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# Careers of Geography PhDs

## Findings from *Social Science PhDs—Five+ Years Out*

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**February 29, 2008**

# EXECUTIVE SUMMARY

*Doctoral education in the United States has been criticized for producing too many PhDs who are not well prepared for the work they actually end up doing (Nerad 2004). However, a recent survey including a national sample of geography PhDs found that 6 to 10 years after degree completion more than 90% had successfully secured rewarding, stable work in diverse employment sectors. Respondents reflected upon their doctoral education, giving high marks to their programs for “academic rigor,” “overall program quality,” and “financial support.” They also indicated areas that could use improvement, including: career preparation for academic and non-academic careers, help with publishing from the dissertation advisor, training in writing and publishing received during PhD studies, and training for teaching. To ensure greater success for their students, surveyed geographers advised programs to guide students to publish, network, and present their work at conferences as much as possible during their PhD education. In addition, many respondents urged programs to provide better professional development for careers outside the ivory tower in business, government, and non-profit sectors.*

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*Suggested citation:* Babbit, Victoria, Elizabeth Rudd, Emory Morrison, Joseph Picciano, and Maresi Nerad. 2008. Careers of Geography PhDs: Findings from *Social Science PhDs—Five+ Years Out*. CIRGE Report 2008-02. CIRGE: Seattle, WA. [www.cirge.washington.edu](http://www.cirge.washington.edu)

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# INTRODUCTION

*Social Science PhDs–Five+ Years Out* is a survey which collected data on career paths and graduate school experiences from a national sample of PhDs who earned their degrees in U.S. institutions between July 1, 1995 and June 30, 1999 in anthropology, communication, geography, history, political science, and sociology. The survey was conducted by the Center for Innovation and Research in Graduate Education (CIRGE) at the University of Washington in Seattle and funded by the Ford Foundation.

The data collected for *Social Sciences PhDs Five+ Years Out* should be informative and useful to people responsible for PhD programs, including graduate deans, department chairs, graduate education researchers, and policymakers. Findings might also interest current and prospective graduate students, as they contemplate whether or not to pursue a PhD, how to choose a graduate program, and how to evaluate their own educational experiences and achievements. This report of SS5 findings is about how geography PhDs fare in the job market, how their performance in graduate school is related to subsequent careers, and how well their education prepares them for their work.

## Survey Methods and Sample Demographics

*Social Science PhDs–Five+ Years Out* (“SS5”) surveyed a national sample of PhDs in anthropology, communication, geography, history, political science, and sociology who earned their PhD between July 1995 and June 1999. The survey sample was drawn from all PhDs in the 6 selected disciplines from 65 doctoral-granting programs; 3,025 respondents yielded a response rate of 45%. Table 1 displays disciplinary and demographic characteristics of respondents.

Respondents to SS5 answered several pages of questions about career path and

employment history, relationship events and parenting, graduate school achievements, the quality of their PhD program, mentoring by their dissertation advisor, and the usefulness of their doctoral education. In open-ended questions they were asked to write about trade-offs between work and family life, experiences with mentoring, advice they would offer beginning graduate students, advice they would give to graduate programs in their field, experiences with diversity, and experiences related to gender, racial/ethnic, class or other personal identities. SS5 created a unique dataset which allows researchers to examine relationships between doctoral education experience, family situations, and career paths.

**Table 1.**

**SS5 Respondent Demographics by Field**

	% Women (n)	Mean age at PhD in years (n)	% White (n)
Anthropology	56.9 (432)	37.4 (367)	88.1 (360)
Communication	54.2 (343)	36.6 (276)	86.1 (281)
Geography	32.9 (164)	36.7 (143)	86.1 (144)
History	43.6 (839)	35.7 (722)	89.7 (712)
Political Science	36.4 (701)	33.3 (592)	86.9 (587)
Sociology	61.2 (546)	35.4 (462)	83.7 (459)
All fields	47.6 (3,025)	35.5 (2,562)	87.1 (2,543)

Source: CIRGE, *Social Science PhDs–Five+ Years Out*

Data presented in this report are actual data; we have not imputed missing data. Quotations from PhDs used in this report are from answers to open-ended questions and they illustrate frequently expressed sentiments identified by coding narrative responses to these items.

### Sample Limitations

SS5 used a retrospective design to get assessments of doctoral education informed by several years of working. The advantage of respondents' longer-term view of the value of their graduate training comes with the danger of forgetting and revising. However, research shows that subjects recall information about relationship and family events (including spouse characteristics such as spouse's educational level) and about occupational and employment histories with reasonable reliability (Dex 1995, Klein and Fischer-Kerli 2000, Solga 2001). A non-response analysis comparing the survey sample to the population of all PhDs from the 65 participating institutions in the sampled cohorts, revealed small but statistically significant differences between respondents and non-respondents: the sample slightly over-represents women, whites, singles, and those in academic careers. The over-representation of academic sector employees should inform interpretation of the findings. (See Picciano et al. 2007 for details on sampling methods and sample limitations.)

### The Geography Sample

The geography sample was drawn from 32 PhD-granting departments. Most of these departments were ranked in the National Research Council's 1995 study, *Research-Doctorate Programs in the United States: Continuity and Change* (Goldberger, Maher, and Flattau 1995). Fifty-five respondents graduated from programs ranked in the top quartile, 62 earned PhDs in second quartile programs, 35 came from 3<sup>rd</sup> or 4<sup>th</sup> quartile departments, and there were 12 respondents from unranked programs. (Programs are listed by quartile in the Appendix.) With only 33% women, geography has the highest percent of men of the included disciplines. The geographers' median respondent age at PhD award was 35.8 years. The median time

from PhD award to survey completion was 7.9 years, with a range of 5.9 to 10.2 years.

### Almost a Century of Geography PhDs

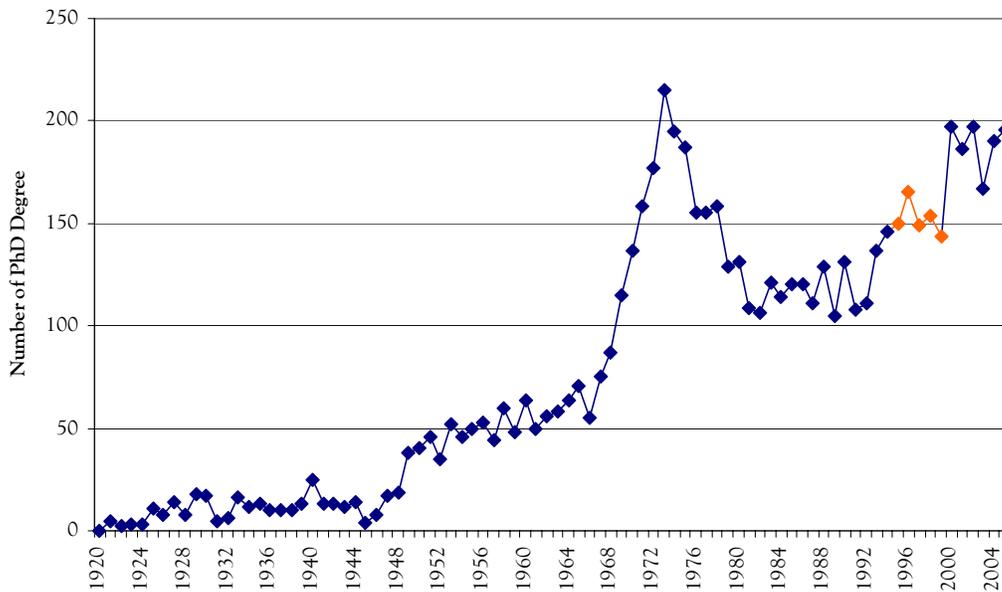
No PhDs in geography were recorded in 1920, but by 1929, 72 PhDs in the field had been awarded. During the 1930s, 112 new doctors of geography graduated, and in the 1940s, 163 doctorates in the field were earned at U.S. institutions. The post-war period of the 1950s saw a remarkable increase in PhD production, with 474 PhDs awarded between 1950 and 1959, 695 during the 1960s, and 1,666 doctoral degrees earned in the 1970s. As shown in Figure 1, PhD production remained relatively steady during the 1980s and early 1990s. The cohorts graduating between July 1, 1995 through June 30, 1999 were in a period of slight decline, when U.S. geography departments were awarding, on average, 150 PhDs a year. There was a significant increase in PhD production in 2000, with 197 PhDs awarded that year.

Annual production remained at about this level during the years 2000-2005 (NSF 2006). Figure 1 depicts the growth and decline in PhD production; the SS5 cohorts are highlighted.

### Motivations for PhD Study and Career Goals

Respondents were motivated to study geography because of their intense interest in the field and because of the challenge "for its own sake." In comparison to the other disciplines surveyed, "the challenge" factored more as a crucial motivation for pursuing a doctorate in geography. Credential building played a comparatively small role, being indicated by only 41.5%, when deciding whether to pursue the PhD. Whereas credentials featured highly in the other social science disciplines with, on average, 54.6% stating that it was one of the main reasons for pursuing a PhD.

Figure 1. Geography PhDs Awarded by U.S. Institutions 1920 - 2005



Source: National Science Foundation (2006) *U.S. Doctorates in the 20th Century*

**After two decades of decline in geography PhD production, since the mid-1990s, the trend again has been upwards.**

Sixty percent of geographers entered graduate school with the career goal of becoming a professor, which was the low end of a range starting with 81% of historians and an average of 72% among all fields. Consistent with the importance of intense interest in the field motivating graduate study, compared to other fields a higher proportion of geographers entered graduate school with no formulated career goal (18% vs. 10% among all fields).

**Table 2. Geography Top Reasons for Starting PhD Studies (n = 164)**

	Respondents Endorsing
“Crucial Considerations”	
Intense interest in the field	78.7%
For the challenge; it was a goal for its own sake	45.7%
Necessary credential for desired position	41.5%
Encouragement from faculty in my undergraduate program	23.8%

Source: CIRGE, *Social Science PhDs—Five+ Years Out*

## Gender and Family Profile of SS5 Geographers

Among geographers, compared to men, women were less likely to be married or partnered when they earned their PhD; however among married or partnered women it was more common to have a spouse/partner with a doctoral degree. Compared to men, women were also less likely to have children when their PhD was awarded, but by the time they were surveyed six to ten years post-PhD, men and women were equally likely to be parents (Table 3).

Although the SS5 geography sample is too small to examine relationships among family and career variables, it is likely that geographers are similar to other social scientists in these respects. Compared to men, women doctorate holders in social science careers were more likely to leave faculty positions, less likely to be coupled, more likely to postpone or forego having the children they wanted, less likely to be geographically mobile, and generally experienced more work-family conflict (Nerad et al 2007).

	Women	Men
Married or partnered at PhD Award	61%	79%
Spouse/partner has a PhD or other doctoral degree (among those married/partnered when surveyed)	32%	11%
At PhD award, reported being a parent	29%	41%
When surveyed, reported being a parent	64%	64%
Source: CIRGE, <i>Social Science PhDs—Five+ Years Out</i>		

**Even more than respondents in other fields, geographers were motivated to get a PhD by their intense interest in the field and the intrinsic challenge of earning a PhD.**

# CAREER OUTCOMES

When surveyed, most geography PhDs were working full time in jobs that used their PhD education. 85% were employed full time, 2% were self-employed, 7% worked multiple jobs, and 5% worked part-time. Only two people reported being unemployed at the time of the survey. In contrast with other disciplines, geographers show a higher incidence of working multiple jobs.

Within six months of graduation, 35% of geography PhDs secured tenure-track jobs, while 24% entered business, government or non-profit sectors. At the time of the survey, 6 to 10 years post-PhD award, 32% of geography respondents were in tenured positions, which is the average within the social science disciplines surveyed. However, among geographers in faculty positions the proportion already tenured was greater than in other fields.

Twenty-four percent of geographers reported working outside of academia, with most of these working in government. Job titles reported by geographers in business, government, and non-profit (BGN) sector employment included managers, project managers, GIS mappers, conservation scientists, and researchers.

Subfields seem to play a role in career paths, with those who specialize in physical geography and related subfields being more likely to hold tenured or tenure-track faculty positions but also more likely to work outside academia in business, government, and non-profit sectors. Compared to other subfields, among cultural geographers there is a higher proportion of respondents in non-tenure-track faculty and non-faculty academic positions (Table 5).

**Table 4. Geography Distribution of Respondents by First Post-PhD Job and Job at Survey**

	First Job (n= 127)	Job at Survey (n = 143)
Tenured faculty	8.1	32.2
Tenure-track faculty	34.8	21.1
Non-tenure-track faculty	14.8	18.0
Postdoc	10.4	1.3
Academic other	7.4	9.9
Non-profit sector	2.2	3.3
Government sector	16.3	15.8
Industry/business sector	5.9	4.6

Source: CIRGE. *Social Science PhDs–Five+ Years Out*

**Table 5. Geography Percent Respondents in Jobs at Survey by Subfield (n = 133)**

	Ladder Faculty	NTT & A O*	BGN
Cultural geography and related subfields	48	31	21
Physical geography and related subfields	54	15	31
Total	50 (n=67)	25 (n=33)	25 (n=33)

NTT = non-tenure-track AO = academic other  
 BGN = business, government, or non-profit  
 Source: CIRGE. *Social Science PhDs–Five+ Years Out*

**Geography PhDs find full-time jobs that use the skills and knowledge they gained during graduate study, with about ¾ working in the academic sector and most of the rest in the government sector. Compared to those in BGN sectors, geographers in academia were more likely to report “often” using specific knowledge gained through PhD education.**

**Table 6. Geography Percent Using Knowledge “Often” of PhD Topic, Subfield, Geography, and General Social Sciences by Employment Sector at Survey**

	PhD Topic	Subfield	Geography	Social Sciences	
Academic Sector	33	70	86	63	n=71
BGN Sectors	23	50	62	46	n=24
Total	30	65	80	60	n=95

Source: CIRGE, *Social Science PhDs—Five+ Years Out*

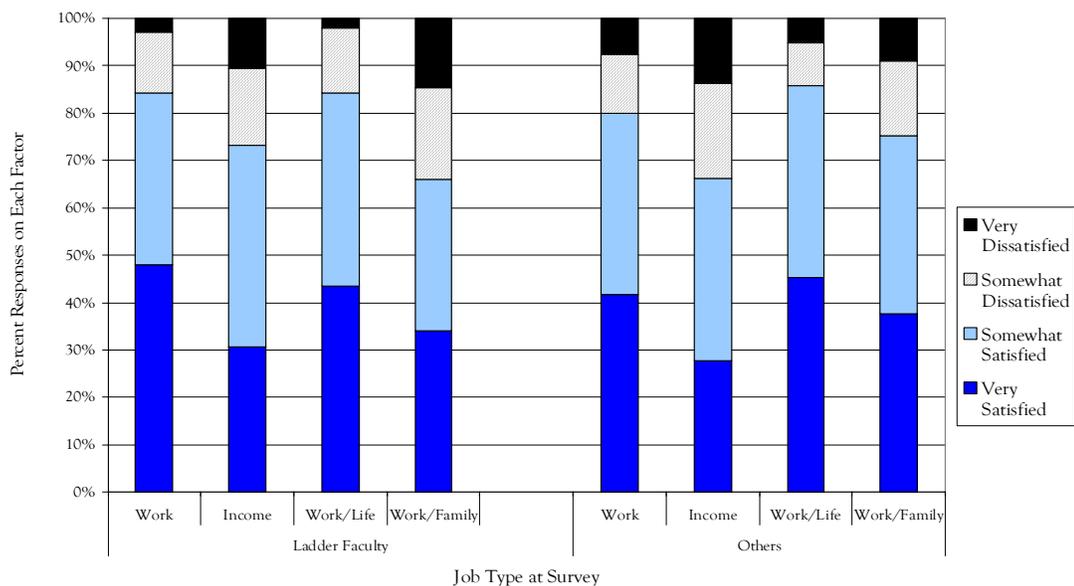
Whether they are employed in business, government, non-profit, or academic sectors, geography PhDs are using on the job the skills and knowledge they learned in their PhD program. However, academic sector respondents were much more likely to report using knowledge of their PhD topic, their subfield, the discipline of geography, and even general knowledge of the social sciences “often” in the jobs they held when surveyed.

### Career Satisfaction: The Work Itself, Income, Work/Life, and Work/Family

An inventory of 18 items measured career satisfaction. For each item, respondents indicated whether they were

“very satisfied,” “somewhat satisfied,” “somewhat dissatisfied,” or “very dissatisfied.” Respondents could also choose “not applicable.” Using factor analysis, the 18 items produced 4 distinct indexes: satisfaction with the work itself, satisfaction with income and resources, satisfaction with work/life integration and satisfaction with work/family balance. Work/life integration reflects satisfaction with flexibility, tolerance for all kinds of people, and ability to enjoy both work and personal life. Work/family balance is a factor consisting of location, proximity to extended family, and job opportunities for spouse or partner (this dimension reflects satisfaction only of partnered and married respondents.) (See appendix for details.)

Figure 2. Four Dimensions of Job Satisfaction by Job Type at Survey



**Table 7. SS5  
Median Annual Income in U.S. Dollars by Discipline and Job Sector When Surveyed\***

	Ladder faculty	NTT faculty	Acad. other	BGN	Total
Anthropology	55,000	48,800	51,500	55,000	55,000
Communication	60,000	60,000	65,000	94,000	62,000
Geography	59,000	47,600	45,500	80,000	60,000
History	55,000	40,500	56,000	70,000	55,000
Political Science	62,000	58,000	73,700	90,000	65,000
Sociology	62,000	58,600	65,000	78,000	64,000

Source: CIRGE, *Social Science PhDs–Five+ Years Out*

**Geographers in all job types expressed high levels of job satisfaction, with a pattern of greater satisfaction with the work itself and somewhat less satisfaction with income and resources.**

The geographers rating their satisfaction with their income reported a median annual income when surveyed of \$60,000 (Table 7). This was about average for social scientists. Academic geographers earned less than geographers working in business, government, and non-profit sectors.

### Graduate School Performance and Career Paths

Time-to-degree and publications during graduate school are common measures of the quality of PhD recipients, with shorter times and more publications generally viewed as better. The usual time-to-degree in a program is also

considered a measure of the effectiveness of PhD programs. To calculate time-to-degree, SS5 asked people to state when they started the program in which they earned their PhD. Geographers have a relatively short time-to-degree within the social sciences.

Time-to-degree is associated with career path among geographers. Those in ladder faculty and BGN sector positions had the shortest average time-to-degree. Those in non-tenure-track faculty positions at the time of the survey had a longer median time-to-degree. The differences in median time-to-degree between non-tenure-track faculty and those in other academic positions and between ladder faculty and BGN employees are not statistically significant.

**Table 8. SS5  
Time-to-degree (Years) by Field**

	Median	Mean	N
Anthropology	7.7	8.5	431
Communication	5.2	5.5	343
Geography	5.7	6.3	164
History	7.2	7.6	837
Political Science	6.7	7	699
Sociology	6.7	7.3	543
Total	6.7	7.2	3017

Source: CIRGE, *Social Science PhDs–Five+ Years Out*

**Table 9. Geography  
Time-to-degree (Years) by Last Job Type**

	Median	Mean	N
Ladder faculty	5.7	6.1	81
NTT faculty	7.0	8.2	20
Academic other	6.3	6.3	15
BGN	5.3	5.7	35
Total	5.7	6.3	151

Source: CIRGE, *Social Science PhDs–Five+ Years Out*

## A Geographer in Project Management and Administration

Balancing career goals and family responsibilities has shaped Caroline Callahan's\* post-PhD career trajectory. Graduating in 1996 from a tier-one department at the age of 28, she pursued a non-academic career. Her first job was as a project manager in the business sector. Since that time, she has held four managerial or administrative positions. She explained, "I have given up one job to move with my husband's job and have worked part-time in order to be close to home and stay at home some of the time with my children." When surveyed, she worked as an administrator in a public educational institution with a salary of \$47,000 a year.

Caroline reported a very positive experience in her PhD program. Although the PhD educational process was strenuous—"Make sure you love your subject or you will never get through," she noted in her advice to current students—she would do it all over again. During her PhD education she published one peer-reviewed article and presented twice at conferences. The mentoring she received was integral to her graduate experience success: "I found both other graduate students and faculty to be very supportive and encouraging. I found examples that I could follow, students who challenged my thinking and faculty who pushed me to be the best I could be." She encouraged students to "get as much experience in the classroom as possible, take advantage of opportunities to present their work at conferences, even if they are small, regional ones."

Caroline's PhD training prepared her well for the jobs she has held. Many of the skills that her program excelled in teaching, such as data analysis, critical thinking, working collaboratively and presenting, are very important in her work. Echoing a common theme among geographers, she felt that her PhD program could improve training in publishing and report writing and in managing people and budgets. She encouraged programs to create more links between the university and the business sector to ensure that the work being done within the "ivory tower" will have an impact on the world outside.

(\*This is a pseudonym.)

**Compared to those who held positions as non-tenure-track faculty and other (non-faculty) academic jobs when surveyed, ladder faculty and respondents in business, government, and non-profit sectors spent less time in graduate school.**

## An Economic Geographer in Government

While initially interested in an academic position, Kristin Walberg\* ultimately chose to pursue a career in government. She graduated in less than 5 years at the age of 28, publishing 2 articles and presenting 8 times at professional conferences during her PhD program. After graduating, Kristin continued to write, publishing 8 articles in professional journals and presenting her work at 8 different conferences. She also attained her goal of balancing academic and non-academic interests. Kristin's career has been constrained by her citizenship. She noted: "It's a nightmare to deal with visa and green card issues all the time, it is time-consuming, expensive, and physically constraining—something American nationals have a very hard time understanding."

She credited her PhD program with providing excellent training in data analysis, critical thinking, research design, team work and interdisciplinarity—all very important to her current position. However, her program did not provide adequate training in managing people and budgets. She advises graduate programs to teach communication skills, leadership and some basic managerial skills and to prepare students for multi- and interdisciplinary work, including team work, and to model a good work ethic and self-care while trying to be successful in a professional sense.

She encouraged PhD students to "learn to think critically; learn to write and speak good English, and never forget the language necessary to explain your work to your grandmother; learn to communicate effectively to the public and to non-scientific professionals." In addition to the development of communication skills, she emphasized the value of forging good mentoring relationships for the different aspects of academic, personal, and professional life.

(\*All names used in this report are pseudonyms.)

## Publishing in Graduate School

One of the most common pieces of advice offered in the open-ended section of the survey concerned publishing before PhD completion. Typical comments included “encourage students to publish,” or “publish!!! As early and as often as you can!” In comparison to most of the other disciplines, geographers published more during graduate school.

(Sociologists were equally productive; however, as shown in Table 5, they had a longer average time-to-degree than geographers.)

Almost 2/3 of geography respondents had at least one peer-reviewed publication at PhD completion, compared with only half of all respondents.

Like time-to-degree, publication productivity in graduate school appears to be associated with career paths. Among geographers, ladder faculty were more likely to have at least one peer-reviewed publication at PhD than others. However, the differences between the groups are not statistically significant, likely due to the small sample size.

**Table 10. SS5**  
**Percent Respondents with 0 to 3 Peer-Reviewed Publications at PhD by Field\***

# of Pubs	Anth (n = 300)	Comm (n = 236)	Geog (n = 126)	Hist (n = 631)	PS (n = 512)	Soc (n = 401)	Total (n=2206)
0	48	49	35	61	54	34	50
1	24	23	28	25	25	29	26
2	15	14	17	9	13	20	14
3+	13	14	21	5	7	17	11

\*Respondent is author or co-author on article published or in press  
 Source: CIRGE, *Social Science PhDs–Five+ Years Out*

**Table 11. Geography**  
**Percent Respondents with Peer-Reviewed Publications at PhD by Job at Survey\***

	Ladder faculty	NTT faculty	Acad. other	BGN	Total
At least one publication	71%	57%	50%	58%	64%
N	66	14	12	31	123

\*Respondent is author or co-author of paper published or in press  
 Source: CIRGE, *Social Science PhDs–Five+ Years Out*

# PROGRAM ASSESSMENT

Asking PhD graduates to look back on their PhD education from the perspective of having worked for several years is part of the shift toward “student-focused” evaluations for the assessment of program quality and outcomes. Gathering the perspectives of students who are still enrolled provides important information to programs and about graduate education in general (Golde & Dore 2001; Nettles & Millet 2006), but it cannot answer questions about the usefulness of PhD education for subsequent work experiences and careers. *Social Science PhDs—Five+ Years Out* collected data on respondents’ accomplishments during graduate school including time-to-degree and publication productivity, and also asked respondents to evaluate their PhD programs on specific items such as support in preparing for the qualifying exam, and the quality of advising and mentoring they received from their dissertation chair. Respondents also rated the importance of particular skills in their current work, and the quality of training received during their PhD education in those skills.

The survey uses both open-ended questions and closed-ended items to provide multiple kinds of information on the issues surrounding program assessment. For example, in one section the survey asks the respondent to rate various aspects of the program such as overall program quality, mentoring, and academic rigor. However, respondents were also offered opportunities to provide a more dynamic account of their mentoring experiences, work/life balance, or suggestions for program improvement via open-ended questions.

## Respondents’ Ratings of Program Dimensions

Items evaluating various dimensions of PhD programs asked respondents to indicate whether they viewed their graduate programs as “excellent,” “adequate,” or “poor” along a variety of dimensions ranging from “clear program requirements” to “overall program quality.”

These items were designed to provide program-level feedback as well as an aggregate picture of the strengths and weaknesses of PhD education in the United States. This report presents an aggregate picture of findings about geography doctoral programs. Geographers lauded their PhD departments for academic rigor, financial support, and socializing students, and criticized them for lack of support in career preparation.

Two-thirds of geographers rated their programs excellent in terms of academic rigor, making academic rigor the most highly rated program element in geography. About half rated “overall program quality,” “financial support,” and “clear program requirements” excellent. Geographers’ propensity to view the academic rigor of their PhD program and the overall program quality as excellent was equal to the average for all fields, but they were more likely to give high ratings to financial support and less likely to find clarity of program requirements excellent.

About 40% of geographers rated as excellent: feedback on student progress, socializing students into an academic community, preparation for the qualifying exam, and support and guidance during dissertation writing. These are all indicators of a program’s support for student learning. Geographers were more likely than respondents in other fields to rate these items excellent, with the greatest advantage on the very important dimension of socializing students into an academic community. This likely reflects at least partly the high level of student involvement and presence in national meetings of the American Association of Geographers.

Like respondents in other fields, geographers noted the general lack of ethnic/racial diversity in social science PhD programs, with 30% of them rating as excellent the job their program did “having a diverse student population,” 51% rating this adequate, and 20% rating it poor.

Elements least likely to be rated as excellent by geographers were academic career preparation and non-academic career preparation. Notably

only 13% (22) of geographers indicated that “non-academic career preparation” was “not applicable,” compared with an average of 18% among respondents from other fields. These ratings point to high levels of dissatisfaction among geographers with the support their programs offered them in job searches and other kinds of career preparation, something that many commented on in the open-ended items. For instance, one respondent advised programs as follows:

*Consider adding a course that would prepare students for their first academic (assistant professor) position in terms of teaching, research (writing grants and publishing), service (university committees), and the tenure and promotion process.*

Lack of support for non-academic careers was one of the most common areas of commentary in the open-ended section of the survey. One geographer suggested it would help graduates get good jobs if there were better ties between university and non-university geographers:

*Established academics need to work on building and maintaining networks with non-academics. That would be a good way for professors to understand what work, good work, is available for their students other than academic teaching or research... Pragmatically, jobs come from such networks for the student, and potentially research funding from the private or public sector for the academic.*

**Table 12. Geographers’ Assessment of Program Elements**

	Excellent %	Adequate %	Poor %	N
<i>Support for Learning</i>				
Clear program requirements	49	46	6	140
Feedback on student progress	39	52	9	140
Socializing students into an academic community	45	41	14	138
Preparation for qualifying exam	42	48	10	137
Support and guidance during dissertation writing	44	47	9	141
	Excellent %	Adequate %	Poor %	N
<i>Overall Program Quality</i>				
Financial support	46	41	14	140
Having a diverse student population	30	51	20	140
Academic rigor	66	31	2	140
Overall program quality	52	44	4	140
	Excellent %	Adequate %	Poor %	N
<i>Career Preparation</i>				
Academic career preparation	35	46	19	138
Academic career preparation	35	46	19	138
Non-academic career preparation	9	40	51	119

Source: CIRGE, *Social Science PhDs—Five+ Years Out*

**Looking back, geography PhDs generally rated their PhD programs “excellent” in key dimensions of academic rigor, financial support during studies, and socializing students into the academic community. On the other hand, many strongly recommended that programs offer more support for career preparation.**

## Quality of Advice and Support from the Dissertation Chair

Turning from assessment of the PhD program, to respondents' personal experiences with their own dissertation advisor, geographers expressed satisfaction with the quality of guidance they received from their dissertation chair. Quality of advice in developing a dissertation topic as well as quality of guidance to complete the PhD were considered very satisfying by 61% and 62% of respondents, respectively. Most respondents were also at least somewhat satisfied with the advisor's support in the job search, support of career decisions, and overall mentoring. Only one area stands out for relatively low levels of satisfaction: help with publishing. Only 27% reported being "very satisfied," 26% reported being "somewhat dissatisfied" and 14% reported being "very dis-

satisfied" with support and guidance received for publishing.

Comments on mentoring in the open-ended responses were overwhelmingly positive and fairly broad. For instance, one respondent wrote, "The relationship was more that of colleagues than advisor-advisee. My committee was easy to work with, available, and supportive." Another reported, "[mentoring] was great. My advisor always gave me plenty of rope to hang myself with, and then helped untie me." Negative comments reflected some students' experiences of programs that seemed to leave students to fend for themselves. One geographer commented, "Mentoring was generally the weakest part of the doctoral program. Students were basically left to their own initiative." Another noted that in her program, "Those who could swim were rewarded tremendously with resources and visibility and the weak sank."

**Table 13. Geography**  
**Percent Respondents by Level of Satisfaction with Support and Guidance of Dissertation Chair**

<i>Type of Mentoring</i>	Very Satisfied	Somewhat Satisfied	Somewhat Dissatisfied	Very Dissatisfied	N
Advice developing topic	61	28	7	3	141
Guidance to complete PhD	62	26	6	5	141
Help with publishing	27	33	26	14	138
Support in job search	45	34	13	8	132
Support of career decisions	50	32	10	8	136
Overall quality of mentoring	52	30	13	5	140

Source: CIRGE, *Social Science PhDs—Five+ Years Out*

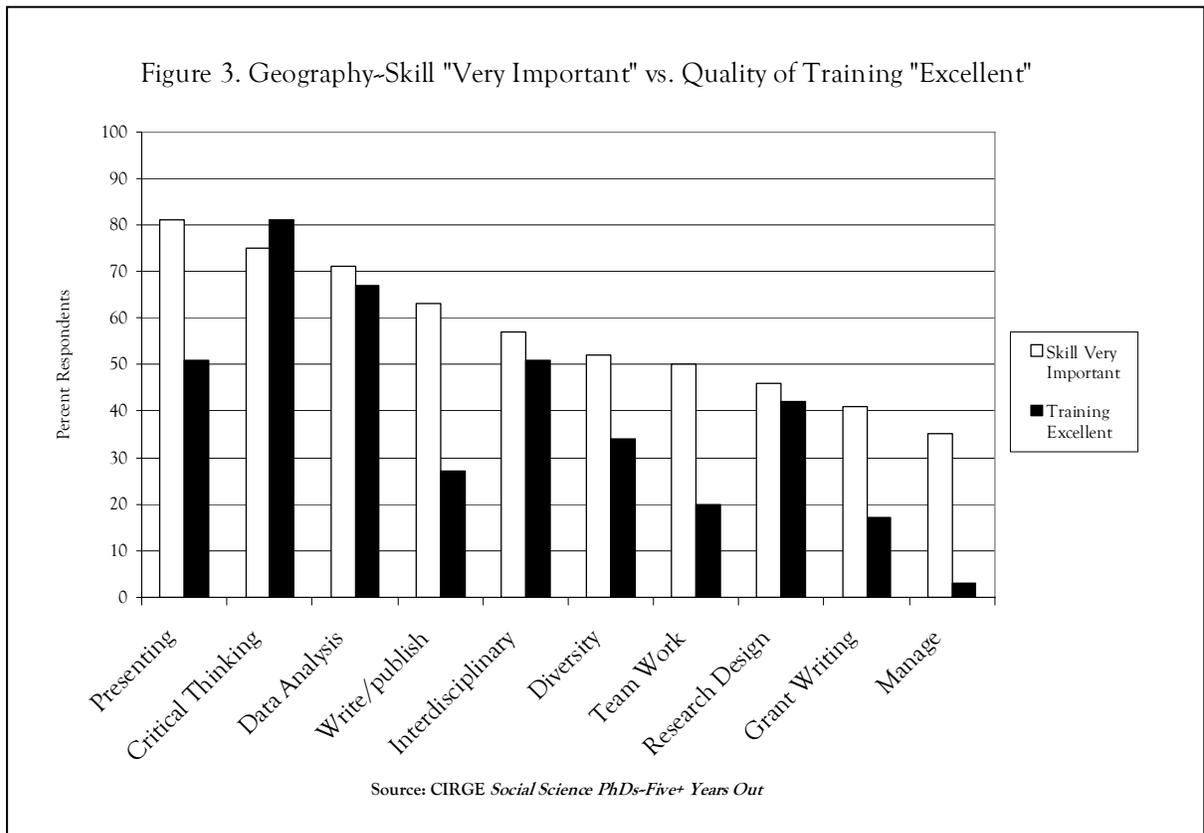
**Geographers reported being very satisfied with their advisor's mentoring in developing a thesis topic and completing the PhD, but few were satisfied with guidance for publishing.**

## Skill Development and Training in Geography

One way to evaluate how well a PhD program prepared graduates for their actual work is to ask about particular skills. Respondents to SS5 rated the importance of several skills in their current job using a 3-point scale of “very important,” “somewhat important,” and “not important.” They also rated the quality of the training – *formal and informal* – in each skill received in their PhD program using a 3-point scale of “excellent,” “adequate,” “poor.” Both inventories allowed for “not applicable,” an option that was almost never utilized. The five skills most commonly rated very important by geographers were presenting, critical thinking, data analysis, writing and publishing, and working in an interdisciplinary context. Respondents working in BGN sectors were more likely than those in academia to rate as very

important data analysis (87% vs. 66%) and team work (71% vs. 44%). Skills in critical thinking, writing and publishing, working in an interdisciplinary context and with diverse groups of people seem to be equally important in academic and BGN sectors. Surprisingly, managing people and budgets is as likely to be important in academic as in BGN sector work. Compared to the others, academic sector geographers more often use grant writing and research design skills (respectively, 48% vs. 19% and 50% vs. 39%).

The profile of skills needed in PhD geographers’ work provides a standard against which to assess the success of doctoral programs, by enabling us to ask how well graduates were trained in the skills they need in their jobs. Respondents’ retrospective assessments of the training they received in their PhD programs identify some areas of excellence but also some mismatches between quality of training and



importance of skills (Figure 3). For instance, more than 80% of respondents rated presentation skills “very important” in their jobs, but only half assessed as “excellent” the quality of training they received in this skill. On the other hand, an additional 42% rated their training as “adequate,” so that more than 90% of respondents felt they had been adequately prepared in presentation skills in their PhD program.

A closer look at the pattern of assessments suggests areas that PhD programs might target for improvement: grant writing, writing and publishing reports and articles, and collaboration and team work. Writing proposals for funding was identified by 41% of respondents as very important in their current job, yet only 17% felt

their training in this area had been excellent and 38% actually rated it poor. Respondents were often dissatisfied with the help their advisor gave them in writing and publishing (see above) and only 27% felt they had received excellent training in this area, with 24% rating their training in this area “poor.” Collaboration and team work, similarly, received a very important rating from half of respondents, yet the quality of training in this area was rated excellent by only 1 out of 5 and poor by 27% of respondents.

In the open-ended comments offering “Advice to Programs” a common theme among geographers was the lack of teacher training. Nevertheless, most geography respondents (86%) reported having taught during their PhD program.

#### From Rural Geography to the Business Sector

Simon Olivander\* entered his PhD program at a department in the top quartile of ranked PhD programs aspiring to become a professor. However, the appeal of a life in academia faded during his eight years in graduate school and he finished the program with no particular career goals. At the time of the survey, Simon was employed as a writer and editor in the business sector earning a salary of more than \$62,000. He was generally satisfied with his job in terms of intellectual challenge. He noted that since completing his PhD, he has found that his jobs demand well-developed skills in team work, and interdisciplinary work and feels that his PhD program did not offer many opportunities to gain these skills. On the other hand, he commented that his PhD program was excellent in terms of academic rigor and that his program prepared him well for the critical thinking needed in his work. Although his program offered little support and preparation for making the transition into non-academic careers, he found that the faculty in his program were supportive of his choice to pursue a non-academic career.

In retrospect, Simon suggested, he probably would have chosen to get a professional degree instead of a PhD. He advised current students as follows: “Consider specifically the intense competition for the few tenure-track jobs available, the need to work long hours without pay preparing articles for publication to have a chance in that competition, the likelihood of ending up with a low-paying non-tenure-track job, your likely debt load when you finish....”

Simon’s feeling that it would have been better not to do a PhD was not shared by most geography respondents—if they had it to do over, 78% reported, they would still get a PhD in the same field and subfield and only 10% felt that they would not get a PhD.

(\*All names used in this report are pseudonyms.)

## CONCLUDING OBSERVATIONS

*Social Science PhDs—Five+ Years Out* offers insights into the geography PhD experience and outcomes. By and large, geographers are pleased that they pursued a PhD and in hindsight would do it again. Simon Olivander's feeling that it would have been better not to do a PhD is not shared by most respondents: if they had it to do over, 78% reported that they would still get a PhD in the same field and subfield and only 10% felt that they would not get a PhD at all. This selection of geography PhDs has successfully secured rewarding and stable employment in diverse employment sectors 6-9 years after degree. However, to ensure greater success for their students, these graduates advise programs to encourage and guide students to publish, network, and present their work at conferences as

much as possible during their PhD education. In addition, with the possible overproduction of PhDs, many respondents urge programs to provide better professional development for careers outside the ivory tower in business, government, and non-profit sectors.

Based on this study, geographers appear to be satisfied with their graduate education and the applicability of their PhDs. The case studies in this report give varied accounts of the perceived value of the PhD education, but when matched with the aggregate geography data, Simon's story would appear to be the exception to the geography PhD experience. More importantly, this study shows the broad applicability of the geography PhD and the necessity of making links between academia and the business, government and non-profit sectors.

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# APPENDIX: NOTES ON INSTITUTIONS AND MEASURES

## Geography PhD-Granting Programs in the Survey Sample by 1995 NRC Ranking

### 1st Quartile:

Ohio State University  
Pennsylvania State University  
Syracuse University  
University of California, Berkeley  
University of California, Los Angeles  
University of California, Santa Barbara  
University of Minnesota  
University of Wisconsin, Madison

### 2nd Quartile:

Arizona State University  
Clark University  
Rutgers State University  
State University of New York, Buffalo  
University of Colorado  
University of Iowa  
University of Illinois, Urbana-Champaign  
University of Texas, Austin  
University of Washington

### 3rd Quartile:

Indiana University  
Louisiana State University and A&M College  
University of Georgia  
University of North Carolina, Chapel Hill

### 4th Quartile:

Kent State University  
University of Kansas  
University of Maryland  
University of Nebraska, Lincoln  
University of Oregon

### Unranked:

Massachusetts Institute of Technology  
Michigan State University  
Southern Illinois University  
University of California, Davis  
University of California, Riverside  
University of Tennessee, Knoxville

## Career Satisfaction Indexes

Principle components analysis of response patterns on 18 job satisfaction items revealed four underlying factors. SPSS varimax rotation method was used; resulting factors met a minimum eigen value criteria of 1.0. Varimax is an orthogonal rotation method that minimizes the number of variables that have high loadings on each factor, which simplifies the interpretation of factors. The items contributing to each of the four factors are as shown below.

### Factor 1 – The Work Itself

Use of doctoral education  
Intellectual challenge of work  
Contribution to society  
Level of responsibility  
Career growth  
Autonomy of work  
Prestige of organization  
Recognition for my work

### Factor 2 – Income & Resources

Salary  
Resources  
Job security/stability

### Factor 3 – Work-Life Integration

Work-life balance and enjoyment  
Flexibility of work  
Support/tolerance for all types of people

### Factor 4 – Work-Family Balance (only for partnered respondents)

Geographic location  
Proximity to extended family  
Opportunities for spouse or partner in the area

# Social Science PhDs—Five+ Years Out

## Participating Universities

Arizona State University	Massachusetts Institute of Technology	UC - Los Angeles	University of Nebraska at Lincoln
Boston College	Michigan State University	UC - Riverside	University of North Carolina
Brandeis University	New York University	UC - San Diego	University of Oregon
Catholic University of America	Northwestern University	UC - Santa Barbara	University of Pennsylvania
City University of New York	Ohio State University	UC - Santa Cruz	University of Pittsburgh
Clark University	Pennsylvania State University	University of Chicago	University of Rochester
Columbia University	Princeton University	University of Colorado at Boulder	University of Tennessee
Cornell University	Purdue University	University of Connecticut	University of Texas at Austin
Duke University	Rutgers University	University of Georgia	University of Virginia
Emory University	Southern Illinois University	University of Illinois	University of Washington
Florida State University	Stanford University	University of Iowa	University of Wisconsin
Harvard University	State University of New York at Buffalo	University of Kansas	Washington State University
Howard University	Syracuse University	University of Maryland	Washington University in St. Louis
Indiana University	UC - Berkeley	University of Massachusetts	Wayne State University
Johns Hopkins University	UC - Davis	University of Michigan	Yale University
Kent State University	UC - Irvine	University of Minnesota	
Louisiana State University		University of Missouri	

## Foundation Support

Ford Foundation

## Endorsements

Association of Graduate Schools affiliated to the Association of American Universities, American Anthropological Association, National Communication Association, Association of American Geographers, American Historical Association, American Political Science Association, American Sociological Association

## ACKNOWLEDGMENTS

We would like to express appreciation for our colleagues at CIRGE, the UW Graduate School, and College of Education. Myan Baker, Mimi Heggelund, Maren McDaniel, and Renate Sadrozinski contributed in multiple ways to getting this report done. Work-study students Claire McWilliams and Hannah Lee did excellent work for us. We thank Michael Solem of the Association of American Geographers for his valuable collaboration and for including us in the EDGE (Enhancing Departments and Graduate Education) and Healthy Departments meetings at the AAG annual meeting in San Francisco. We thank the members of the EDGE project and geography chairs for their thoughtful feedback and discussion. Lastly, we thank Victoria Lawson for her constructive guidance with this report.

**The Center for Innovation and Research in Graduate Education (CIRGE)** at the University of Washington, Seattle is the first U.S. research center devoted to the study of doctoral education. CIRGE's work enables graduate programs to respond effectively to the most challenging issues in graduate education today: accountability, internationalization, interdisciplinary work, and the increase in dual-career couples in the workforce. CIRGE is internationally recognized among program leaders, funders and policy makers as a trusted source of insightful analyses and practical information for improving graduate education.

Established by Dr. Maresi Nerad in 2001, CIRGE received funding from the Ford Foundation to build infrastructure, hire staff, and conduct a new national survey of PhD recipients in the social sciences, *Social Science PhDs–Five+ Years Out*. CIRGE is also supported by the Graduate School and the College of Education at the University of Washington, Seattle.

*Social Science PhDs–Five+ Years Out* is the third national survey of doctorate recipients directed by CIRGE Principal Investigator Maresi Nerad. *PhDs–Ten Years Later*, fielded in academic year 1996 – 1997 and funded by the Andrew W. Mellon Foundation and the National Science Foundation, surveyed biochemists, computer scientists, electrical engineers, English PhDs, mathematicians and political scientists. *PhDs in Art History–Over a Decade Later*, fielded in 2001 and funded by a grant from the Getty Grant Program, surveyed art historians. Results of these studies are available through the CIRGE website at [www.cirge.washington.edu](http://www.cirge.washington.edu).

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