SOCIAL CAPITAL, ACADEMIC ACHIEVEMENT, AND POSTGRADUATION PLANS AT AN ELITE, PRIVATE UNIVERSITY

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ABSTRACT: *Many studies have explored how social capital influences the academic experiences of secondary school students. A distinct literature has demonstrated the beneficial effects of social contacts on occupational attainment and the job search process. However, few studies have explored the effects of social capital at the postsecondary level. This study bridges this gap in the literature by examining the effects of campus social networks on college academic achievement and postgraduation education and occupation plans, using detailed panel data from an elite, private university. Results indicate that campus social networks have little effect on early college outcomes, although students with extensive networks are more likely to graduate with honors and continue on to graduate school. Students with extensive campus networks and extracurricular memberships are more likely to aspire to high-status professional occupations, especially as medical doctors, while family or personal networks are more important for aspiring lawyers.*
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Social capital has become one of sociology's most popular ideas, but conceptual ambiguity has hampered recent developments (Portes 2000). Some scholars emphasize social capital as the community norms and expectations that arise from close networks of personal ties (e.g., Coleman 1988; Putnam 2000). Others define social capital more precisely as the various resources embedded in networks that can be accessed by social actors (e.g., Bourdieu [1983] 1986; Lin 2001). Within sociology, the current literature not only diverges at the conceptual level, but empirical studies have focused on different substantive areas as well. Studies of educational outcomes have primarily used or responded to Coleman's definition (Dika and Singh 2002), and a resources-in-networks perspective has focused on occupational attainment and the job search process (Lin 1999). This study bridges this gap in the literature by exploring the effects of various social networks at an important linkage between educational institutions and labor markets: elite colleges and universities.

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As one of the first to introduce the concept to American sociology, Coleman (1988, 1990) was particularly concerned with how social capital in the family and the community influences the educational attainment of adolescents. Coleman (1988:S98) considers social capital as the various family and community structures that encourage educational attainment:

> Social capital is defined by its function. It is not a single entity, but a variety of different entities, with two elements in common: they all consist of some aspect of social structure, and they facilitate certain actions of actors within the structure.

In particular, Coleman emphasizes quality interactions among parents and their children and intergenerational closure—when parents maintain close contacts with the parents of their children's friends and classmates—as forms of social capital that provide information channels, norms, trust, and effective sanctioning.

Over recent decades, Coleman's insights have motivated an impressive body of research and have received a measure of support. However, others have articulated weaknesses with Coleman's understanding of social capital (Dika and Singh 2002; Perna and Titus 2005; Portes 2000). For example, a view that equates social capital with beneficial community norms is tautological (Woolcock 1998) and has difficulty addressing the structural constraints that can limit access to social resources or stifle individual freedoms (Morrow 1999; Portes 1998). Pertinent to this study, it is unclear if social capital acquired during adolescence would be important for students' college experiences and achievement.

Another key figure to the sociology of education provides a view of social capital that can address some of the criticisms to Coleman's definition. Bourdieu ([1983] 1986:190) describes how networks influence the quantity of—and access to—social capital:

> The volume of the social capital possessed by a given agent thus depends on the size of the network of connections he can effectively mobilize and on the volume of the capital (economic, cultural, or symbolic) possessed in his own right by each of those to whom he is connected.

Bourdieu's perspective can consider how parent-school and parent-child relationships affect schooling, while also providing a framework to understand how dimensions of class and race/ethnicity structure access and use of these resources (Lareau 2003; Lareau and Weininger 2003). This resources-in-networks definition of social capital is very similar to that used in studies of labor market outcomes (Lin 1999, 2001).[1] As an improvement to Coleman's definition, this perspective has the advantage of considering the effects—both positive and negative—of different network structures (Portes 2000), including the role of weak ties (Granovetter 1973). Close or bonding ties can be important in some contexts, while weak and bridging ties can provide access to resources that are unavailable in personal networks (Burt 1992; Morgan and Sørensen 1999).

The college years represent an important stage for not only academic and personal development but also the accumulation of social resources. This study shows the usefulness of a resources-in-networks understanding of social capital and the

related position-generator methodology. Using panel data of students attending an elite, private university and a range of measures taken across the college years, this study gives particular attention to how extensive networks and bridging ties provide students with social capital. With such a select group of students, this study cannot test Coleman's insights directly and instead explores social capital accumulation along often high-status career pathways. This study investigates how social capital embedded in campus networks affects academic achievement and postgraduation education and occupation plans. More specifically, I examine the effects of extensive network ties to university positions such as administrators, faculty and other staff, peer networks in residential halls and extracurricular clubs, and the use of family and personal contacts.

Social Capital, Education, and Jobs

Little research has examined social capital at the postsecondary level. Lee and Brinton (1996) show that elite universities in South Korea provide graduates with advantages in the labor market by supplying access to social capital in the form of ties between prospective employers and professors, administrators, staff, and alumni. Grayson (2004), in an analysis of recent graduates of a Canadian university, finds little effect of the use of contacts on job outcomes.

Studies at the secondary school level find that social capital is positively associated with educational achievement and attainment, but support is moderate (see Dika and Singh [2002] for review). Studies that emphasize close ties among parents and intergenerational closure as forms of social capital find an association with lower dropout rates (Carbonaro 1998; Teachman, Paasch, and Carver 1997), fewer maladaptive behaviors (Hoffman and Dufur 2008; Wright and Fitzpatrick 2006), greater college attendance (Hofferth, Boisjoly, and Duncan 1998; Kim and Schneider 2005; Perna and Titus 2005; Sandefur, Meier, and Campbell 2006), and higher grades and test scores (Kao and Rutherford 2007). Other studies find the effects of social closure to be small (Carbonaro 1998; Portes 2000) if not spurious (Carbonaro 1999:685) and potentially negative in some contexts (McNeal 1999; Morgan and Sørensen 1999).

Fewer studies at the secondary level have examined how students' broader social networks affect academic outcomes. Stanton-Salazar and Dornbusch (1995) find that more expansive information networks—with connections to teachers, counselors, coaches, and other school personnel—are positively associated with grades, occupational expectations, and college plans. Broh (2002) finds that some extracurricular activities have a positive impact on high school grades, and this is largely attributable to the social capital accessed through participation. The resources available in students' peer networks (Ream 2005) and parents' social networks (Kim and Schneider 2005) also positively affect academic outcomes for secondary students.

While not directly examining the effects of social capital, studies of postsecondary students suggest the beneficial resources accessed through various social networks (see Pascarella and Terenzini [2005] for review). Frequent interactions with peers provide opportunities to reinforce commitment to the academic program

and are associated with gains in knowledge and skill acquisition (Astin 1993). Participation in extracurricular activities, including service groups, fraternities/sororities, and athletic teams, is associated with development of career-relevant skills, but evidence is mixed regarding the effects on skill acquisition and achievement (Pascarella and Terenzini 2005:514–22). Participation in fraternities and sororities may contribute to the choice of pursuing a business or law career (Astin 1993). Out-of-class interaction with faculty is associated with gains in students' educational effort, vocational preparation, and intellectual development (Kuh and Hu 2001). Additionally, greater student-faculty contact has a positive influence on students' plans to become college teachers (Cole and Barber 2003), research scientists, and physicians (Astin 1993). Expansive campus social networks can provide students with access to a variety of resources that facilitate academic achievement and pathways to successful careers. Peer and faculty networks include resources, such as guidance, support, information and encouragement with coursework, and information and contacts for postgraduation endeavors.

Studies of occupational attainment have explored the benefits of social capital and the use of personal contacts during formal (Granovetter 1973) and informal (McDonald and Elder 2006) job searches. Research in this tradition has described how social capital mediates the status-attainment process by drawing attention to the instrumental use of resources that exist in social networks (Lin 2001). Social capital facilitates occupational attainment not only when mobilized during the job search process but also when accessed within an individual's general social networks (see Lin [1999] for review).

A principal methodology used to examine social capital accessible in an individual's networks is the position-generator. Typically, the position-generator provides a sample of ordered positions that are salient in the occupational structure and asks respondents if they know or associate with someone in each position (Lin, Fu, and Hsung 2001). This methodology is well suited to capture an individual's access to social resources through weak network ties (Li, Savage, and Warde 2008; Van der Gaag, Snijders, and Flap 2008). With the position-generator, social capital can be operationalized as the level of status or prestige available in an individual's social networks and network size or extensity (Lin et al. 2001). The results presented below include network extensity measures adapted from a position-generator for an elite university campus.

Social Capital at Selective Colleges and Universities

Colleges and universities provide a good opportunity to use a resources-in-networks approach to social capital. While social capital has received considerable attention in regards to secondary student outcomes, few studies have explored social capital at the postsecondary level (e.g., Grayson 2004; Lee and Brinton 1996). The students in this study make significant investments in social capital across the college years. Academic time use for students at U.S. colleges and universities has declined steadily over the past half century, and today's students spend more time in leisure and social activities than in prior decades (Babcock and Marks 2009).[2] Even as university students spend less of their time in the classroom, library, or

lecture hall, there has been little attention to how campus social networks influence academic achievement and occupational attainment.

Family resources, as emphasized by Coleman and the literature on secondary students, are important in the transition into postsecondary education (Kim and Schneider 2005; Perna and Titus 2005; Sandefur et al. 2006). In applying to colleges and universities, students draw on the support, advice, and recommendations of family members, friends, teachers, and guidance counselors. Accordingly, socioeconomic and racial/ethnic background is associated with access to qualitatively and quantitatively different resources and information about postsecondary education (Cookson and Persell 1985; Devine 2004; Karen 1991; McDonough 1997; Reay, David, and Bell 2005). However, it is unlikely that these resources will have a significant impact in the college years. Few students with absolute deficits of economic, social, or symbolic resources continue their education into the postsecondary level and into elite universities in particular (Bourdieu [1989] 1996). Most students in this study come from households with an abundance of financial, social, and educational resources. Once arriving on campus, students may need to rebuild, redirect, or refine their social capital in order for it to exert effects on achievement or other college-level outcomes.

Selective colleges and universities serve as important links between the educational system and elite occupations (Katchadourian and Boli 1994; Useem and Karabel 1990). Net of individual student characteristics and other institutional factors, attending a selective college or university has a positive impact on future earnings (Bowen and Bok 1998; Kingston and Smart 1990), as well as modest positive effects on occupational status (Pascarella and Terenzini 2005:467–76). With a range of measures—including precollege family resources highlighted by Coleman, family and personal contacts, and various campus networks across the college years—this study provides an opportunity to conduct a detailed examination of social capital accumulation and conversion along a high-status track.

Building on the existing literature on social capital at the secondary level and studies of postsecondary student networks, the primary research questions of this study are:

1. What are the effects of peer, campus, and family networks on college academic achievement?

Having extensive ties to peer networks could provide information that facilitates academic success, such as advice about which classes to take, course material and grading, and alerts to campus programs. At selective institutions, however, the effects of peer networks are likely small, as most students are rather academically motivated and aspire to high-status positions in later adulthood (e.g., Bowen and Bok 1998:91–154). Peer networks can be expected to have their largest effects early in college, as students become acclimated to a new climate, while extensive campus ties should have an increasing effect over the college career. Early in college, broad campus networks could provide students with information about academic requirements and policies, as well as support services available on campus. Throughout the college years, campus networks could provide students with opportunities for professional mentors, which can foster

intellectual development and a more rigorous synthesis of course material, leading to higher achievement.

2. What are the effects of social networks on postgraduation education and occupation plans?

Campus networks could support students to enter pathways to professional careers, especially those represented on the university campus: administrators, doctors, professors, and research scientists (Astin 1993; Cole and Barber 2003). Extensive campus ties could provide information about graduate school programs, as well as assistance with the application process and letters of recommendation. In contrast to these within-college networks, family and personal contacts are likely more important at the transitions into and away from campus (Martin and Spenner 2009). Much of the benefit of precollege ties likely is expended in the admissions process; if these ties are maintained, they could have similar effects as campus networks during the college years. The use of family and personal contacts for postgraduation plans could be particularly beneficial for students who enter the workforce directly after graduation and for students pursuing careers with less connection to postsecondary institutions.

DATA AND METHODS

Data for this study come from Campus Life and Learning (CLL), a multiyear prospective panel study of two consecutive cohorts of students who accepted admission to Duke University (incoming classes of 2001 and 2002). Duke is a private research university located in Durham, North Carolina, with a total undergraduate enrollment of about 6,000 students. The design randomly selected about one-third of white students, about two-thirds of Asian students, all black and Latino students, and about one-third of bi- and multiracial students, based on student responses on the admission application form. CLL captures the rich details of students' experiences at a single institution, with multiple data points and merges of institutional data usually unavailable in studies of multiple institutions.

Respondents were first surveyed in the summer preceding college matriculation and again during the spring semesters of their first, second, and fourth years. The precollege survey collects information regarding students' background characteristics and junior high and high school experiences. College year surveys focus on campus experiences, including residential life, extracurricular activities, and academic development. The fourth-year survey also includes questions reflecting on the college experience and students' postgraduation plans (for a more detailed description of CLL, see Spenner, Buchmann, and Landerman [2005]).

It is important to note that CLL was not designed to be representative of all postsecondary students, but Duke is comparable to other selective colleges and universities. Duke was included as one of the most selective institutions in the College and Beyond 1989 entering cohort (Bowen and Bok 1998).[3] The racial/ethnic composition of the Duke student body is similar to other four-year public and private colleges and universities, although Duke—like other elite universities—has a higher percentage of Asian students.[4] Comparisons with the national Cooperative

Institutional Research Program data suggest that CLL is similar to other private, selective universities on a range of student characteristics, including citizenship, parents' education and occupation, household income, financial aid, SAT scores, college achievement, and immediate postgraduation plans (Martin 2009).

The final sample for both cohorts included 1,536 members. About 77 percent of sample members (n = 1181) completed the precollege survey and nearly all of these respondents provided signed releases to their institutional records. Refusals were low at 1.8 percent of sample members. Response rates to in-college waves were 71 percent for the first year, 65 percent for the second year, and 59 percent for the fourth year. This study includes students who responded to the precollege survey and also responded to the first- or fourth-year survey (n = 912 for first-year outcomes; n = 795 for final college outcomes). Detailed comparisons of possible nonresponse and dropout bias suggest that the effects are quite small (see Appendix A).

Appendix B provides descriptive statistics and measurement notes for variables used in this study, by racial/ethnic group.[5] All analysis was conducted with *Stata/SE 10.0* (StataCorp 2008), using probability weights to reflect the oversampling of racial/ethnic minority students. Included as control variables with racial/ethnic group and sex are measures for socioeconomic and high school background. "Parent's education" describes the level of attainment of the student's more highly educated parent (for both parents, if available) in four categories ranging from high school diploma or less to a professional degree. The average level of parent's educational attainment is at least a college degree for all racial/ethnic groups. In each survey wave, students ranked the importance of a good student identity to their overall identity. SAT scores were collected from institutional records and combine mathematics and verbal test scores. Student's major field groups expected and declared majors in three categories: natural sciences/engineering, social sciences, and humanities.

The precollege survey collects information on family resources that are consistent with Coleman's (1988) conceptualization of social capital. During the high school years, resources that can be expected to facilitate educational attainment include having an intact family and attending a religious high school (versus public or private high school). Also, parent-school interaction is a scale combining five measures describing the frequency of certain activities. These items include participating in parent-school organizations, participating in other school-related activities, spending time talking with student's friends, checking if student completed homework, and helping student with homework. Other aspects of family structure may disrupt social relationships, including having a mother who works full-time, number of siblings, and the number of family moves during adolescence.

CLL provides measures of several types of social networks across the college years, including questions about friends, extracurricular memberships, and other campus ties. The position-generators included in the first- and fourth-year surveys allow for the construction of measures that are similar to extensity scores used in studies of social capital and occupational attainment (Lin et al. 2001; Van der Gaag et al. 2008). "Campus ties" is the number of positions to which the student reports access by knowing at least one person. Campus positions include the

president/provost/dean; assistant dean/program director/department chair; student support professional; other professional staff; faculty members (other than course instructors) in humanities, social sciences, natural sciences, and engineering; coach/athletics official; medical center faculty/staff; other staff members; and graduate students. From the first to the fourth year, students gain about two additional ties to campus positions, and black and bi-/multiracial students have the most extensive networks in each college year.

"Dorm ties" is the number of campus dorms/residence quads in which the student knows at least one other student.[6] In the first year, students across all racial/ethnic groups have ties to most dorms, and nearly 60 percent of students report connections to all residence halls. By the fourth year, when more students have begun to live off-campus, about 43 percent report ties to all campus residences. Another aspect of peer networks, "club ties" is a count of extracurricular clubs to which the student reports membership (fraternity/sorority, religious club, cultural or ethnic club, community service club, student government, school publication, intramural club, and intercollegiate athletic team).[7]

Finally, the precollege and fourth-year surveys each provide information about family or personal networks that could influence postsecondary outcomes. "Duke ties" is a count of precollege ties that the student reports using in preparing for college (having a family member who graduated from Duke, other family ties to the university, and speaking with an Admissions Office representative, another university official, or faculty member). The fourth-year survey asks students if they used personal or family contacts in preparing for their postgraduation plans. White students have the most precollege ties to the university and are more likely than black or Asian students to report using family or personal connections.

This study considers how various campus social networks affect university academic achievement and postgraduation plans. Dependent variables for academic achievement include first-year (spring semester) grades and graduation with honors, each taken from institutional records. Honors (summa, magna, or cum laude) is determined as the top quartile threshold in final GPA of the previous year's graduating class, calculated separately for students in the schools of engineering and arts and sciences. Graduating with honors represents a valued and sociologically meaningful academic credential and is not as susceptible to grade inflation and the skewed GPA distribution. Items from the fourth-year survey describe postgraduation plans, including plans to attend graduate school in the fall following graduation (versus work, military, or other plans) and expectations for obtaining (or being in the process of obtaining) a high-grade professional occupation, as defined by Class I of the Erikson-Goldthorpe-Portocarero (EGP) schema (Erikson and Goldthorpe 1992).[8] The three most popular occupational categories within Class I are medical doctors (including other medical diagnosing occupations; 19.5 percent of students), lawyers (17.3 percent), and executives (including administrators and managers; 15.6 percent). Nearly two-thirds of students report high-grade professional aspirations after leaving Duke, and about 38 percent plan to attend graduate or professional school full-time in the fall immediately following graduation. Black and Asian students are more likely than white or Latino students to

plan on working as a doctor, and black students are least likely of any racial/ethnic group to aspire to an executive occupation.

First, to examine early college academic achievement, I use ordinary least squares (OLS) regression to predict first-year GPA with variables for first-year social networks and controls for student-ascribed characteristics, precollege achievement, good student identity, and major field area. Second, I use logistic regression to predict the likelihood of graduating with honors using variables for fourth-year social networks and the same controls as above. Next, to explore how campus social networks are associated with postgraduation outcomes, I use logistic regression to predict the likelihood of attending graduate school and attaining professional occupations five years after graduation. Models for postgraduation plans all control for socioeconomic background, major field area, and college achievement, and models for occupation plans also control for precollege professional job aspirations.

RESULTS

Academic Achievement

Table 1 presents results for models predicting first-year, spring semester GPA. Net of other controls, black students have GPAs nearly three-tenths of a letter grade lower than white students (Model 1). Latino students score about .14 of a letter grade lower than white students. This achievement gap is consistent with other studies of selective colleges and universities (Bowen and Bok 1998; Massey et al. 2003). Relative to students majoring in engineering and the natural sciences, students in the social sciences score about .18 of a letter grade higher and students in the humanities score about .16 of a letter grade higher. Both SAT scores and the importance of a good student identity have strong, positive effects on grades. An increase in SAT scores of 120 points—roughly the difference between the white and black student averages—translates into one-sixth of a letter grade increase. A one standard deviation increase in the importance of a good student identity is associated with an increase of over one-tenth of a letter grade. For this sample of elite university students, most family resource variables have insignificant effects on early college achievement. Having a mother who worked full-time during high school is significantly associated with first-year grades, but the effect is not in the expected direction and not robust across model specifications.

Model 2 adds measures of campus social networks. The effects of campus networks, precollege ties to Duke, and extracurricular memberships are each insignificant. Ties to first-year residence halls have a significant, negative effect on grades at the end of the first college year. Relative to SAT scores, good student identity, racial/ethnic group, and major area, the effect of dorm ties is rather small. Additionally, most students have extensive dorm ties: Almost two-thirds of students report ties to at least ten residence halls. In an analysis not shown, I examined other possible explanations for this negative effect of dorm ties. Students with ties to fewer than half of dorms (18.2 percent of students) are less likely to be black and more likely to be male, although there are no significant differences with major field and other student background variables.[9] The correct interpretation is that

TABLE 1

OLS Regression of First-Year Grade Point Average on Social Capital

	Model 1 *Coefficient (*SE*)*	*Model 2* *Coefficient (*SE*)*
Race/ethnicity		
Black	–.290 (.061)***	–.260 (.061)***
Latino	–.135 (.054)*	–.119 (.054)*
Asian	–.055 (.052)	–.060 (.052)
Other	–.126 (.080)	–.118 (.073)
Female	.046 (.038)	.049 (.038)
Parent education	.005 (.024)	.011 (.024)
SAT (total)	.001 (.000)***	.001 (.000)***
Major field area		
Social sciences	.177 (.044)***	.174 (.044)***
Humanities	.160 (.079)*	.129 (.078)
Other/undecided	.114 (.045)*	.108 (.045)*
Good student identity	.116 (.021)***	.121 (.021)***
Family resources		
Intact family	.027 (.051)	.032 (.050)
Siblings	–.016 (.015)	–.015 (.016)
Mother works full-time	.088 (.035)*	.087 (.035)*
Religious high school	.026 (.048)	.022 (.046)
Family moves	–.004 (.011)	–.004 (.011)
Parent-school interaction	.001 (.005)	.003 (.005)
Campus networks		
Campus ties		–.001 (.007)
Dorm ties		–.024 (.006)***
Club ties		.020 (.015)
Personal networks		
Duke ties		–.005 (.014)
Constant	.649 (.283)*	.802 (.279)**
R^2	.180	.196

Source: Campus Life and Learning (n = 912).
Reference categories: white, male, natural science major.
Note: OLS = Ordinary Least Squares. Weighted estimates; student background, major area, family resources, and Duke ties are taken from the precollege survey; GPA and SAT scores are from institutional records; other campus networks and good student identity are from the first-year survey.
*p < .05; **p < .01; ***p < .001 (two-tailed tests).

broad campus social network ties are not appreciably associated with early college achievement, although students who associate with students in few residence halls do have somewhat higher grades.[10]

While campus networks do not predict early college academic achievement, extensive network ties are positively associated with final college achievement. Table 2 presents results for graduation with honors, displaying odds ratios. As with first-year achievement, black and Latino students are less likely to graduate with honors. Net of other controls, the odds of a black student graduating with

TABLE 2
Logistic Regression of Graduating with Honors on Social Capital

	Model 1 Odds Ratio (t Score)	*Model 2 Odds Ratio (t Score)*
Race/ethnicity		
Black	0.127 (–4.18)***	0.097 (–4.53)***
Latino	0.559 (–1.79)	0.540 (–1.81)
Asian	0.734 (–1.14)	0.697 (–1.28)
Other	0.257 (–2.71)**	0.227 (–2.76)**
Female	1.258 (1.07)	1.204 (0.85)
Parent education	0.973 (–0.22)	0.928 (–0.59)
SAT (total)	1.007 (6.45)***	1.008 (6.92)***
Major field area		
Social sciences	1.540 (1.86)	1.809 (2.50)*
Humanities	0.956 (–0.14)	1.076 (0.21)
Good student identity	2.336 (5.44)***	2.411 (5.63)***
Family resources		
Intact family	0.705 (–1.16)	0.677 (–1.28)
Siblings	0.953 (–0.47)	0.990 (–0.09)
Mother works full-time	1.000 (–0.00)	1.068 (0.31)
Religious high school	0.825 (–0.61)	0.821 (–0.59)
Family moves	0.946 (–0.78)	0.925 (–0.99)
Parent-school interaction	1.015 (0.57)	1.022 (0.78)
Campus networks		
Campus ties		1.108 (2.34)*
Dorm ties		0.972 (–0.70)
Club ties		0.987 (–0.12)
Personal networks		
Duke ties		1.110 (1.15)
Family networks		0.460 (–3.61)***

Source: Campus Life and Learning ($n = 795$)
Reference categories: white, male, natural science major.
Note: Weighted estimates; student background, family resources, and Duke ties are taken from the precollege survey; honors, SAT scores, and major area are from institutional records; other campus networks and good student identity are from the fourth-year survey.
*$p < .05$; **$p < .01$; ***$p < .001$ (two-tailed tests).

honors are nearly eight times lower than for white students (Model 1). SAT scores and having a good student identity are also strongly, positively associated with graduating with honors. The effects of dorm ties and extracurricular memberships are both negative and insignificant (Model 2).

All indicators for high school family resources fail to meet significance thresholds. Within-family and community resources during the high school years do not influence college academic achievement for this sample of talented, ambitious, largely affluent students. These resources could have been important during the high school years and college admissions process, but there is no prolonged effect on college outcomes.

However, more extensive campus networks are associated with an increase in the likelihood of graduating with honors (Model 2). Each additional connection to a campus position is associated with an 11 percent increase in the odds of graduating with honors.[11] Each additional precollege tie to Duke is also associated with an 11 percent increase in the odds, but the effect is not significant. While within-campus networks have a positive effect on final achievement, the use of personal ties is negatively associated with graduating with honors. The use of family contacts for postgraduation plans is associated with over two times lower odds of graduating with honors. Rather than suggesting a negative effect of personal ties on achievement, a more plausible interpretation is that students who lack a credential, such as honors distinction, invest more heavily in personal connections for their postgraduation plans.

Overall, Tables 1 and 2 show little evidence of effects of peer networks on college achievement and suggest a positive effect of campus networks on final achievement.[12] The lack of effects for expansive peer networks on college achievement could be attributable to a sample that is, like the population of students attending selective colleges and universities, exceptional in several regards. As mentioned above, most students in CLL are from highly educated families, across all racial/ethnic groups. Matriculating to an elite university, these students have demonstrated high levels of high school achievement and an ability to navigate educational institutions successfully. The types of resources in peer networks that could facilitate academic achievement—for example, help with studying, advice about courses and instructors—are likely widely available throughout the student body. Having more extensive peer networks than the typical Duke student may only provide greater access to redundant resources.

Postgraduation Plans

Table 3 shows results of logistic regression models predicting the likelihood of attending graduate school full-time in the fall immediately following graduation. Asian and black students are more likely to plan on graduate school than white or Latino students, but the effects of racial/ethnic group and other student background characteristics are not significant. Students who graduate with honors, value a good student identity, and have a natural science major are more likely to plan to attend graduate school the following fall.

As with academic achievement, the measures of peer networks do not have a significant effect on postgraduation plans (Model 2). However, extensive campus networks have a significant, positive effect on postgraduation plans. Each additional tie to a campus position is associated with an 11 percent increase in the odds of planning to attend graduate or professional school the next fall.[13] The use of personal contacts for postgraduation plans is associated with over one and a half times lower odds of continuing with graduate study. While extensive within-campus networks facilitate the transition into graduate school, family and personal networks appear more important for students who plan to work immediately after graduation.

Table 4 presents results from logistic regression models predicting the likelihood of aspiring to a high-grade professional occupation five years after graduation

TABLE 3
Logistic Regression of Attending Graduate School on Social Capital

	Model 1 *Odds Ratio* (t *Score)*	*Model 2* *Odds Ratio* (t *Score)*
Race/ethnicity		
Black	1.434 (1.41)	1.271 (0.87)
Latino	1.063 (0.22)	1.067 (0.23)
Asian	1.492 (1.76)	1.425 (1.47)
Other	0.789 (–0.67)	0.721 (–0.91)
Female	1.356 (1.65)	1.363 (1.65)
Parent education	0.928 (–0.79)	0.911 (–0.96)
SAT (total)	0.999 (–0.80)	1.000 (–0.51)
Major field area		
Social sciences	0.639 (–2.28)*	0.706 (–1.73)
Humanities	0.653 (–1.60)	0.685 (–1.38)
Good student identity	1.576 (3.93)***	1.632 (4.35)***
Graduate with honors	2.214 (3.74)***	2.009 (3.32)***
Campus networks		
Campus ties		1.111 (2.95)**
Dorm ties		1.030 (0.87)
Club ties		0.928 (–0.85)
Personal networks		
Duke ties		1.071 (0.94)
Family networks		0.651 (–2.38)*

Source: Campus Life and Learning (n = 795).
Reference categories: white, male, natural science major.
Note: Weighted estimates; student background and Duke ties are taken from the precollege survey; honors, SAT scores, and major area are from institutional records; postgraduation plans, other campus networks, and good student identity are from the fourth-year survey.
*p < .05; **p < .01; ***p < .001(two-tailed tests).

(Model 1). At the end of college, Asian students report higher occupational aspirations than white students. Extensive campus networks and extracurricular memberships have significant, positive effects on the odds of high-grade professional plans. A one standard deviation increase in campus ties is associated with a 22 percent increase in the odds and an additional extracurricular membership is associated with a 20 percent increase in the odds of high-grade professional aspirations.

Models 2, 3, and 4 predict the likelihood of plans for three high-grade professional occupational categories within Class I of the EGP schema: executives, medical doctors, and lawyers. Together, these three groups contain 52 percent of the sample and 79 percent of all students with high-grade professional plans. These results illustrate three distinctive career pathways, in terms of student background and social networks. Black, Latino, and Asian students are significantly more likely than white students to aspire to be a medical doctor five years after graduation, and white students are more likely to pursue an executive occupation than black students. The odds of female students aspiring to executive careers are about half

TABLE 4

Logistic Regression of Aspirations for High-Grade Professional Occupations on Social Capital, Displaying Odds Ratios (*t* Scores)

	Model 1 *Professional*	*Model 2* *Executive*	*Model 3* *Doctor*	*Model 4* *Lawyer*
Race/ethnicity				
Black	1.072 (0.26)	0.476 (–2.03)*	2.958 (3.22)***	1.569 (1.44)
Latino	1.107 (0.41)	0.704 (–1.15)	2.016 (2.07)*	1.202 (0.61)
Asian	1.691 (1.92)	1.086 (0.26)	3.798 (4.59)***	1.369 (0.94)
Other	1.448 (0.80)	1.279 (0.47)	1.651 (1.04)	0.864 (–0.24)
Female	0.663 (–2.13)*	0.483 (–3.27)***	1.469 (1.52)	0.828 (–0.80)
Parent education	0.992 (–0.09)	1.001 (0.01)	1.275 (1.85)	1.058 (0.46)
Major field area				
Social sciences	0.881 (–0.60)	1.935 (2.66)**	0.196 (–5.96)***	5.775 (5.39)***
Humanities	0.459 (–2.83)**	0.403 (–1.97)*	0.372 (–2.57)**	5.298 (4.32)***
Good student identity	1.471 (3.64)***	0.798 (–1.84)	1.648 (2.97)**	1.249 (1.52)
Graduate with honors	1.016 (0.07)	0.761 (–1.02)	1.149 (0.49)	1.443 (1.44)
Professional plans	1.904 (2.98)**	2.801 (2.56)*	1.550 (1.44)	1.185 (0.58)
Campus networks				
Campus ties	1.078 (2.03)*	1.005 (0.11)	1.171 (3.30)***	0.929 (–1.54)
Dorm ties	1.010 (0.28)	0.991 (–0.21)	0.937 (–1.38)	1.081 (1.84)
Club ties	1.202 (2.02)*	1.228 (1.98)*	1.340 (2.79)**	0.995 (–0.05)
Personal networks				
Duke ties	0.940 (–0.82)	0.884 (–1.28)	0.897 (–1.19)	1.216 (2.34)*
Family networks	0.940 (–0.31)	1.196 (0.78)	0.860 (–0.63)	1.607 (2.04)*

Source: Campus Life and Learning ($n = 795$).
Reference categories: white, male, natural science major.
Note: Weighted estimates; student background, professional plans, and Duke ties are taken from the precollege survey; honors and major area are from institutional records; postgraduation plans, other campus networks, and good student identity are from the fourth-year survey.
*$p < .05$; **$p < .01$; ***$p < .001$ (two-tailed tests).

as large as male students, and female students are more likely to plan to become a medical doctor. Natural science majors are more likely to plan to be a medical doctor, social science and humanities majors are more likely to plan to be a lawyer, and social science majors are most likely to plan to be an executive. While graduating with honors is positively associated with medical and law career plans, it is negatively and insignificantly associated with executive plans.

Dorm ties have no significant effects on postgraduation plans. Extracurricular memberships have a significant, positive effect on plans for a high-grade professional occupation, as well as executive and medical careers. Each additional club membership is associated with a 23 percent increase in the odds of plans to be an executive and 34 percent increase in the odds of plans to be a medical doctor. Using a national sample of U.S. college and university students, Astin (1993:269–71) shows positive associations between participating in fraternities or sororities and the choice of business or law as a career, participating in student government and law careers, and volunteering and medical careers. In an analysis not shown, I replace the variable for number of extracurricular activities with dummy variables describing membership in each of the eight activities. Participation in a fraternity or sorority ($t = 2.88$) and student government ($t = 2.05$) in the fourth year is positively associated with the odds of aspiring to a career as an executive. Participation in service activities ($t = 2.98$) is positively associated with plans to be a medical doctor. Further replicating Astin's (1993) findings, other extracurricular activities are not significantly associated with occupational aspirations.

Extensive campus ties are also positively associated with professional aspirations and plans to become a medical doctor.[14] Precollege ties to Duke and the use of family contacts strongly affect the likelihood of pursuing a career as a lawyer. Each additional Duke tie is associated with a 22 percent increase in the odds of postgraduation aspirations to become a lawyer, and the use of family contacts is associated with a 61 percent increase. In results not shown for plans to be a college professor or scientist, the effect of using family contacts is negative ($t = –2.21$). The use of family contacts appears to be more important for students pursuing careers as a lawyer than for aspiring medical doctors, professors, or scientists.

Overall, Tables 3 and 4 illustrate effects of within-campus and family networks on two general career pathways.[15] Having extensive ties to campus positions appears to be more important for students pursuing careers that typically involve graduate or professional study, such as college professors and especially medical doctors. Conversely, the use of family and personal contacts for postgraduation plans is associated with working full-time after graduation and plans to become a lawyer. These results suggest that the resources contained in within-college networks are more readily convertible into future advantages for students pursuing careers that have stronger links to postsecondary institutions and typically involve graduate study. Off-campus, personal networks likely have more immediate returns for students who transition directly into the workforce after graduation. Students' particular investment strategies—both of an instrumental (Lin 2001) and relatively unconscious nature (Bourdieu [1983] 1986)—result in the accumulation of social resources that facilitate distinct high-status career pathways.

DISCUSSION

The college years serve as an important time for the accumulation of social resources. For all racial/ethnic groups, students report broader, more extensive campus networks as they move through the college years. In the fourth college year, the average campus network includes ties to about 66 percent more positions than in the first year and about 24 percent more positions than the second year. The use of family and personal networks is also quite prevalent among these selective university students. Over half of students used family contacts for their postgraduation plans, and over two-thirds of students reported an existing tie to Duke before arriving on campus.

The social networks examined in this article represent a mix of weak and personal ties, including within-campus networks and family or personal networks away from campus. While there is little evidence of effects on early college achievement, extensive campus networks predict a greater likelihood of graduating with honors, plans to attend graduate school, and plans to attain high-status professional occupations.[16] Students with extensive campus networks and extracurricular memberships are more likely to aspire to high-status occupations, especially as medical doctors. These campus networks include experts that can provide access to specialized knowledge to facilitate the transition into graduate study and entry into high-status careers (Cornwell and Cornwell 2008). In contrast, family or personal contacts appear more important for aspiring lawyers, and for students entering the workforce directly after graduation, and are accessed more frequently by students with lower final grades.

Of course, this study contains important limitations. First, these results should not be generalized to all postsecondary students, although CLL is comparable to students attending other selective colleges and universities. Across all racial/ethnic groups, students at Duke predominately come from highly educated households and are academically motivated and highly ambitious. Nearly two-thirds of all students report plans to pursue a high-status professional occupation in the years after graduation. As a comparison, during the late 1990s less than one-fifth of the white, adult, male full-time workforce is included in Class I of the EGP schema (Morgan and McKerrow 2004:225). The social resources contained within campus networks at an elite institution likely have a different character than at other colleges and universities.

Second, while CLL contains more detail—including institutional data and multiple survey waves across the college years—than is typically found in studies of postsecondary students, I must use indirect measures of occupational attainment and examine expectations taken at the end of the fourth college year.

Third, a reader could be concerned about potential endogeneity bias. The reported effects of social capital on achievement and postgraduation plans could be due to correlated unobserved variables, or the causal direction could be incorrectly specified (Mouw 2006). These are problems common to studies of the effects of peer networks (Lyle 2007) and faculty interactions on postsecondary student outcomes (Pascarella and Terenzini 2005:524) and the use of contacts in job searches (Mouw 2003). These issues speak to the need for further qualitative studies to examine the cultivation of campus social networks (Manski 1993).

To address the possibility of spurious effects of personal characteristics on the relationship between networks and outcomes, I included a range of variables that are likely associated with the cultivation of campus network ties. Models that predict academic outcomes include controls for precollege achievement and good student identity, and models predicting postgraduation plans include controls for college achievement and precollege occupational aspirations. Additionally, I examined the effects of lagged social capital measures, replacing the fourth-year networks measures with second-year variables when possible. Results for fourth-year outcomes generally appear robust under these alternate specifications, which use a smaller sample size (n = 700) due to the requirement of an additional wave of data. Each additional second-year campus tie is associated with a 13 percent increase in the odds of graduate school plans (t = 3.41), an 8 percent increase in the odds of high-grade professional aspirations (t = 1.98), and an 11 percent increase in the odds of plans to become a doctor (t = 2.27). Each additional second-year extracurricular membership is associated with a 28 percent increase in the odds of high-grade professional aspirations (t = 2.37) and a 24 percent increase in the odds of plans to become a lawyer (t = 2.14). The effects of other second-year network measures are identically signed as the fourth-year results but are insignificant.[17] With these limitations in mind, these results still suggest that extensive campus networks facilitate achievement and occupational attainment along a high-status track.

Sociological inquiry regarding social capital has developed along two general perspectives. Following Coleman, the dominant trend in the sociology of education has been to emphasize social capital as a source of positive community norms and social control. Using indicators included in large national data sets, such as the National Educational Longitudinal Study, recent studies have shown positive effects of family resources on educational outcomes for secondary students (e.g., Hoffman and Dufur 2008; Kao and Rutherford 2007; Ream 2005; Sandefur et al. 2006). However, Coleman's perspective has received considerable criticism, largely stemming from its structural-functional foundation (e.g., Dika and Singh 2002; Lin 2001; Morgan and Sørensen 1999; Portes 2000; Woolcock 1998). In particular, Coleman insufficiently distinguishes between the resources that act as social capital and individuals' ability to access these resources through social networks and memberships (Portes 1998).

Like Coleman, Bourdieu points to social networks as sources of social capital and locates the family as key in providing students with resources that facilitate success in the educational system and future occupations (Devine 2004; Lareau 2003). Unlike Coleman, Bourdieu's perspective is particularly concerned with structural constraints and inequalities regarding access to resources. To Bourdieu, social capital is the sum of resources—material and symbolic, actual and potential—accessible through networks of institutionalized relationships. A resources-in-networks perspective has been applied to studies of occupational attainment (Lin 1999) and a few studies of educational outcomes (e.g., Lee and Brinton 1996; Stanton-Salazar and Dornbusch 1995). A contribution of this study is to show the usefulness of this perspective, and the related position-generator methodology, for studies of educational outcomes. For students at an elite university

campus, investment in social capital—in the form of extensive campus networks—facilitates final college achievement and pathways toward high-status professional careers.

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APPENDIX A

Dropout Bias, Nonresponse Bias, and Missing Data

Registrar's Office data provided enrollment information for students in each survey year. Nonenrollment might occur for multiple reasons, including academic or disciplinary probation, medical or personal leave of absence, dismissal, transfer, or involuntary withdrawal. At the end of the first year, fewer than 1 percent ($n = 12$) of students were not enrolled, and about 5 percent ($n = 81$) of students were not enrolled at the end of the senior year. Tests for differences were conducted using admissions file information of those enrolled versus not enrolled at the end of each survey year. The test variables included racial/ethnic group, SAT verbal and mathematics score, high school rank, admission committee rating, parental education, financial aid applicant, type of high school attended, and citizenship. Only two differences were significant ($p < .05$). After the first year, dropouts had higher SAT verbal scores, and after the senior year, dropouts had a lower admissions rating.

Similar tests were conducted comparing respondents and nonrespondents for each wave, using the same variables as above plus major field, legacy admission status, and previous semester GPA. Most variables reveal no significant or only sporadic differences. Other variables show differences that are more systematic. Nonrespondents at each wave have lower SAT scores (mathematics: nine to fifteen points; verbal: eighteen to twenty-two points), are less likely to be from a public high school and somewhat more likely to be from a private (nonreligious) high school, and have lower grades in the previous semester by about one-quarter of a letter grade. Nonrespondents have slightly higher educated parents at Waves 1 and 3.

Mean imputation was used for variables with less than 5 percent missing (Cohen et al. 2003). For SAT scores (10.8 percent missing), missing values were replaced with a regression predicted score using ACT score, high school rank, and admissions committee ratings. A prediction equation explained more than 60 percent of the variance in SAT scores, suggesting that minimal bias will be present when using the imputed variable (Landerman, Land, and Pieper 1997).

APPENDIX B

Measures and Descriptive Statistics, Campus Life and Learning Project

Variable	*Metric/Notes*	*Means (Standard Deviations) by Racial/Ethnic Group*									
		White		*Black*		*Latino*		*Asian*		*Other*	
Student Background and Other Control Variables											
Female	1 = *female*, 0 = *male*	0.47	(0.50)	0.69	(0.46)	0.48	(0.50)	0.45	(0.50)	0.62	(0.49)
Parent education	1 = *high school or less*, 2 = *college degree*, 3 = *some graduate school*, 4 = *professional degree*	3.18	(0.88)	2.54	(1.13)	2.86	(1.04)	3.11	(0.96)	2.80	(0.99)
SAT (total)	Scholastic Aptitude Test, verbal and mathematics (max. 1600)	1,415.27	(101.20)	1,268.92	(104.73)	1,340.33	(100.57)	1,458.22	(99.68)	1,376.03	(124.05)
Major field area	Final/declared major field; dummy variable for groups										
Natural sciences		0.34	(0.47)	0.23	(0.42)	0.26	(0.44)	0.55	(0.50)	0.35	(0.48)
Social sciences		0.47	(0.50)	0.60	(0.49)	0.60	(0.49)	0.37	(0.48)	0.42	(0.50)
Humanities		0.19	(0.39)	0.17	(0.37)	0.15	(0.35)	0.07	(0.26)	0.23	(0.42)
Good student	1 = *not at all important*,										
First year	5 = *extremely important*	4.01	(0.91)	4.39	(0.71)	4.19	(0.95)	4.22	(0.97)	4.51	(0.69)
Fourth year		3.94	(0.96)	4.08	(0.89)	3.95	(1.01)	4.11	(0.99)	4.07	(1.04)
Professional plans (precollege)	1 = *expect high-grade professional job 5 years after graduation*	0.82	(0.38)	0.79	(0.41)	0.86	(0.35)	0.83	(0.37)	0.77	(0.43)
Family resource variables											
Intact family	1 = *both parents in home*	0.86	(0.35)	0.57	(0.50)	0.74	(0.44)	0.91	(0.29)	0.64	(0.48)
Siblings	Number of siblings	1.59	(0.88)	2.01	(1.38)	1.64	(1.00)	1.37	(0.80)	1.79	(1.55)
Mother work	1 = *mother works full-time*	0.40	(0.49)	0.72	(0.45)	0.51	(0.50)	0.47	(0.50)	0.59	(0.50)
Religious school	1 = *attended religious high school*	0.10	(0.30)	0.12	(0.33)	0.25	(0.43)	0.07	(0.26)	0.15	(0.36)
Family moves	Number of family moves during adolescence	0.86	(1.53)	1.52	(1.90)	1.25	(1.75)	1.66	(1.81)	1.14	(1.55)
Parent-school interaction	Scale (max. 25) describing parents' participation in school activities	13.91	(3.97)	12.56	(4.58)	12.91	(4.12)	10.98	(3.73)	12.79	(4.36)

(*continued*)

APPENDIX B (continued)

Variable	*Metric/Notes*	*Means (Standard Deviations) by Racial/Ethnic Group*									
		White		*Black*		*Latino*		*Asian*		*Other*	
Social capital variables											
Campus ties	Number of campus positions										
First year	accessed (max. 12)	2.82	(2.35)	3.45	(2.73)	3.44	(3.11)	2.86	(2.76)	3.51	(1.80)
Fourth year		4.78	(2.64)	6.00	(2.99)	4.89	(2.72)	4.90	(2.98)	5.53	(3.08)
Dorm ties	Number of residential halls										
First year	(max. 13, first year; 8, fourth year)	10.21	(3.07)	11.52	(2.45)	10.88	(2.84)	10.11	(2.95)	10.93	(3.14)
Fourth year		5.39	(2.89)	4.94	(2.91)	5.35	(2.72)	5.78	(2.53)	6.00	(2.42)
Club ties	Number of extracurricular										
First year	memberships (max. 8)	1.58	(1.09)	1.72	(1.04)	1.81	(1.20)	1.73	(1.19)	1.58	(1.12)
Fourth year		1.39	(0.99)	1.77	(1.20)	1.68	(1.20)	1.38	(1.08)	1.57	(1.17)
Duke ties	Number of preadmissions contacts										
Precollege	(max. 5)	1.64	(1.29)	1.26	(1.18)	1.15	(1.18)	0.98	(1.13)	1.34	(1.25)
Family networks	Use family/personal contacts for postgraduation plans (1 = *yes*)	0.56	(0.50)	0.48	(0.50)	0.57	(0.50)	0.36	(0.48)	0.63	(0.49)
Academic and occupational outcomes											
First-year GPA	A = *4.0* (from transcripts)	3.30	(0.52)	2.87	(0.57)	3.12	(0.54)	3.35	(0.47)	3.16	(0.46)
Honors graduate	1 = *yes* (from transcripts)	0.29	(0.47)	0.04	(0.19)	0.14	(0.35)	0.33	(0.47)	0.16	(0.37)
Graduate school	1 = *plans to attend graduate school in the fall following graduation*	0.35	(0.48)	0.40	(0.49)	0.32	(0.47)	0.48	(0.50)	0.32	(0.47)
Occupation plans	Expected occupation five years after										
Professional (any)	graduation (fourth-year survey)	0.63	(0.48)	0.67	(0.47)	0.62	(0.47)	0.77	(0.42)	0.70	(0.46)
Executive		0.17	(0.37)	0.10	(0.30)	0.16	(0.36)	0.19	(0.39)	0.15	(0.36)
Doctor		0.11	(0.31)	0.25	(0.43)	0.16	(0.37)	0.37	(0.49)	0.21	(0.41)
Lawyer		0.18	(0.39)	0.21	(0.41)	0.18	(0.39)	0.12	(0.33)	0.13	(0.34)

Note: Cronbach's alphas for scales used in the analysis are parent-school interaction (0.75), campus ties (0.77, first year; 0.74, fourth year), dorm ties (0.84, first year; 0.89, fourth year), and precollege Duke ties (0.67).

NOTES

1. Lin (2001:25) offers an operational definition of social capital as "the resources embedded in social networks accessed and used by actors for actions."
2. Babcock and Marks (2009), examining six waves of data across four national data sets, find that the average time spent in class or studying by U.S. college and university students has declined from forty hours a week in 1961 to about twenty-six hours a week in 2004. As a comparison, during a typical week first-year students in CLL spend about twenty-four hours in class or studying and about eighteen hours partying, socializing with friends, or participating in extracurricular clubs (Bryant, Spenner, and Martin 2007:26–35).
3. Bowen and Bok (1998:337) define highly selective institutions as having a SAT score of 1300 or above. The average SAT scores of Duke's incoming classes of 2001 and 2002 were 1392 and 1405, respectively. Other selective schools in the College and Beyond included Bryn Mawr, Swarthmore, and Williams colleges and Princeton, Rice, Stanford, and Yale universities.
4. About 70 percent of students enrolled at Duke are white, 8 percent are black, 4 percent are Hispanic, 14 percent are Asian, and about 4 percent are bi-/multiracial or of another race (Spenner et al. 2005:197). At all U.S. public and private four-year colleges and universities, about 75 percent of students are white, 11 percent are black, 7 percent are Hispanic and Asian, and about 1 percent are of another race or race is unknown (Snyder 2002). Other comparisons suggest that Duke is highly comparable to other elite universities (including Harvard, Princeton, Yale, Dartmouth, Brown, Stanford, and Columbia and the University of Pennsylvania). The student-to-faculty ratio at Duke is 9.0:1, compared to 8.2:1 for elite universities. The 25th and 75th percentile of SAT scores at Duke are 1300 and 1500; for elite universities, comparable figures are 1334 and 1522 (Bryant et al. 2007:92–95).
5. For the placement of respondents in racial/ethnic categories, Census-type questions were used that first ask if the respondent is Hispanic and then elicit a racial category, including bi- and multiracial options. Virtually all Hispanic respondents also reported their race as white; this group was classified as Latino. If data were missing on these questions, information from the admission form was used when possible.
6. Residential policy stipulates that first-year students reside in dormitories on east campus, while most upper-class students reside in quads on west campus. The first college year survey asked students about ties to the thirteen residential dorms on east campus, and the fourth-year survey asked about the eight residential quads on west campus.
7. About 11 percent of undergraduate men and about 7 percent of women participate on twenty-one varsity sports teams, including about 3 percent of male students who are on high-profile Division IA football and basketball teams (Shulman and Bowen 2001:34, 127). Student-athletes, especially members of high-profile teams, likely differ from other students in their socioeconomic background, academic performance, test scores, and postgraduation plans. Very few CLL respondents were members of high-profile teams, and all results are entirely consistent if I exclude intercollegiate athletes from the analysis or include a separate dummy variable for intercollegiate sports.
8. Class I of the EGP schema includes professionals, regardless of whether the incumbent is an employee or self-employed, and managers of large firms. Unfortunately, CLL data lack information about firm size; professionals, administrators, and officials in firms smaller than twenty-five employees should be coded as Class II, lower grade professionals. Class position was coded from the three-digit U.S. Census 1990 Occupation Classification, following the Supplemental Appendix to Morgan and McKerrow (2004).

9. Replacing dorm ties in Table 1 with a dummy variable for having ties to less than half of the dorms yields a significant, positive coefficient of .146 ($p < .001$). Other items in CLL ask students about time-use in a typical week. Compared to other students, these "isolated" students spend about one hour less each week socializing with friends and over two hours less partying but do not spend significantly more time studying or in class.
10. Models predicting cumulative first-year GPA show similar results. Extensive dorm ties continue to have a significant, negative effect on early college achievement (coef. = –.018, $p < .001$), while other social network and family resource variables are insignificant.
11. In additional analysis, I decompose the campus ties measure into separate dummy variables for each additional position. Both knowing a humanities faculty member and knowing a graduate student have a positive, significant effect on the likelihood of graduating with honors.
12. OLS models predicting final (cumulative) GPA yield consistent results. The use of family contacts on postgraduation plans is associated with .09 of a letter grade decrease in final GPA ($p < .001$), and a one standard deviation increase in campus ties is associated with a significant, positive effect of .04 of a letter grade ($p < .05$).
13. Under an alternative specification that decomposes the campus ties measure, knowing a program director or department chair, medical center faculty or staff, and graduate or professional student each have positive, significant effects on plans to attend graduate school.
14. Decomposing the campus ties measure, I find positive, significant effects of knowing a program director or department chair, natural science faculty member, and graduate student on professional occupation plans. For plans to be a medical doctor, I find positive effects of knowing a natural science faculty member, medical center faculty or staff, and graduate or professional student.
15. Under alternative model specifications, results for postgraduation plans are entirely consistent with the inclusion of precollege family resources variables. The effects of within-college networks are robust, while the family resources variables fail to reach significance with one exception: Number of siblings ($t = –2.10$) is negatively associated with high-grade professional aspirations.
16. The campus ties measure used in this analysis is comparable to the "extensity" measure typically derived from the position-generator methodology (Lin et al. 2001). Other indicators of social capital used in studies of the job search process include "upper reachability," or the highest occupational status score available accessed, and "range," or the difference between the highest and lowest status scores. In results not shown, I replaced the campus ties variable with these alternate measures. Results are consistent with these other social capital indicators. I report results from the "extensity" measure for ease of interpretation and because the position-generator modules included in CLL were not designed to sample the full occupational hierarchy.
17. Second-year extracurricular memberships have a positive ($t = 1.29$) effect on executive occupation plans, and extensive campus ties are positively associated with the likelihood of graduating with honors ($t = .45$) and final cumulative GPA ($t = 1.49$).

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