Success in Graduate School and After: Survey Results from the Midwest Region, Part III

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Ph.D.-granting institutions want students to complete their doctoral degrees. Most graduate departments in political science focus their training on preparing students to pursue academic careers. We provide valid and reliable empirical data about the factors that affect students' prospects for successfully completing political science doctoral degrees and finding academic jobs. Because National Science Foundation data (2002, Table 53) reveal significant differences in the number of doctoral degrees awarded to women compared with men, we test a series of hypotheses based on the existing literature that may account for these differences. Our paper applies knowledge gained from previous studies, such as in the area of mentoring (Wasby 2001; Anderson 2001; Benesh 2001), to explain observed gender differences in doctoral degree completion and success in gaining academic employment thereafter.

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In creating the database for this project, we undertook the first of a two-part panel study in the spring of 1997. The target population for the study was all currently active graduate students in Ph.D.-granting institutions in the Midwest region (see Appendix A). We contacted a sample of the students and asked them to complete a mailed questionnaire comprised of queries about current experiences in their graduate programs.[1] In 2003, we wrote and asked everyone who had received the first survey to complete a second one.

The panel study was prompted by a demographic pattern of women reaching near parity with men in political science graduate enrollments, yet being underrepresented to a considerable extent in doctoral degrees awarded. According to data collected by the National Science Foundation (2002) 36% of all doctorates awarded in the social sciences in 1992 were granted to women; by 2001 that percentage had increased to 42.9%. For political science, the percentage of doctorates going to women increased from 29.2% in 1992 to 33.4% in 2001. The disturbing pattern here is that while women are making gains toward Ph.D. degree completion measured as a percentage of total degrees awarded, the progress is neither increasing proportionately to the growing numbers of women admitted to graduate study in the discipline nor increasing as rapidly as in most other social sciences. This parallels what some have called "a stalled revolution" in gender roles across society. Jacobs (1999) and others have found evidence of a plateau in gender segregation of occupations (Hochschild 1989). A similar stalling in women's progress may be occurring within our discipline.

The first wave of this panel study revealed that departmental attention to faculty mentoring, regularized communication, orientation programs, and decisive action when incidents of discrimination and harassment occur can increase students' expectations that they will complete their doctoral degrees (Hesli, Fink, and Duffy 2003a; 2003b). The goals of the second wave of the panel study were to ascertain whether previous expectations and perceptions affected subsequent degree completion and success in early career stages; to document any obstacles and connect these to previous findings on issues related to a hostile climate for women in graduate programs; and to contribute to an assessment of the value of recent efforts in the profession to improve both mentoring in the graduate experience and overall preparation for the roles of teaching, research, and service associated with entry-level academic positions.

In analyzing data from the second wave of the panel study, we hypothesized that women's under representation in political science is related to the differential treatment that they receive during their graduate careers. Previous work documents that student-faculty relationships directly affect whether students complete degrees, the time to degree, and student satisfaction with the experience of obtaining a doctoral degree (Baird 1993; Bowen and Rudenstine 1992; Hodgson and Simoni 1995; Nerad and Cerny 1993; Tinto 1993; Benkin, Beazley, and Jordan 2000). Within political science, the advisor-advisee relationship is recognized as critical (Andersen 2001; Benesh 2001; Farrar-Myers 2001; Wasby 2001). The broader literature on career development suggests that women have more difficulty obtaining mentors and successful mentoring relationships than do men (Lin 2000; McGuire 2000; Reskin 2002); thus, we test for gendered differences in the strength and importance of advising relationships for success in graduate school and after.

We also hypothesize that the reputation and ranking of one's graduate department affect the likelihood of a

Table 1
Response Consistency between 1997 and 2003 Surveys

Question	1997 Mean	2003 Mean	Significance (t-score)
I feel the courses emphasize research methodology too much.	3.54	3.58	−0.505
In my seminars, professors make sure that all students' participation is valued.	2.15	2.36	0.618
The Chair or Head treats everyone fairly and equitably.	2.48	2.29	1.826
The Director of Graduate Studies offered opportunities in the department to everyone.	2.82	2.78	0.334

graduate student completing a degree and finding employment in academia. A department's rank often serves as a heuristic shortcut for evaluating the quality of a department—both for students vying for admission and for employers hiring new faculty. Students in higher ranked departments may feel better about their future job prospects and therefore be more inclined to remain in graduate school. Job seekers from more highly ranked departments likely have an edge in obtaining positions within academia and at Ph.D.-granting institutions.

In addition, we hypothesize that participation in professional conferences and a record of publications improve the job prospects of Ph.D. recipients. In political science, a recent assessment indicated that an overwhelming majority participated in academic conferences, and about 33% had submitted research for journal review (Dolan, Kropf, O'Connor, and Ezra 1997).

In evaluating success in graduate school, we employ (1) degree completion, (2) whether a graduate found employment in the academic sector, and (3) the nature of the institution where employment was found as outcome indicators. A majority of both male and female graduate students in recent studies aspire to academic positions (Dolan, Kropf, O'Connor, and Ezra 1997). The proportion of women in faculty positions in political science is even lower than the proportion of degrees being granted to women (Committee on the Status of Women 2001). In a period when women were a majority of undergraduate students at traditional four-year institutions, and were earning 47% of the bachelor's and 50% of the master's degrees in political science, they were only 22% of the faculty (Committee on Status of Women 2001).

To begin our report, we note that responses were remarkably stable over the six-year time span of the panel study. It was possible that former students might engage in post-hoc rationalizations that would alter perceptions (Moore and Keith 1992; Keith and Moore 1995) given that the decision to leave graduate school prior to finishing one's degree

alters one's career plans. We find, though, that assessments of various aspects of the graduate school experience vary little despite the six-year interlude between surveys. The figures in Table 1 demonstrate the consistency of responses across the two surveys in terms of stable means. For example, respondents were asked in both 1997 and 2003 whether they believed too great an emphasis was being placed on research methodology in their courses. In 1997, when all respondents were currently graduate students, the mean score was 3.54. In 2003, when the vast majority of respondents were out of graduate school, the mean score was 3.58—a statistically insignificant difference. Other questions, addressing issues like student participation, fairness of treatment, and equality of departmental opportunities, also show no statistically significant differences.

Moving to tests of the hypotheses, we introduce the three outcome variables: (1) whether the (former) student completed the Ph.D. degree; (2) whether the former student is currently a faculty member at a university or college; and (3) if a faculty member, the type of institution where he or she is currently employed. According to our panel data, only 20% of those who were enrolled in a political science Ph.D. program in the Midwest region in 1997 left the program without completing the program. Though women were slightly more likely to leave graduate school before completing a doctoral degree (22%) than were men (19.8%), the difference is not statistically significant. Out of the total, 49% are currently faculty members. More than half (53.6%) of the men, but less than half (41.7%) of the women, are faculty members. The difference, though,

does not achieve statistical significance. Among those who are faculty members, 55% are at a Ph.D.-granting institution. Men teach and research at Ph.D.-granting institutions at higher rates than women, but these male/female differences also fail to achieve statistical significance (Table 2). Given the previous research on this topic, bivariate findings that demonstrate that gender is not significant require analyses that are more sophisticated.

The three outcome variables serve as the dependent variables in a series of multivariate predictive models. Drawing on previous research and our expectations, we identified eight specific independent variables that we hypothesize will both affect the above outcome variables and produce gendered differences. These include marital status, faculty advisor support of career, career planning and placement services offered by the department, publications while in graduate school, funding, graduate curriculum emphasis on research methodology, and ranking of the graduate institution attended. Although other variables proved to be of initial interest in developing the survey, we have chosen a more parsimonious model with the above eight independent variables.[2]

In addition to the hypothesis that gender would be a significant factor in completing a doctoral degree and obtaining academic employment, we also expected that married or partnered students would be more likely to complete their degrees and pursue academic careers. The assumption was that spouses or partners would provide the emotional (and possibly financial) support necessary for handling the stress of graduate school and the academic job market (Peters 1997).

Table 2
Where Faculty Member is Employed by Sex

	Male	Female	Total
Ph.D.-granting institution	57.1%	50.0%	54.8%
M.A.-granting institution	16.3%	25.0%	19.2%
Other 4-year institution	26.5%	25.0%	26.0%
Total	100.0% (49)	100.0% (24)	100.0% (73)

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Recent literature on faculty across disciplines, however, suggests that the burdens of family continue to impede female academics (Jacobs and Gerson 2004; Jacobs and Winslow 2004; Mason and Goulden 2004).

In evaluating the importance of faculty advising, we employ indicators of support both from one's formal faculty advisor and from other members of the department. We hypothesized that respondents who indicated that they had received a high level of career support from their faculty advisor and rated their department's career planning and placement services positively would be more likely to complete their degrees and find job success in the academic market. For faculty advisor support of career, we created a scale from the responses to four related questions (see Appendix B).

Because publications are a primary means for transmitting knowledge within academia, we expected that those people who begin to engage in this transmission pattern early would be more likely to continue their careers within academia.[3] We also hypothesized that receiving funding from one's department would increase the likelihood of completing a Ph.D. and obtaining an academic position. Outside employment while in graduate school can take time away from one's studies and the building of relationships with faculty that foster success both in graduate school and beyond.

In addition, given the ubiquity of academic rankings and the importance often attached to being ranked highly, we anticipated that respondents at top tier institutions would be significantly less likely to leave graduate school without a degree and more likely to enter academia and teach at Ph.D.-granting institutions. For our purposes, we define top tier departments as those ranked in the top 20 political science departments nationally by the National Research Council (see McCormick and Rice 2001). We also expected that students who felt their departments place too much emphasis on methods courses would be less likely to remain in graduate programs or seek academic employment. Together, the above hypotheses address the effects of each

Table 3
Logit Estimates for Factors Affecting Completion of a Doctoral Degree

Variable	Hypothesized Direction	Total Sample	Men	Women
Constant		−3.094	−5.938	−0.234
		(1.901)	(2.810)	(2.956)
Gender (Female)	−	0.017		
		(0.476)		
Marital Status (Married)	+	1.123**	1.756**	0.852
		(0.515)	(0.758)	(0.850)
Respect, approachability, and career support from faculty advisor	+	0.220***	0.281***	0.138
		(0.082)	(0.109)	(0.147)
Career planning and placement services from department	+	0.058	0.374	−0.295
		(0.238)	(0.330)	(0.429)
Received graduate assistant funding	+	0.319	0.189	0.328
		(0.379)	(0.541)	(0.598)
Published while in graduate school	+	−0.264	0.160	−0.273
		(0.531)	(0.732)	(0.862)
Too much emphasis on research methodology	−	−0.514**	−0.356	−0.585
		(0.216)	(0.289)	(0.363)
Top 20 universities	+	0.977*	1.453**	0.591
		(0.510)	(0.721)	(0.837)
$\div^2$		23.841	24.130	4.700
Df		8	7	7
p value		0.002	0.001	0.696
N		143	88	55

Note: The survey question for the dependent variable is "*Did you leave graduate school at any time without completing your degree?*" in which 1 = No and 0 = Yes; *Gender* is a binary variable where 1 = female and 0 = male; *Marital Status* is a binary variable where 1 = married/partnered and 0 = single; *Published while in graduate school* is a binary variable where 1 = yes and 0 = no; *Top 20 Universities* is a binary variable where 1 = Indiana University, Ohio State University, University of Chicago, University of Michigan, or University of Wisconsin-Madison, and 0 = other universities. For other independent variables, higher values correspond with respondents strongly agreeing with the statement. For more information on the construction of variables, see Appendix B. Standard errors are in parentheses. *$p < 0.10$; **$p < 0.05$; ***$p < 0.01$.

independent variable on the outcomes we identified. We also hypothesize that the effects would be different for men and women.

In all three models, we conduct logit analyses with a dichotomous dependent variable. We measure whether the student completed the requirements for a doctoral degree (Table 3), whether he or she is employed as a faculty member (Table 4), and whether, among faculty members, his or her current employment is at a Ph.D.-granting institution (Table 5). Within each outcome model, we tested three models: one for the total sample, one for men, and one for women. First, we used a total sample model to explore the stated hypotheses, while controlling for gender as a dummy variable. This model allows us to first identify the independent variables that do influence the outcome, controlling for gender, but not assuming that the effects would be contingent on gender. In the next two models, for the sample of men and the sample of women, we test the

gendered effects of the independent variables and are able to identify if factors such as mentoring work differently for men than for women. Together, these three models give us a more complete analysis as to what affects success in graduate school and beyond.

We begin with the results of the total sample and immediately see the importance of support from a faculty advisor (Table 3). Students who decided to leave their graduate programs at some point in their career had significantly less supportive relationships with their faculty advisors. Of those rating their advisor on the low end of the scale, the predicted probability of completing the degree is 0.28, holding all other variables at their mean. This changes dramatically if the student rates his or her advisor on the other end of the support scale; for those students, the predicted probability of completing the degree is 0.91.

A stronger, more supportive relationship with one's faculty advisor also significantly increases the chances that a

Table 4
Logit Estimates for Factors Affecting Entry into an Academic Career

Variable	Hypothesized Direction	Total Sample	Men	Women
Constant		−6.581	−7.056	−7.689
		(1.936)	(2.685)	(3.824)
Gender (Female)	−	−0.210		
		(0.397)		
Marital Status (Married)	+	0.716	0.652	1.070
		(0.452)	(0.589)	(0.786)
Respect, approachability, and career support from faculty advisor	+	0.155**	0.191**	0.081
		(0.072)	(0.095)	(0.121)
Career planning and placement services from department	+	0.558***	0.778***	0.241
		(0.199)	(0.266)	(0.347)
Received graduate assistant funding	+	0.521	0.196	1.452
		(0.391)	(0.489)	(1.029)
Published while in graduate school	+	0.683*	0.733	0.894
		(0.406)	(0.549)	(0.656)
Too much emphasis on research methodology	−	0.054	0.088	0.060
		(0.176)	(0.238)	(0.287)
Top 20 universities	+	−0.343	−0.312	−0.322
		(0.402)	(0.522)	(0.673)
$\div^2$		35.43	25.17	13.87
Df		8	7	7
p value		0.000	0.001	0.054
N		144	88	56

Note: The survey question for the dependent variable is "*Are you currently a faculty member at a university or college?*" in which 1 = Yes and 0 = No; *Gender* is a binary variable where 1 = female and 0 = male; *Marital Status* is a binary variable where 1 = married/partnered and 0 = single; *Published while in graduate school* is a binary variable where 1 = yes and 0 = no; *Top 20 Universities* is a binary variable where 1 = Indiana University, Ohio State University, University of Chicago, University of Michigan, or University of Wisconsin-Madison, and 0 = other universities. For other independent variables, higher values correspond with respondents strongly agreeing with the statement. For more information on the construction of variables, see Appendix B. Standard errors are in parentheses. *$p < 0.10$; **$p < 0.05$; ***$p < 0.01$.

person will become a faculty member after completing his or her Ph.D. (Table 4) and increases the likelihood that someone will find employment at a Ph.D.-granting institution (Table 5). Mentoring provides the support that students need to see academia as a viable post-graduation option and to gain entry into the academic realm. These gains are not as large in magnitude as those seen with the decision to complete the degree, but the probability of being hired as a faculty member or obtaining a position at a Ph.D.-granting institution increases by 0.40 if the faculty advisor is rated as very supportive, holding all other variables at their mean. As most Ph.D. programs in political science aim to place their students in academic institutions and, preferably, at research institutions, this indicates that departments should strive to ensure that graduate students find and maintain satisfactory relationships with faculty advisors.

Faculty advisors are not the only source of support for graduate students, though, and other departmental faculty and staff members can play an important

role in retaining graduate students and helping them succeed after graduation. A department's career planning and placement services can have a significant impact on whether students pursue an academic career. The probability of securing a faculty position increases from 0.22 to 0.73 if the student rates his or her department as helpful in the process of obtaining a desirable position, holding all other variables at their mean (Table 4).

Students need support both in their academic and personal lives. Support for the latter comes through the significance of marital status. Married or partnered students are significantly more likely than single students to complete their doctoral degree programs (Table 3). The emotional support that spouses or partners may provide complements the academic support that successful students receive from their advisors.

Other factors also enter into a person's decision to stay in graduate school or to enter academia. Table 3 shows that students who feel that too much emphasis is placed on research methodology are less

likely to remain in their programs, though Tables 4 and 5 indicate no relationship between feelings about methodology and one's later career path. The probability of completing the degree increases by 0.33 if the student does not think the department places too much emphasis on research methodology, holding all other variables at their mean. This may indicate a need for departments to be more up front with students about methodological expectations prior to their entry into graduate programs. Incoming students may not fully comprehend departmental requirements for demonstrating proficiency in research methodology, or even truly understand what "research methodology" means. This information is important to include not only in orientation programs, but also in promotional literature and during recruitment visits.

A student's publication record while a graduate student also plays an important role in charting her or his future career path. Respondents who indicated that they were employed as a faculty member at a college or university are significantly more likely to have published articles prior to graduating (Table 4). Though the variable fails to attain statistical significance in Table 3, this also makes sense. Students who choose to complete their degrees are unlikely to do so *because* of publications. Publications are more important for career success than for graduate program completion.

The relative status of a department also contributes to success in graduate school and beyond. Students at departments ranked in the top 20 are more likely to complete their doctorates, and they are significantly more likely to teach in Ph.-D.-granting departments. While we cannot parse out what aspects of a top 20 department contribute to this success, students in these departments may feel better about their job prospects as they see their former colleagues taking positions in research-oriented departments.

Perhaps the most surprising findings from our analysis are those factors that are *not* significant. First, when analyzing the total sample, gender did not achieve a level of statistical significance. Given the other controls in the model, success

Table 5
Logit Estimates for Factors Affecting Obtaining a Position at a Ph.D.-granting Institution

Variable	Hypothesized Direction	Total Sample	Men	Women
Constant		−7.879	−6.709	−11.229
		(2.655)	(3.357)	(5.035)
Gender (Female)	−	−0.305		
		(0.468)		
Marital Status (Married)	+	0.315	0.160	0.618
		(0.516)	(0.609)	(1.218)
Respect, approachability, and career support from faculty advisor	+	0.334***	0.293**	0.485**
		(0.115)	(0.138)	(0.250)
Career planning and placement services from department	+	0.194	0.335	−0.169
		(0.209)	(0.262)	(0.418)
Received graduate assistant funding	+	−0.025	−0.168	0.129
		(0.488)	(0.586)	(0.972)
Published while in graduate school	+	0.766	0.423	1.401
		(0.481)	(0.611)	(0.872)
Too much emphasis on research methodology	−	−0.277	−0.469	0.048
		(0.214)	(0.291)	(0.366)
Top 20 universities	+	0.876*	1.221**	0.155
		(0.464)	(0.600)	(0.835)
χ^2		33.68	23.23	13.42
Df		8	7	7
p value		0.000	0.002	0.063
N		144	88	56

Note: The survey question for the dependent variable is "*Are you currently employed (as a faculty member) at a Ph.D.-granting university/college?*" in which 1 = Yes and 0 = No; *Gender* is a binary variable where 1 = female and 0 = male; *Marital Status* is a binary variable where 1 = married/partnered and 0 = single; *Published while in graduate school* is a binary variable where 1 = yes and 0 = no; *Top 20 Universities* is a binary variable where 1 = Indiana University, Ohio State University, University of Chicago, University of Michigan, or University of Wisconsin-Madison, and 0 = other universities. For other independent variables, higher values correspond with respondents strongly agreeing with the statement. For more information on the construction of variables, see Appendix B. Standard errors are in parentheses. *$p < 0.10$; **$p < 0.05$; ***$p < 0.01$.

in Midwest doctoral programs and beyond is not different for men and women. However, when we move to the split sample and look at the results for the sample of men and the sample of women, we do find gendered effects of the independent variables; factors such as faculty advising work differently for men than for women. These results are found in Tables 3, 4, and 5 under the columns for Men and Women. The results for men mirror those for the total sample for all three outcome models. For women, the variables of interest do not reach statistical significance, except for the role of faculty advising in obtaining a position at a Ph.D.-granting institution. For women, success in obtaining such a position is a product of strong faculty advising and encouragement. The differences in the two models show that the problems and challenges facing female graduate students are not identical to those facing male graduate students. Combining the results of the disaggregated samples with the results of the total sample

reinforces the earlier conclusions about the importance of strong and supportive mentoring relationships. Effective faculty mentors enable students to successfully navigate the challenges that may befall them, regardless of their gender. Our models *control* for good mentoring, and with this control, gender itself is not a determinant of success. Mentors can assist graduate students, female and male, in overcoming their personal challenges.

Further, across the total sample and the split gender samples, the measure of funding fails to achieve statistical significance. This does not mean that funding is unimportant for students; rather, it likely demonstrates the uniformity of funding across the departments surveyed. Departments funded over 90% of respondents, with the vast majority being fully funded.

While our results so far have focused on the factors affecting completion of graduate school and success in the academic market, it is important to consider those not working in academia. What

is surprising is how little research focuses on this burgeoning cohort of Ph.D.-holders. Results from our panel study can offer some tentative findings about the characteristics of this group.

Fifty-one percent of respondents (46% of men and 58% of women) indicated that they were not faculty members. Research cited earlier reveals the difficulty of combining family life with academic careers, which might help explain why a larger portion of women is not in academia. This work suggests that across the academy "the demands of academic life are becoming excessive and are making it difficult for individuals to succeed at work while having time to be caring and responsible parents" (Jacobs and Winslow 2004). Among those who are not faculty members, education remains the most common career, with 32% of our sample employed in this sector (Table 6). Private business was just behind education at 30%, and 18% work for the government. Though a majority of both those who are faculty members and those who are not faculty members are married or partnered, we find that a larger portion of those who are married or partnered are faculty members and significantly more of those who are single are non-faculty (Table 7).

The 2003 survey also asked respondents who are *not* faculty members a series of questions about their level of job satisfaction. A strong relationship

Table 6
Where Non-Faculty Members Are Employed

	Percent
Educational Institution	31.7
Government	18.3
Private Business	30.0
Nonprofit Agency	10.0
Other	10.0
Total	100

Note: "Other" category includes church, ETS-testing service, heavy construction, labor union, law firm, and public library.

Table 7
Marital Status during Graduate School and Job Afterward

	Married/Partnered	Single	Total
Job Status			
Employed as a Faculty Member	54.2%	35.1%	49.3%
Not a Faculty Member	45.8%	64.9%	50.7%
Total	100.0% (107)	100.0% (37)	100.0% (144)

exists between their academic training and their job satisfaction. Overall, 53.4% are very satisfied with their current job; this percentage increases to 60.5% for those who feel their education prepared them for the future. Among those who feel that their education did not well prepare them, only 33.3% are very satisfied.

To better assess the satisfaction of non-faculty members, we conducted an ordinary least squares analysis with the level of satisfaction as the dependent variable, along with six independent variables: an indicator of employment in government; an indicator of employment in private business; gender; age; how well one's education prepared one for his or her current position; and attending graduate school in a department ranked in the top 20.[4] The results of this analysis, along with the construction of the variables, are found in Table 8. Again, we conducted this analysis for the total sample, as well as for men and women in a split sample. For the total sample, three independent variables are significant and increased the respondent's level of satisfaction: being employed by the government, being male, and the feeling of being well-prepared by one's education. After disaggregating by gender, women, who were found to be less satisfied than men, exhibit higher levels of satisfaction if employed by government

or a private business while for men alone these variables failed to reach statistical significance. This may reflect varying workloads in different settings; other research indicates that workload is a greater factor in job satisfaction for females than for males (Jacobs and Winslow 2004). This again shows that gender differences do exist, with different factors influencing satisfaction among men and women. At the same time, as a whole, our findings show that graduate education can prove valuable in non-academic settings. The importance of educational preparation demonstrates that doctoral degrees do matter and can be applied in a fulfilling way outside academia. Therefore, departments would do their students a favor by incorporating classes and experiences that prepare students for jobs in the non-academic realm.

More research is needed in two important areas. First, we know little about those students who do *not* become faculty members. Specifically, more research is needed on the types of jobs Ph.D.s take outside of academia and the factors that lead them to choose to pursue a non-academic career path. Important differences may exist between those students who actively choose not to enter academia and those who pursue non-academic options because of a lack of open positions. Second, we need to continue to investigate the differing experiences of men and women and among students of different backgrounds with renewed attention to family variables.

Our survey, unfortunately, did not have enough respondents of different races to allow us to investigate these dynamics; this, in and of itself, may indicate an area in which departments need to improve. Given APSA's recent efforts (see the list of APSA-sponsored minority programs at www.apsanet.org/section_177.cfm) to enhance diversity within the profession, it is important to see what sort of an impact these programs are having "on the ground" and whether they are adequately addressing students' mentoring needs.

By adding empirical rigor to anecdotal experiences, our results prove the dramatic impact successful mentoring relationships can have on success in graduate school and afterwards for men and women. The mentoring relationship is not simply limited to choosing courses; students are looking for advisors who respect them, support their work, encourage them to pursue appropriate career paths, and are easy to approach. In essence, graduate students are looking for advisors who can mentor them in all aspects of their professional life and provide them with an entry into

Table 8
OLS Estimates for Factors Affecting Job Satisfaction for Non-Academics

Variable	Total Sample	Men	Women
Constant	3.380	4.033	2.127
	(0.682)	(0.841)	(1.138)
Employed by government	0.819***	0.522	1.310**
	(0.300)	(0.356)	(0.534)
Employed by private business	0.395	0.054	1.021**
	(0.244)	(0.287)	(0.428)
Gender (Female)	−0.378*		
	(0.222)		
Age	−0.011	−0.222	0.002
	(0.016)	(0.019)	(0.029)
Graduate education preparedness	0.443*	0.225	0.728
	(0.260)	(0.331)	(0.431)
Top 20 universities	−0.229	−0.073	−0.476
	(0.216)	(0.258)	(0.376)
R^2	0.283	0.137	0.525
p value	0.008	0.463	0.032
N	57	36	21

Note: The survey question for the dependent variable is *"How satisfied are you with your current position?"* where 1 = Very Dissatisfied, 2=Somewhat Dissatisfied, 3=Somewhat Satisfied, and 4 = Very Satisfied; *Government* is a binary variable where 1 = Working for government and 0 = No; *Private Business* is a binary variable where 1 = Working for Private Business and 0 = No; *Gender* is a binary variable where 1 = Female and 0 = Male; The survey question for binary variable *Preparedness* is "Did your education prepare you for the work that you have experienced after graduation?", where 1 = Yes and 0 = No; *Top 20 Universities* is a binary variable where 1 = Indiana University, Ohio State University, University of Chicago, University of Michigan, or University of Wisconsin-Madison, and 0 = other universities. Standard errors are in parentheses. *p < 0.10; **p < 0.05; ***p < 0.01.

the profession, and this mentoring has substantial impact if a student completes the program. Positive mentoring relationships not only encourage students to stay in their graduate programs, but also help place those students in academic settings.

Supportive faculty mentoring relationships are crucially important at all stages in a student's academic life. Providing students with an orientation program helps them understand what they need to do to be successful, which in turn promotes retention rates. Once students have started the program, faculty mentors guide students through the trials and travails of both graduate school and working within the discipline. By offering good career planning and placement services, departments enable students to find the post-graduation careers that satisfy their needs and increase the odds that students will enter academia. Thus, mentoring that starts when students enter a graduate program and continues through a student's graduation makes for more successful students. Programs that foster the development of positive advisor/advisee relationships satisfy both the goals of students (including getting a degree and landing a job) and of departments (including retaining students and placing them highly).

Men and women do not face identical challenges in completing their graduate studies and in obtaining subsequent employment, yet our research demonstrates that strong mentoring relationships are vitally important for both. This information can assist graduate students as they select graduate programs, advisors, and dissertation topics. Students should aim to find a graduate program that not only nurtures their intellectual curiosities, but also provides a conducive environment for building lasting, productive relationships with faculty members. Mentoring relationships provide the support that both male and female students need to overcome their distinctive challenges of graduate school.

While students need to seek out these mentoring relationships and build strong ties with faculty members, the burden does not fall solely on their shoulders. Our findings provide a charge to faculty members and departments. Departments can vastly increase the chances of their students' successes by fostering advising systems that work with students from the beginning of first-year orientation through career services as students enter the job market. The importance of advising also reminds faculty members of

their obligation and role in training the next generation of political scientists—an obligation that extends beyond the classroom. Supportive faculty members encourage students to remain in graduate school and lead those same students into careers as faculty members. Strong advising relationships also provide the support and resources necessary to obtain rewarding employment in the non-academic sector. Departments should actively share successful mentoring strategies with each other to make these services available to as many graduate students as possible.

Overall, our findings indicate that departments can improve retention rates and produce satisfied and productive future colleagues by implementing comprehensive advising programs that lead students through their programs from the first day they enter graduate school to the day they receive their doctorate. Mentoring programs and career planning and placement services do require financial resources and time commitments, but the payoffs are significant for students, departments, and faculty members alike. The costs involved are far outweighed by the benefits accrued to both students and departments.

Notes

1. Standard procedures for such surveys were followed, including guarantees of anonymity and follow-up mailings to increase response rates.

2. Number of children, for example, was expected to influence completion rates, but this was highly correlated with marital status. Race was insignificant because it had minimal variance—the lion's share of respondents were White. Other measures showed more variation but were insignificant; for example, level of socialization with other graduate students and perceptions of the department's views on women.

3. Originally conference participation was expected to influence success in graduate school, but this proved to be insignificant as such participation is so common that we found little variation among respondents.

4. An OLS model was used rather than an order logit or probit model because the category for very satisfied was perfectly predicted for the disaggregated models for gender. The OLS model produced identical results and was more stable in this situation.

References

Andersen, Kristi. 2001. "Faculty Roles and Student Projects." *PS: Political Science and Politics* 34: 847–848.

APSA Committee on the Status of Women in the Profession. 2001. "The Status of Women in Political Science: Female Participation in the Professoriate and the Study of Women and Politics in the Discipline." *PS: Political Science and Politics* 34: 319–326.

Baird, Leonard L. 1993. "Using Research and Theoretical Models of Graduate Student Progress." *New Directions for Institutional Research* 80: 3–12.

Benesh, Sara C. 2001. "The Key to a Successful Prospectus: Consult an Advisor, Early and Often." *PS: Political Science & Politics* 34: 853–854.

Benkin, Ellen, JoAnne Beazley, and Patricia Jordan. 2000. "Doctoral Recipients Rate Their Dissertation Chairs: Analysis by Gender." *Graduate Focus: Issues in Graduate Education at UCLA* (February).

Bowen, William G., and Neil L. Rudenstine. 1992. *In Pursuit of the Ph.D.* Princeton: Princeton University Press.

Farrar-Myers, Victoria A. 2001. "The 'Rights' of Passage." *PS: Political Science and Politics* 34: 751–755.

Hesli, Vicki L., Evelyn C. Fink, and Diane M. Duffy. 2003a. "Mentoring in the Graduate Student Experience: Survey Results from the Midwest Region, Part I." *PS: Political Science and Politics* 36: 457–460.

———. 2003b. "The Role of Faculty in Creating a Positive Graduate Experience: Survey Results from the Midwest Region, Part II." *PS: Political Science and Politics* 36: 801–804.

Hodgson, Carol S., and Jane M. Simoni. 1995. "Graduate Student Academic and Psychological Functioning." *Journal of College Student Development* 36: 244–53.

Hochschild, Arlie. 1989. *The Second Shift*. New York: Viking.

Jacobs, Jerry A. 1999. "Sex Segregation of Occupations: Prospects for the 21st Century." In *Handbook of Gender in Organizations*, ed. Gary Powell. Thousand Oaks, CA: Sage, 125–41.

Jacobs, Jerry A., and Kathleen Gerson. 2004. *The Time Divide: Work, Family and Gender Inequality*. Boston: Harvard University Press.

Jacobs, Jerry A., and Sarah E. Winslow. 2004. "The Academic Life Course, Time Pressures and Gender Inequality." *Community Work and Family* 7 (2): 143–61.

Keith, Bruce, and Helen Moore. 1995. "Training Sociologists: An Assessment of Professional Socialization and the Emergence of Career Aspirations." *Teaching Sociology* 23: 199–214.

Mason, Mary Ann, and Marc Goulden. 2004. "Marriage and Baby Blues: Redefining Gender Equity in the Academy." *Annals of the American Academy of Political and Social Science* 596: 84–103.

McCormick, James M., and Tom W. Rice. 2001. "Graduate Training and Research Productivity in the 1990s: A Look at Who Publishes." *PS: Political Science and Politics* 34: 675–680.

Moore, Helen A., and Bruce Keith. 1992. "Human Capital, Social Integration, and Tournaments." *American Sociologist* 23: 52–72.

National Science Foundation. 1998. "Summary of Workshop on Graduate Student Attrition." NSF 99-314. Arlington, VA: NSF Division of Science Resource Statistics.

———. 2000. "Doctoral Political Science Degrees Awarded, by Sex: 1966–1997." NSF 00-310: 65. Arlington, VA: NSF Division of Science Resource Statistics, Science and Engineering Division.

———. 2002. "Science and Engineering Degrees." Arlington, VA: NSF Division of Science Resources Statistics. Available at www.nsf.gov/statistics/nsf02327/pdf/nsf02327.pdf.

Nerad, Maresi, and Joseph Cerny. 1993. "From Facts to Action: Expanding the Graduate Student Retention and Degree Attainment." *New Directions for Institutional Research* 80: 27–39.

Peters, Robert L. 1997. *Getting What You Came For: The Smart Student's Guide to Earning a Master's or a Ph.D.* New York: Farrar, Straus and Giroux.

Tinto, Vincent. 1993. "Toward a Theory of Doctoral Persistence." In *Leaving College: Rethinking the Causes and Cures of Student Attrition*, 2nd Ed. Chicago: University of Chicago Press, 230–243.

Wasby, Stephen L. 2001. "Introduction: Advisors and the Dissertation Proposal." *PS: Political Science and Politics* 34: 841–842.

APPENDIX A

Survey Information

Data for this study were collected from graduate students in political science in the Midwest region. Lists of currently active graduate students were solicited from departments of political science at 28 institutions in the Midwest region: Case Western Reserve University, Indiana University, Kent State University, Loyola University at Chicago, Miami University, Michigan State University, Northern Illinois University, Northwestern University, Ohio State University, Purdue University, Southern Illinois University, University of Chicago, University of Cincinnati, University of Illinois at Chicago, University of Illinois at Urbana-Champaign, University of Iowa, University of Kansas, University of Kentucky, University of Michigan, University of Minnesota, University of Missouri at Columbia, University of Missouri at St. Louis, University of Nebraska at Lincoln, University of Notre Dame, University of Wisconsin-Madison, University of Wisconsin-Milwaukee, Washington University, and Wayne State University

An initial letter was sent to department executive officers in political science departments at 28 institutions in the Midwest region requesting the names and addresses of graduate students enrolled as of 1 September, 1996. Details of the study were provided along with assurances that all information would be kept confidential. Approximately five weeks after the initial letter, a second letter was sent to departmental executive officers stressing in stronger terms the importance of the study and the need for their individual assistance. Of the list above, 19 departments eventually provided lists of their students. (Numbers in parentheses are the number of students reported by the respective department.)

Indiana University	(143)
Loyola University of Chicago	(77)
Miami University	(27)
Michigan State University	(35)
Northern Illinois University	(105)
Northwestern University	(65)
Ohio State University	(142)
Purdue University	(60)
University of Chicago	(210)
University of Iowa	(42)
University of Kentucky	(53)
University of Michigan	(291)
University of Missouri at Columbia	(47)
University of Missouri at St. Louis	(65)
University of Nebraska at Lincoln	(39)
University of Notre Dame	(81)
University of Wisconsin-Madison	(128)
University of Wisconsin-Milwaukee	(37)
Washington University	(40)

The list of 1,687 subjects was reduced by half. A case from the initial two cases in the sample was selected at random along with alternating cases thereafter. Questionnaires were sent to the 844 randomly selected subjects. Of these, 382 responses were received after an initial mailing and 128 after a second mailing, bringing the total number of valid returned questionnaires to 510. Thus, the response rate is 60.5%.

Construction of Variables Used in the Analysis

Dependent Variables:

(Table 3) Did you leave graduate school at any time without completing your degree?

    0 = No

    1 = Yes

(Table 4) Are you currently a faculty member at a university or college?

    0 = No

    1 = Yes

(Table 5) Type of institution you are employed by:

    0 = Non-Ph.D.-granting institution

    1 = Ph.D.-granting institution

(Table 8) How satisfied are you with your current position?

    5. Very satisfied

    4. Somewhat satisfied

    3. Neither satisfied nor dissatisfied

    2. Somewhat dissatisfied

    1. Very dissatisfied

Independent Variables:

Marital Status

Has your spouse/significant other been supportive of your graduate school career?

    0 = Married/partnered   1 = Single

Gender

What is your gender?   0 = Female   1 = Male

Respect, approachability, and career support from advisor

  My faculty advisor treated me with respect.

  My faculty advisor seemed more interested in picking apart my work than in helping me succeed. (REVERSED)

  My faculty advisor encouraged me to pursue my own career path and goals.

  My faculty advisor was easy to approach and talk to.

Each question used the following five-point scale:

    5 = Strongly agree 4 = Agree 3 = Neutral 2 = Disagree 1 = Strongly disagree

The answers to all four questions were then added together, providing an overall scale from 4 to 20.

Career planning and placement services from department

How would you rate the career planning and placement assistance you received from your graduate program?

    5 = It helped me get the position I wanted.

    4 = It was helpful, but I did not get a position I wanted through it.

    3 = I used it, but it was not personally helpful to me.

    2 = It was not at all helpful to me.

    1 = No assistance available.

Received graduate assistantship funding

Were you funded as a graduate/teaching assistant or with a fellowship at any time during your graduate program?

    4 = Yes 3 = Yes, but only outside of department 2 = Partial assistance or fellowship only 1 = No

Too much emphasis on research methodology

I feel the courses emphasized research methodology too much.

    5 = Strongly agree 4 = Agree 3 = Neutral 2 = Disagree 1 = Strongly disagree

Top 20 universities

Taken from rankings in McCormick and Rice (2001)

    0 = Graduate department not ranked among top 20

    1 = Graduate department ranked among top 20

Employed by government

In what type of institution are you employed? (Asked only of those not employed as a faculty member at a college or university)

    0 = Not employed by government

    1 = Employed by government

Employed by private business

In what type of institution are you employed? (Asked only of those not employed as a faculty member at a college or university)

    0 = Not employed by private business

    1 = Employed by private business

Graduate education prepared you for post-graduation position (Preparedness)

Did your education prepare you for the work you have experienced after graduation? (Asked only of those not employed as a faculty member at a college or university)

    0 = No 1 = Yes