureate degree (Choy, 2001). Continuing generation student refers to a student whose parents/guardians earned at least one baccalaureate degree.

### ***Data Analysis***

The main research questions for this study were to determine how bonding and bridging social capital can predict academic performance and how that prediction varies based on student group (first year/senior; men/women; first generation/continuing generation). First, descriptive statistics for all study variables were run, including intercorrelations among the independent variables. A hierarchical multiple linear regression was used to predict academic performance. For each student group, the independent variables were entered in three blocks. The first block contained five background variables including high school GPA, admission test scores (English, Spanish, and math), and maximum parent education level. Study effort was entered in the second block. In the third block, six social capital variables were entered; two bonding social capital variables (frequency of academically focused peer interaction and quality of peer relationships) and four bridging social capital variables (frequency of faculty interaction, quality of relationships with faculty, quality of academic advising, and quality of relationships with administration). Grade point average (GPA) at the end of the semester in which the student completed the NSSE was entered as the dependent variable. All statistical tests were evaluated at the  $\alpha=.05$  level.

### **Results**

The first research question focused on the nature of previous achievement and family background, study effort, and social capital based on group membership. The means and standard deviations for the entire sample are shown in Table 2. Table 4 displays the variable means by group. High school GPA is uniformly high across all groups (3.68 to 3.76), as are math achievement scores (617 to 662), reflecting the STEM focus and selectivity of the institution. While differences between first year and senior students are minimal (except superior achievement in English for first year students), there appear to be some differences between

men and women and between first and continuing generation students. Women tended to have higher high school GPAs, while men performed better on English and math. Continuing generation students appear to perform better than their first generation peers on standardized admission tests, particularly in English. Women indicate they study more than men, and continuing generation students study slightly more than first generation. It is difficult to determine whether these differences are truly significant given the measure of study effort (five-hour ranges of time spend studying).

Seniors report the most frequent interaction with peers on academic work, while first year and first generation students report the least interaction. Quality of relationships with other students is reported as generally friendly and supportive, with seniors, continuing generation students, and women rating quality of relationships more positively. Seniors have the highest frequency of interaction with faculty, albeit barely equivalent to "often" on the scale used for the survey. First year students, men, and first generation students rate the quality of academic advising slightly more positively than their peers, with the least positive rating from seniors. Rating of quality of relationships with faculty members is very similar across groups (not quite 5 on the seven point rating scale), with men indicating the lowest ratings of relationship quality with faculty. The quality of relationships with administrative personnel and offices is similarly rated near the middle of the seven-point scale, however, with first generation students indicating the highest and continuing generation students indicating the lowest ratings. Seniors, women, and continuing generation students had cumulative GPAs of just over 3.0, while the GPAs of the other groups were around 2.8 to 2.9.

Intercorrelations among the study variables were calculated for the entire sample to examine relationships among the variables and detect possible multicollinearity. Of particular interest are the relationships among the social capital variables. The relationship between interaction with faculty and quality of relationships with faculty was moderately positive ( $r=.25$ ) as was the relationship between academically focused peer interaction and quality of relationships with other students. The three relationship quality measures were strongly correlated, particularly quality of relationships with other students and with faculty ( $r=.42$ ) and quality of relationships with faculty and with administrative personnel ( $r=.49$ ). However, it was determined that these correlations were not so strong as to suggest that the items were measuring the same concept.

The correlations of the independent variables with college GPA are positive and significant with a few exceptions (Table 5). High school GPA shows the strongest correlation with college GPA for all groups ( $r=.38$  to  $r=.45$ ). Standardized test scores, study effort, and quality of relationships with faculty members are positively correlated with college GPA for all groups. Parental education was positively correlated with college GPA for all groups except first generation students. For first generation students only, quality of relationships with faculty members was more positively correlated with college GPA than the standardized test scores. Contrary to expectations, quality of academic advising had negligent or slightly negative correlations with college GPA.

The second two research questions focused on the ability of bonding and bridging social capital to predict student achievement. Table 6 displays the explained variance by group for each block of the regression model. As expected, background variables explained a significant amount of variance in college GPA for all groups, with the highest explained variance for seniors

(36%) and the lowest for first generation students (19%). Study effort made a small, but significant contribution for all groups except seniors, explaining about 4% of variance in GPA for first year and first generation students. The social capital variables explain statistically significant additional amount of variance in GPA for all groups, but most strikingly for first generation students (9%) and women (7%).

Table 7 displays the standardized beta coefficients for each of the variables in the final model. Among the background variables, only high school GPA was significant for all groups ( $\beta=.28$  to  $.33$ ), whereas English and math standardized test performance was important for all groups except first generation students. Curiously, Spanish achievement test scores did not contribute significantly to the prediction of GPA. Maximum parent education level had a small, but statistically significant effect for all groups except first generation students. This effect was strongest for seniors and continuing generation students ( $\beta=.11$ ). Study effort had a moderate effect on GPA for four groups – first year, men, women, and continuing generation students.

Among the social capital variables, quality of relationships with faculty members emerged as the most important social capital variable for all groups, particularly for first generation students ( $\beta=.34$ ). Interaction with faculty showed slightly positive effects for men, women, and continuing generation students. Curiously, academically focused peer interaction had a neutral or slightly negative effect for all groups, this being statistically significant only for men and continuing generation students. A similar unexpected effect was observed with quality of academic advising, having a slightly negative effect for women and first generation students. Neither quality of relationships with other students or quality of relationships with administrative personnel and offices showed effects for any of the groups.

## Discussion

These results warrant further discussion in light of the current focus on student engagement and its role in retention and completion. It is important to reiterate that these results are from a single institution, which is unique in the student population it serves, its geographical location, and its cultural context.

The contribution of previous achievement and family background to the prediction of college achievement is concurrent with decades of research on the importance of these factors for college student achievement. The importance of high school GPA as an achievement predictor was seen across all groups, and this finding is consistent with the literature (Lotkowski, Robbins, & Noeth, 2004). For this sample, background variables explained notably less variance for first generation students, similar to findings by other researchers using national data sets (Hahs-Vaughn, 2004). However, the pattern of predictive influence of standardized test performance is not straightforward. Among the standardized tests, English achievement has the strongest effect, whereas Spanish achievement has no significant effect. The result is of interest because UPRM is a bilingual institution, and most students are required to read well in English but complete written and oral assignments in Spanish. Students complete 12 credits in English but only 6 credits in Spanish as part of general education requirements. English achievement acts somewhat as a proxy for social class, given that many private K-12 schools on the island emphasize English instruction. The large difference in English achievement scores between first and continuing generation students supports this explanation.

Study effort was expected to significantly predict student achievement based on theories elaborated by Astin (1993) and others highlighting the importance of time spent on learning to retention and completion. Study effort predicted only 1-4% additional variance beyond background variables in the second regression model, but had a significant positive effect for first year, men, women, and continuing generation students in the final model. Surprisingly, study effort made a slightly negative but not statistically significant contribution to predicting GPA for seniors in the final model. The reasons for this are not clear, although perhaps study hours in the final year are less important than those in earlier years when students are adjusting to the new and often more rigorous expectations of study time at the college level (see Collier & Morgan, 2008). Even more surprising perhaps is that study time did not have a significant effect in the prediction of achievement for first generation students. This type of behavior may be representative of acculturation to the academic environment and the expectations of the dominant (middle to upper middle) class, thus, resulting in higher achievement.

The emergence of student-faculty interaction as the key social capital factor in predicting college GPA supports previous studies using national data on students of color and Latinos (Anaya & Cole, 2001; Kuh & Hu, 2001). The finding that quality of relationships with faculty rather than quantity of interaction with faculty is a stronger predictor of GPA for all student groups also supports previous findings across racial/ethnic groups (Lundberg & Schreiner, 2004) as well as for men and women (Sax, Bryant, & Harper, 2005). The negative coefficients for bonding social capital, quality of academic advising, and quality of relationships with administrative personnel and offices are difficult to explain. Except for academic advising, these variables have positive correlations with college GPA and the relationship quality variables are also positively and significantly correlated. The collinearity statistics for the final model for each group do not suggest multicollinearity; all variance inflation factor (VIF) values are in the range of 1.0 to 2.0. The data and the results must be examined more carefully to determine possible causes for the reversal of influence for the two relationship quality variables. In the case of quality of academic advising, the possible reasons for this result are not clear. It is possible that the variable is measuring frequency of contact with academic advisors rather than quality; that students spending more time with academic advisors are those with greater difficulties in class.

### **Conclusions and Future Directions**

This study provides evidence that student-faculty interaction is an important element in predicting student achievement, independent of class rank, gender, or first generation status for college students in Puerto Rico. Of particular importance is the finding that the quality of student-faculty interaction is as important as high school GPA for first generation students. Interestingly, bonding social capital does not significantly predict academic achievement. However, this type of social capital may predict other forms of engagement and non-cognitive outcomes.

The limitations of this study detract somewhat from its generalizability. The study includes a self-selected sample from a single institution in Puerto Rico. The negative effects of certain variables for certain student groups are unexplained and must be further investigated, including academic advising and academic interaction with peers. The model not inclusive of all variables that may predict student achievement, and other dependent variables are not

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considered as outcomes (retention, graduation, learning gains).

Continued work on this study should incorporate analysis of the individual interaction variables, rather than scales, to determine which types of interaction are more effective in predicting achievement and other outcomes (e.g., discussions outside of class, discussing career plans). The model should also be tested with other dependent variables available in institutional records and in the NSSE.

**Table 1. Demographic characteristics of the sample (N=961)**

<i>Student Characteristics</i>	<i>n</i>	<i>%</i>
First year	595	61.91%
Senior	366	38.09%
Men	373	38.81%
Women	588	61.19%
First generation	266	27.68%
Continuing generation	695	72.32%

**Table 2. Description of variables (N=961)**

<i>Variable</i>	<i>Definition</i>	<i>Mean</i>	<i>SD</i>
<i>Background</i>			
High school GPA	Grade point average for high school, four-point scale	3.73	0.30
English achievement	Student score on College Board Admission Test for Puerto Rico (PEAU), range 200-800 (SD=110)	579.22	112.68
Math achievement	Student score on College Board Admission Test for Puerto Rico (PEAU), range 200-800 (SD=110)	640.81	88.42
Spanish achievement	Student score on College Board Admission Test for Puerto Rico (PEAU), range 200-800 (SD=110)	560.29	69.23
Maximum level – parental education	Maximum educational level attained among both parents assessed on a seven-point scale, 1=did not finish high school, 2=graduated from high school, 3=attended college, did not complete degree, 4=completed associate’s degree, 5=completed bachelor’s degree, 6=completed a master’s degree, 7=completed a doctoral degree	4.41	1.53
<i>Study effort</i>			
Hours per week preparing for class	Single item assessing how many hours in a typical 7-day week the student prepares for class, coded 1=0 hours, 2=1-5 hours, 3=6-10 hours, 4=11-15 hours, 5=16-20 hours, 6=21-25 hours, 7=26-30 hours, 8=more than 30 hours	3.92	1.90
<i>Bonding social capital</i>			
Academically focused peer interaction	Six items using a four-point scale to assess the extent to which the student interacts with other students (1=never, 2=sometimes, 3=often, 4=very often):	2.80	0.59
$\alpha=.64$	<ul style="list-style-type: none"> <li>• Worked with other students on projects during class</li> <li>• Worked with other students on assignments outside of class</li> <li>• Used an electronic medium (listserv, chat group, Internet instant messaging, etc) to discuss or complete an assignment</li> <li>• Discussed ideas from your readings or classes with others outside of class (students, family members, co-workers, etc)</li> <li>• Had serious conversations with students of a different race or ethnicity than your own</li> <li>• Had serious conversations with students who are very different from you in terms of religious beliefs, political opinions, or personal values</li> </ul>		
Quality of relationships with other students	Seven-point scale, with 1=unfriendly, unsupportive, sense of alienation to 7=friendly, supportive, sense of belonging	5.71	1.37
<i>Bridging social capital</i>			
Interaction with faculty	Five items, coded on a four-point scale, to assess the extent to which students interact with faculty members outside of class (1=never, 2=sometimes, 3=often, 4=very often):	2.20	0.68
$\alpha=.77$	<ul style="list-style-type: none"> <li>• Used email to communicate with an instructor</li> <li>• Discussed grades or assignments with instructor</li> <li>• Talked about career plans with a faculty member or advisor</li> <li>• Discussed ideas from your readings or classes with faculty members outside of class</li> <li>• Worked with faculty members on activities other than coursework (committees, orientation, student life activities, etc)</li> </ul>		
Quality of academic advising	Four-point scale, 1=poor, 2=fair, 3=good, 4=excellent	2.86	0.90
Quality of relationships with faculty members	Seven-point scale, with 1=unavailable, unhelpful, unsympathetic to 7=available, helpful, sympathetic	4.93	1.46
Quality of relationships admin personnel/offices	Seven-point scale, with 1=unhelpful, inconsiderate, rigid to 7=helpful, considerate, flexible	4.55	1.59
<i>Dependent variable</i>			
Cumulative college GPA	Cumulative GPA calculated in June of the year the student participated in the NSSE	2.97	0.66

**Table 3. Frequencies for hours of study and quality of relationships variables**

<i>Variables</i>	<b>1</b>	<b>2</b>	<b>3</b>	<b>4</b>	<b>5</b>	<b>6</b>	<b>7</b>	<b>8</b>
	0 hours	1-5 hours	6-10 hours	11-15 hours	16-20 hours	21-25 hours	26-30 hours	> 30 hours
Hours per week preparing for class (n=1,073)	1.3%	28.9%	20.4%	15.8%	11.1%	10.1%	4.9%	7.5%
	Unfriendly/unhelpful/unavailable	2	3	4	5	6	Friendly/helpful/available	
Quality of relationships with other students (n=1,095)	.8%	2.9%	3.3%	10.1%	19.1%	26.8%	36.9%	
Quality of relationships with faculty members (n=1,095)	1.9%	4.7%	8.8%	20.0%	27.5%	21.2%	15.9%	
Quality of relationships with admin personnel/offices (n=1,095)	4.7%	6.4%	12.1%	23.4%	22.7%	18.1%	12.6%	
	Poor	Fair	Good	Excellent				
Quality of academic advising (n=1,028)	9.0%	22.2%	43.4%	25.4%				

**Table 4. Variable means by student group**

<i>Variables</i>	<b>First year n=595</b>	<b>Senior n=366</b>	<b>Men n=373</b>	<b>Women n=588</b>	<b>First generation n=266</b>	<b>Continuing generation n=695</b>
High school GPA	3.72	3.75	3.68	3.76	3.72	3.74
English achievement	584.45	570.73	591.98	571.13	537.86	595.05
Math achievement	640.80	640.83	662.00	627.37	617.15	649.87
Spanish achievement	558.31	563.51	551.98	565.56	541.88	567.33
Maximum level – parental education	4.45	4.34	4.54	4.32	2.30	5.21
Hours per week preparing for class	3.87	4.01	3.64	4.11	3.79	3.98
Academically focused peer interaction	2.72	2.92	2.78	2.81	2.75	2.82
Quality of relationships with other students	5.65	5.80	5.66	5.73	5.62	5.74
Interaction with faculty	2.02	2.49	2.20	2.20	2.15	2.22
Quality of academic advising	3.06	2.53	2.97	2.79	2.94	2.83
Quality of relationships with faculty members	4.94	4.92	4.85	4.98	4.92	4.93
Quality of relationships with admin personnel/offices	4.52	4.60	4.60	4.52	4.75	4.47
Cumulative college GPA	2.86	3.14	2.88	3.02	2.84	3.02

**Table 5. Zero-order correlations between independent variables and college GPA, by student group**

<i>Variables</i>	<i>Student Groups</i>					
	<i>First year</i> <i>R<sup>2</sup>=.36</i>	<i>Senior</i> <i>R<sup>2</sup>=.41</i>	<i>Men</i> <i>R<sup>2</sup>=.37</i>	<i>Women</i> <i>R<sup>2</sup>=.34</i>	<i>First generation</i> <i>R<sup>2</sup>=.31</i>	<i>Continuing generation</i> <i>R<sup>2</sup>=.38</i>
<i>Background</i>						
High school GPA	.42**	.45**	.45**	.38**	.39**	.44**
English achievement	.32**	.41**	.33**	.33**	.21**	.34**
Math achievement	.34**	.38**	.39**	.34**	.24**	.35**
Spanish achievement	.34**	.39**	.37**	.32**	.28**	.35**
Maximum level – parental education	.19**	.24**	.20**	.19**	.01	.20**
<i>Study effort</i>						
Hours per week preparing for class	.30**	.16**	.21**	.27**	.23**	.26**
<i>Bonding social capital</i>						
Academically focused peer interaction	.03	.15**	.09	.16**	.14*	.12**
Quality of relationships with other students	.09*	.06	.09	.09*	.10	.08*
<i>Bridging social capital</i>						
Interaction with faculty	.03	.15**	.09	.16**	.14*	.12**
Quality of academic advising	-.01	.03	-.02	-.07	-.00	-.07
Quality of relationships with faculty members	.29**	.22**	.24**	.26**	.36**	.22**
Quality of relationships with administrative personnel/offices	.10*	.04	.08	.09*	.15*	.08*

**Table 6. Explained variance in GPA by student group (R<sup>2</sup>), all models (N=961)**

<i>Model</i>	<i>First year</i>	<i>Senior</i>	<i>Men</i>	<i>Women</i>	<i>First generation</i>	<i>Continuing generation</i>
Model 1	.27***	.36***	.32***	.25***	.19***	.30***
Model 2	.31***	.36***	.33***	.27***	.22***	.33***
Model 3	.36***	.41***	.37***	.34***	.31***	.38***

**Table 7. Predictors of GPA by student group (standardized betas), final model (N=961)**

<i>Variables</i>	<i>First year</i>	<i>Senior</i>	<i>Men</i>	<i>Women</i>	<i>First generation</i>	<i>Continuing generation</i>
<i>Model 1: Background</i>						
High school GPA	.31***	.34***	.34***	.28***	.29***	.33***
English achievement	.14**	.21***	.15**	.14***	.04	.17***
Math achievement	.10*	.14**	.13*	.13**	.08	.12***
Spanish achievement	.06	.07	.07	.02	.10	.03
Maximum level – parental education	.08*	.11**	.09*	.08*	-.01	.11***
<i>Model 2: Study effort</i>						
Hours per week preparing for class	.18***	-.08	.13**	.15***	.09	.16**
<i>Model 3: Social capital</i>						
Academically focused peer interaction	-.06	-.09	-.10*	-.05	.00	-.09**
Quality of relationships with other students	-.03	-.01	-.01	-.03	-.06	.00
Interaction with faculty	.03	.07	.11*	.09*	.02	.12**
Quality of academic advising	-.04	.01	-.06	-.10**	-.11*	-.09
Quality of relationships with faculty members	.25***	.22***	.17***	.26***	.34***	.19***
Quality of relationships with administrative personnel/offices	-.06	-.06	-.02	-.04	-.01	-.05
<i>R</i> <sup>2</sup>	.36***	.41***	.37***	.34***	.31***	.38***

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