

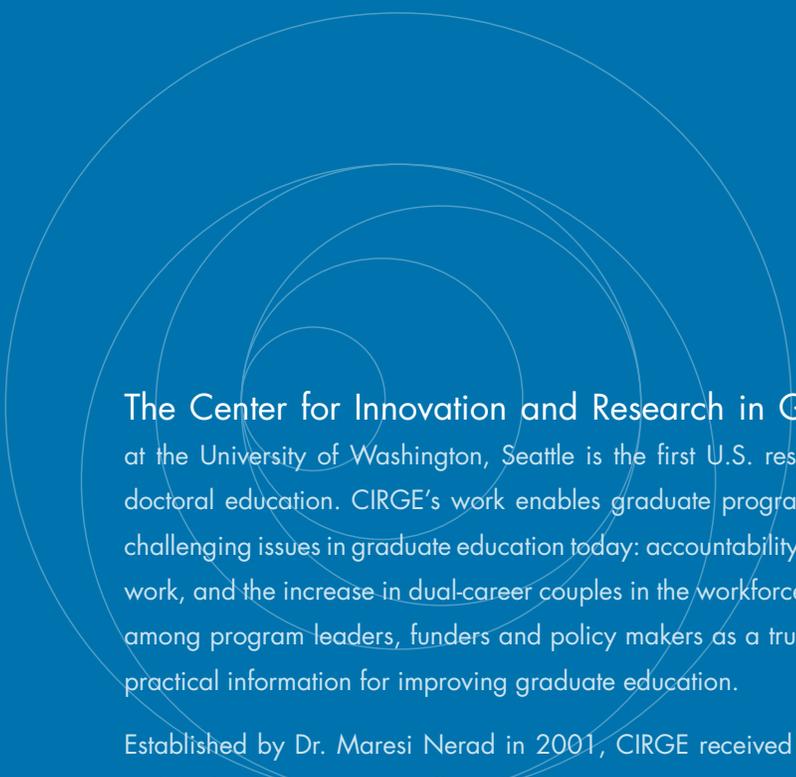
# Social Science PhDs— Five+ Years Out

## A National Survey of PhDs in Six Fields

*Principal Investigator Dr. Maresi Nerad*

HIGHLIGHTS 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. To find results of these studies, consult the CIRGE website at [www.cirge.washington.edu](http://www.cirge.washington.edu).

### CONTACT INFORMATION



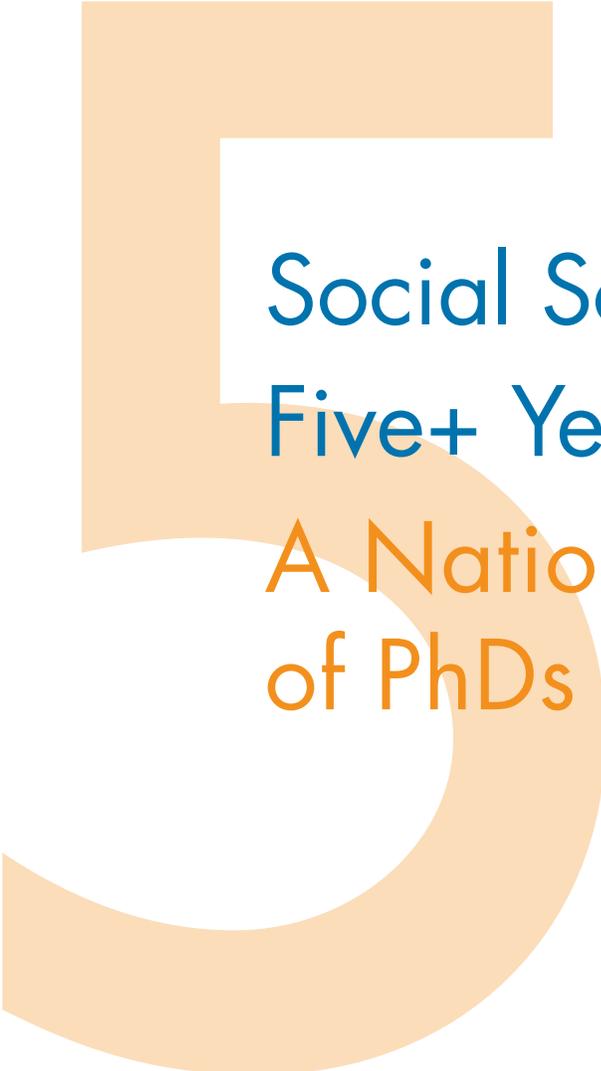
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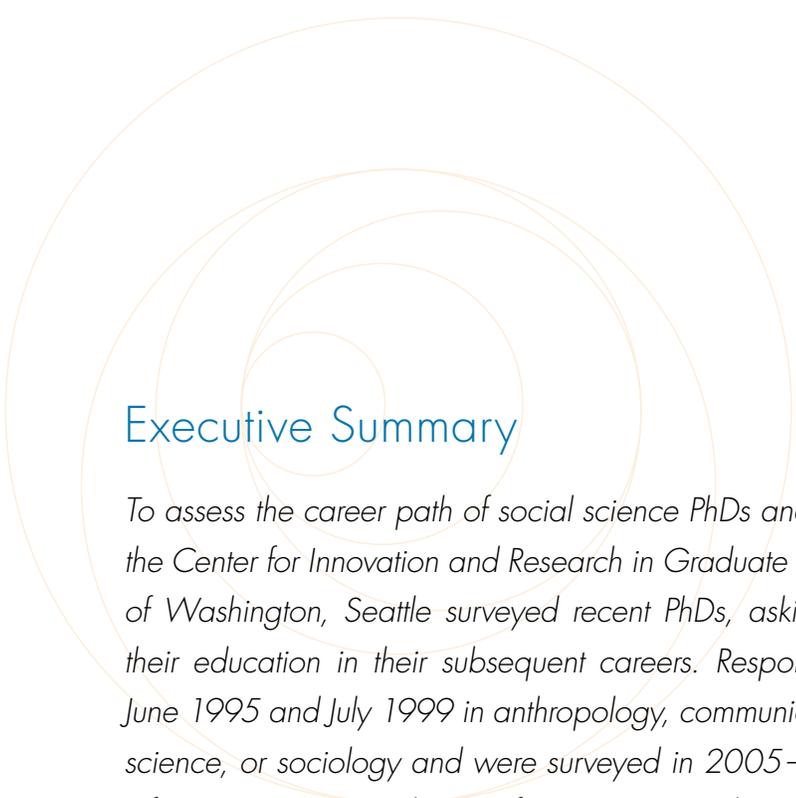
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CENTER FOR INNOVATION AND RESEARCH IN GRADUATE EDUCATION

University of Washington, Seattle

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## Executive Summary

*To assess the career path of social science PhDs and the quality of doctoral programs, the Center for Innovation and Research in Graduate Education (CIRGE) at the University of Washington, Seattle surveyed recent PhDs, asking them about the application of their education in their subsequent careers. Respondents earned their PhD between June 1995 and July 1999 in anthropology, communication, geography, history, political science, or sociology and were surveyed in 2005–2006, yielding career and family information spanning the time from starting graduate school to six to ten years post-PhD. With a national sample of 3,025 PhDs, the survey had a 45% response rate.*

*This report concludes that students in social science PhD programs are well prepared for their careers in a number of ways, but they need additional training in essential professional competencies and better career preparation in order to fully utilize the knowledge and analytical skills they acquired during doctoral education. For this reason, policy recommendations at the end of this report call for a paradigm shift in PhD education. Funders, policy makers, disciplinary associations, universities, and graduate faculty need to recognize that the PhD in the 21st century is preparation for employment. Social science doctoral students need better career preparation and opportunities for learning to manage careers. In particular, universities need to recognize that most men and women are in relationships, many with children, and this situation influences PhD careers; universities need to pay more attention to connecting research training with teaching, writing, and publishing; and universities need to bring professional development competencies such as teamwork, working in interdisciplinary contexts, grant writing, and managing people and budgets, from the margins to the center of PhD education.*

## Introduction

Annually more than 3,000 people earn doctorates in the social sciences, and it takes them an average of about eight years to do so (Hoffer et. al, 2006). This represents an enormous investment of personal and institutional resources, yet little is known about what happens to these doctorates after degree completion. Just as little is known about how the quality of doctoral education in the social sciences contributes to the careers of graduates. A national study of social science PhDs who earned their degrees between July 1995 and June 1999, conducted by the Center for Innovation and Research in Graduate Education (CIRGE) at the University of Washington, Seattle, collected this kind of information. Findings inform us about careers and the assessment of the quality of their doctoral education by social scientists in anthropology, communication, geography, history, political science, and sociology. The study, *Social Science PhDs—Five+ Years Out* provides data on work and family paths from the time respondents entered graduate school to their survey response date and also respondents' evaluations of the usefulness and quality of doctoral education based on six to ten years of career experience.

After more than 100 years of doctoral education in the US, astonishingly little research exists on the transition from graduation to work of doctoral students who successfully complete their studies. We know even less about their employment five or more years after degree completion and how they integrate their career with their personal life and family. Until very recently we were left with a perplexing problem: How can we understand the effectiveness of taxpayers' investment in universities, the financial investments of graduate schools and academic departments, the faculty's and university staff's intellectual effort and time, and most of all the individual students' personal investments in their education, when we have no idea what happens to PhDs after they graduate? How can we make sure that the U.S. prepares its doctoral students adequately for the present and the future if we do not create a feedback loop from those who have applied their education and who, from the vantage point of employment experience, can evaluate the quality of their education? Today, in a context of intensifying globalization and increasing national interest in the role of doctoral education for the knowledge economy, nations around the world, as

well as individual U.S. states' economic plans<sup>1</sup> are predicated on building an economic infrastructure that can compete in a knowledge and research based global economy (Nerad and Heggelund 2008). These are some of the most compelling reasons for undertaking this study.

But why study social scientists? The social sciences are the disciplines that help us understand globalization—"the intensified movement of goods, money, technology, information, people, ideas and cultural practices across political and cultural boundaries" (Holton 2005)—and its impact on past, present and future societies. Social science practitioners from anthropology to sociology, including communication, history, geography, political science, and many more, do the research that discovers the changing contours of human relations. They do the writing and teaching which make these findings available to each one of us who seeks knowledge and understanding of societies and social relations past or present or who wishes to consider the future of humanity.

Why spend much effort and time locating PhDs to survey them six and more years after graduating? Would it not be better to hear from current students? A meaningful evaluation of doctoral program quality can be best done by those who have applied what they learned (Nerad, Aanerud, and Cerny 2004, Aanerud et al. 2006). While currently enrolled students can evaluate their current experience, they cannot adequately evaluate the quality of their education without having had an opportunity to apply it. To shed light on the effectiveness of doctoral education, *Social Science PhDs—Five+ Years Out* assessed career outcomes directly from the graduates.

This report highlights key findings of the *Social Science PhDs—Five+ Years Out (SS5)* survey and concludes with policy recommendations. Part 1 describes the study methods. Part 2 reports on jobs, career paths, and work-family intersections of surveyed social science PhDs. Part 3 presents findings about program quality, including evaluations of program elements, mentoring, and skills training, and identifies mismatches between PhD education and PhD careers in social science programs. Part 4 summarizes the key findings and offers policy recommendations based on the study results.

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<sup>1</sup> See for instance, Governor of Washington Chris Gregoire's plan for economic development at [http://www.governor.wa.gov/news/Next\\_WA\\_Discussion\\_Draft\\_with\\_cover\\_FINAL.pdf](http://www.governor.wa.gov/news/Next_WA_Discussion_Draft_with_cover_FINAL.pdf)

# Methods—How We Surveyed PhDs Five+ Years Later

*Social Science PhDs—Five+ Years Out (SS5)*, a national study of PhD education and careers, surveyed recent recipients of doctoral degrees in anthropology, communication, geography, history, political science, and sociology. Respondents earned their PhDs between July 1, 1995 and June 30, 1999. In 2005–2006, using an online survey, they provided information on post-PhD career paths and assessed their graduate school experiences. Sixty-five U.S. institutions participated in the study. This group was selected to include geographic diversity, public and private universities, and, in ranked disciplines, equal numbers of departments from each quartile of the 1995 National Research Council (NRC) ranking of graduate programs (communication programs were not assessed by the NRC). Participating universities gave CIRGE publicly available information on graduates.<sup>2</sup> Ultimately, CIRGE located reliable contact information for 6,670 doctorate holders who fit *SS5* eligibility criteria. Of these PhD recipients, 3,025 PhD holders answered the CIRGE survey, yielding a response rate of 45%. Response rates were similar across disciplines (See Table 2).

The National Opinion Research Center (NORC) compared *SS5* respondents to non-respondents using the information reported by graduates to the *Survey of Earned Doctorates (SED)*, a survey completed at the time of the PhD award by nearly all recipients of doctoral degrees from U.S. institutions. The non-response

analysis found that women, whites, U.S. citizens (including permanent residents) and unmarried individuals responded at higher rates than men, non-whites, citizens of other countries, and married people (Table 1). On these characteristics, the differences between respondents and non-respondents were statistically significant but small. An important difference appeared, however, in post-graduation plans. Respondents were significantly more likely to report to the *SED* definite post-graduation plans to work in the academic sector (Table 1). This over-representation probably results from it being easier to locate people working in the academic sector than in other sectors and because careers that begin in the academic sector usually stay there. The over-representation of academically oriented graduates in the *SS5* sample is substantively large and statistically significant. Readers should keep this in mind when interpreting findings.

Respondents to *SS5* answered several pages of questions about career path and employment history, relationship events and parenthood, 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,

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<sup>2</sup> Publicly available information is limited and graduates may prevent educational institutions from sharing their personal information.

**TABLE 1***SS5 Non-Response Analysis*

	SS5 SAMPLE RESPONDENTS	NON-RESPONDENTS	DIFFERENCE SIGNIFICANT?
Women	47.6%	43.4%	p = 0.004
Whites	87.6%	81.7%	p < 0.001
U.S. Citizens and Permanent Residents	96.2%	92.1%	p < 0.001
Married (at PhD Award)	56.4%	58.6%	p < 0.001
Had Definite Post-Graduate Plans	63.5%	61.1%	p < 0.001
If Yes, Academic Plans	83.4%	78.4%	p < 0.001

Source: NORC special tabulation for CIRGE, *Social Science PhDs—Five+ Years Out*.

and experiences related to gender, racial/ethnic, class or other personal identities. *SS5* created a unique dataset that allows researchers to examine relationships between doctoral education experience, family situations, and career paths.

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.

*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).

# Where Are They Now? Jobs, Career Paths, and Work–Family Tension

When doctoral study was just being established in the United States, the American physiologist, philosopher, psychologist and Harvard professor William James wrote that the purpose of higher degrees was to promote scholarship, and that if the PhD would also “help to gain a bread-winning position,” its power “as a stimulus to work is tremendously increased” (James 1903). James’s comments are as relevant today. If PhD education does not lead to “bread-winning” positions, it will be less attractive and have far less power to promote research and scholarship. From this point of view, the careers of doctorate holders are a measure of the quality and success of PhD education; consequently a major goal of *SS5* was to document the careers of social science PhDs. Part 2 of this report answers these questions: What kinds

of jobs do social science PhDs have? What are typical career paths? Are they happy with their jobs? And finally, how do gender and family shape career paths and vice versa?

We found social science PhDs in academic and non-academic sectors have full-time jobs, which they enjoy and which use their PhD education. When surveyed, only 2% of respondents were not working and 90% worked full time. Among the employed, 81% worked in the academic sector and 19% worked in business, government, or non-profit (BGN) sectors. More than half (63%) held tenured or tenure-track faculty positions, 11% held non-tenure-track faculty jobs, another 7% worked in other types of academic positions (Table 2). Non-tenure-track faculty

**TABLE 2**  
Percent Respondents by Job Type at Survey and Discipline (N = 2721)

	ANTHROPOLOGY	COMMUNICATION	GEOGRAPHY	HISTORY	POLITICAL SCIENCE	SOCIOLOGY	TOTAL
<b>ACADEMIC SECTOR</b>							
Ladder faculty	52.3	71.2	53.3	65.7	66.3	62.8	63.4
NTT	13.5	9.7	13.2	12.3	7.1	11.7	10.9
Other	11.9	7.4	9.9	5.7	5.6	7.3	7.2
<b>BUSINESS, GOVERNMENT, NON-PROFIT SECTOR</b>							
BGN	22.4	11.7	23.7	16.4	21.0	18.2	18.5
N	371	299	152	757	647	495	2721

Ladder faculty=Tenured or Tenure-track faculty NTT = Non-tenure-track faculty Other = Academic other BGN = Business, Government, and Non-profit sector  
Source: CIRGE, *Social Science PhDs—Five+ Years Out*

included full-time visiting assistant professors, research professors, and part-time adjunct instructors. The “academic other” category included respondents employed in colleges and universities in several areas, including basic research, institutional research, administration, student services, and public relations. In BGN sectors, respondents worked in a range of jobs, doing such things as research, writing, museum work and archaeology, counseling, working in politics and public service, and consulting.

In each of the studied disciplines, more than half of the graduates worked in the academic sector; however, a substantial minority in each field worked in business, government, or the non-profit sector. Because the SS5 sample over-represents those with plans for academic work (see Part 1), Table 2 underestimates the size of the non-academic labor market for social science PhDs.

In addition to being employed, graduates made good use of their social science doctoral education and enjoyed their jobs. Despite popular perceptions of doctoral dissertations as narrow and arcane, most respondents used knowledge of their dissertation topic “often” or “sometimes” in their work. And dissertation topics were not exclusively of academic value. Even among those working in business, government, and nonprofit sectors, 22% used specific knowledge of their dissertation topic “often” on the job and another 27% did so sometimes. More than 2/3 of respondents working in BGN sectors reported using general knowledge of the social sciences, and knowledge of the respondent’s PhD field and subfield “sometimes” or “often” at work, as did more than 90% of all respondents (Table A.1).

Job satisfaction is a measure of career success, and most PhDs surveyed by SS5 rated themselves “very satisfied” or “somewhat satisfied” with 18 aspects of their current job, including items measuring satisfaction with the work itself, material resources, work-life integration, and work-family balance. On a four-point scale including “very satisfied,” “somewhat satisfied,” “somewhat dissatisfied,” and “very dissatisfied,” more than 80% of responses for the index of satisfaction with the work itself indicated respondents were at least “somewhat satisfied.” More than 2/3 fell on the satisfied side of the scale for the index of satisfaction with material resources. Satisfaction with work-life integration was high for respondents in all job types, while faculty in tenure-track or tenured positions were somewhat less likely than others to be satisfied with work-family balance, the index including “opportunities for spouse or partner.” (See Figure A.1 for details on satisfaction items and factors.)

In sum, more than half of surveyed social science doctorate recipients ultimately obtained satisfying positions, with about 2/3 becoming professors, 1/5 working in business, government, and non-profit sectors, and the rest employed in non-faculty jobs at colleges and universities. However, for many, the paths to these jobs included periods of unstable, insecure employment.

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**“Be aware that the job market is far tougher than your advisors will lead you to expect.”**

**POLITICAL SCIENCE PHD, TENURE-TRACK PROFESSOR,**

FROM SS5 OPEN-ENDED SURVEY QUESTION “ADVICE TO CURRENT STUDENTS”

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### *Oriented to Academia*

Graduates of social science PhD programs began doctoral education hoping to combine a passion for knowledge with the earning of a “bread-winning degree.” Motivations for getting a PhD most often stated were “intense interest in the field” and because a PhD “was a necessary credential for my desired position.” The desired position for 72% was to be a professor. These goals dovetailed with intentions of their faculty: more than ¾ of respondents felt that faculty in their PhD program “mainly encouraged graduate students to pursue academic careers.” In fact, about 5 out of 6 degree recipients applied for jobs in the academic labor market. Fewer than 5% of respondents sought work exclusively outside academia. Asked to indicate reasons for selecting their first main job, respondents attributed greater importance to the challenge and autonomy of the work than to job security, opportunities for career growth, or salary.

*Perceptions of the job market.* As they entered the labor market either shortly before earning the PhD or with PhD in hand, many respondents felt uncertain about their chances for finding the kind of job they wanted. Thirty-four percent began applying for jobs feeling that their chances in the academic labor market were “fair” and 19% that they were “poor.” Only 13% considered their chances “excellent” (Table A.2). Nevertheless, 66% of respondents applied only for academic jobs when first on the job market; 17% applied for both academic and non-academic

positions, 4% looked exclusively for non-academic jobs and 10% remained in a job or returned to a former job. Among those staying in or returning to a former job, 40% were employed in BGN sectors. Differences across fields were small, with historians most likely to apply only for academic jobs, about ¼ of anthropologists, political scientists, and sociologists likely to include non-academic jobs in their search. Communication PhDs and geographers were most likely to stay in or return to a job and 45% of these stayers or returners worked in BGN sectors.

*Time-to-degree.* SS5 Respondents sought jobs after spending an average of 6 to 8 years in a doctoral program, with a median of 6.75 and a mean of 7.2 years (Table A.3). At 5.2 years, the median time-to-degree was shortest for communication PhDs; the anthropologists had the longest median time-to-degree of 7.75 years.<sup>3</sup> Because of long years of study and breaks between undergraduate and graduate school, most PhDs earned their degree in their 30's, with a median age of 34 and an average of 36 years. **Consequently, most social science PhDs entered a challenging labor market when they were already in their mid-30's and had spent an average of six to eight years in doctoral education.**

### *Swimming Upstream: The Faculty “Fish Ladder Effect”*

Social science PhDs typically spent a few years in temporary positions before finally securing a stable, presumptively long-term position, such as a tenure-track faculty job or another kind of full-time job that was not temporary in the academic, business, government, or non-profit sectors. To illustrate quantitatively the instability in PhD career paths, we distinguished three types of jobs: (1) ladder faculty positions (tenure-track or tenured faculty), (2) all other full-time, stable jobs, including jobs in academic and business, government, and non-profit sectors, and (3) contingent positions (in all sectors), including temporary and part-time jobs, self-employment, and holding multiple jobs. Contingent positions were typically non-tenure-track faculty appointments, postdoctoral fellowships (however, only 9% of respondents ever held a postdoc), and positions about which respondents indicated that the “work was temporary and ended.” We included multiple job holders (who often held more

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**“Graduate school can set you up for a great career, but it can take a while to reach your goals and you won’t get rich.”**

**COMMUNICATION PHD, TENURED FACULTY,**

FROM SS5 OPEN-ENDED SURVEY QUESTION “ADVICE TO CURRENT STUDENTS”

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than one adjunct faculty position) and the self-employed in the contingent category because of their low incomes.

More often than not, PhD graduates entered the labor market into contingent positions. Within six months of being awarded their PhD, fewer than half (42%) of doctorate holders had obtained a position as ladder faculty or another kind of full-time job that was not temporary (Figure 2). One year out from the PhD, 50% were still in temporary or part-time positions. Not until more than three years out from the PhD did the proportion in full-time, stable employment reach 75%. At six years out from the PhD, 17% of respondents were still in contingent positions, creating a persistently contingent group.

The delayed time to permanent, full-time employment was especially acute on the path to the professoriate.<sup>4</sup> At the end of their PhD studies, 77% of respondents indicated career goal “professor.” Among these, within six months of earning the PhD, 1 out of 4 had transitioned into a tenure-track position. One year out, 40% of those seeking faculty positions had obtained tenure-track jobs. However, the 60% who had not yet secured a tenure-track position still had a chance to get a ladder faculty position—six years out from the PhD, 73% of those seeking faculty positions were in tenured or tenure-track positions.

The typical career path for social science PhDs, then, began in a temporary position but progressed to a ladder faculty position; a step that usually requires changing institutions and often also means a geographical move. The path to the ladder faculty

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3. SS5 indicators do not include the time spent in master's degree programs in a field or at an institution different from the PhD-granting program, thus the median time reported is shorter than the 8 years indicated by the *Survey of Earned Doctorates* for social science PhD cohorts of 1995–1999 (Thurgood, Golladay, and Hill 2006, p. 37).

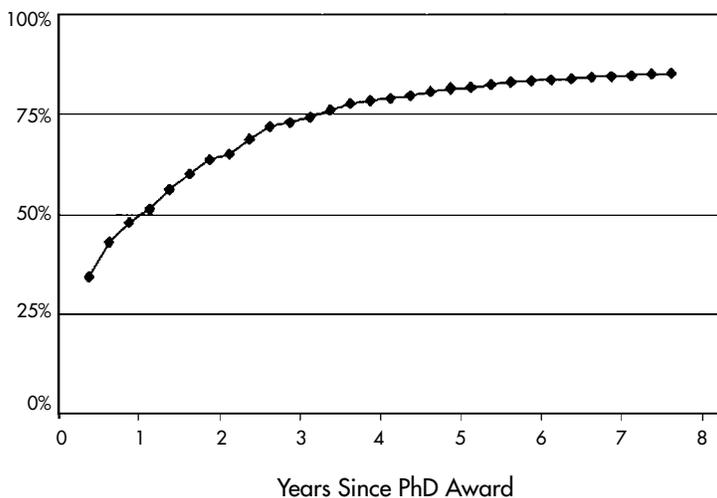
4. See also Schuster and Finkelstein's (2006) analysis of faculty appointments, which shows that the modal first job is term-limited and emphasizes the increasing proportion of full-time, non-tenure track faculty positions within American colleges and universities, a trend joining the already well-recognized rapid expansion of part-time non-tenure track faculty.

usually went through the contingent labor market: the likelihood of moving from full-time, non-faculty employment into a ladder faculty position was almost zero. There was, however, a small reciprocal flow between the contingent labor market and stable, full-time (non-faculty) positions in business, government, non-profit or academic sectors.

The challenging job market pushed some people out of academia. One-in-five of those who wanted to be a professor upon completing graduate school changed career goals some time after earning the PhD. Sixty percent of these post-PhD “goal shifters” had never been in a tenure-track position. To explain their change of heart, goal shifters usually offered “push” factors such as “no positions available in academia” rather than “pull” factors such as attraction to other opportunities. Conversely, people rarely left tenure-track positions. Among those who had ever been on the tenure track, when surveyed, 93% were still in ladder faculty positions.

In sum, social science PhD programs are oriented to academia and most graduates seek employment as professors. Careers commonly begin in contingent positions but progress into ladder faculty ranks. Metaphorically, graduates pool at different rungs of the academic ladder and swim upstream towards the goal of tenure. This is evident in stated career goals—77% wanting to become a professor at the end of their studies; in the 58% of first jobs that were contingent; in the 1 to 3 years it took most people to settle into stable jobs; by the fact that 93%

**FIGURE 2.**  
**Time to First Stable, Full-Time Job**  
 (PROPORTION RESPONDENTS)



**“Students need to be exposed to a wide variety of career options. Letting students drift by default into endless adjunct jobs is simply obscene.”**

**HISTORY PHD, NON-FACULTY ACADEMIC PROFESSIONAL**

FROM SS5 OPEN-ENDED SURVEY QUESTION “ADVICE TO PROGRAMS IN YOUR FIELD”

of those who ever held a tenure-track position stayed within the ladder faculty ranks. Further, those who began post-PhD careers outside academia entered the academic sector almost exclusively into temporary and part-time positions—the lowest rungs of the ladder. Finally, open-ended responses to the survey indicate that people who left academia usually felt pushed out. In other words, some felt stuck at lower rungs so they left the ladder for the “open water” of work in business, government, and non-profit sectors. We call this constellation of processes the faculty fish ladder effect.

**De-Railing Gender Equality in PhD Careers**

Men and women responding to SS5 had equivalent odds of starting their post-PhD careers in tenure-track faculty positions and of starting their careers at universities classified as Research 1 institutions, a finding that remains strong in regression models that control for discipline.<sup>5</sup> In light of the history of gender inequality in academic careers (Hochschild 1975, Long 2001, Simone 1987), this is surprising and worth noting as a landmark in gender equality in academic social sciences. But something happened on the way to tenure. Looking at differential rates of tenure, men’s and women’s non-academic careers, and experiences of work-family tension reveals substantial inequality.

Among those who had ever been on the tenure track, at six years post-PhD, 33% of men and 28.5% of women were tenured and this difference is statistically significant. Men also were more likely to be tenured at more prestigious research universities (6.1% vs. 4.3%). Among all respondents who were ever in a tenure-track position, when surveyed, 9% of women but less than 5% of men had left the ladder faculty.

More pronounced inequalities existed off the tenure-track. Six months after the PhD, half of both men and women were in the contingent labor market. Six years later, 23% of women were still there, compared with 16% of men, a difference that is substantively large and statistically significant. Off the tenure-track, men were more often in full-time, stable employment than women. Men off the tenure track earned more than men in ladder faculty jobs (\$59,000 vs. \$53,000 median annual income). Women off the tenure track earned less than ladder faculty women (\$50,000 vs. \$53,000 median annual income).

To pursue their PhD careers, women made more compromises. Although men and women were equally likely to wish for marriage and children, women married and formed marriage-like unions less often and they more often divorced and delayed or didn't have desired children (Table A.5). Both men and women wrote often about how careers limited family life and family lives limited careers, but women's careers more often were constrained by marriage and family: They were almost twice as likely as men to indicate that a job change occurred because of "family needs or responsibilities," or because a "partner's job moved." Women were more likely to be in dual-career couples, a situation that may complicate career advancement for doctorate holders because academic careers require geographic mobility (Kulis and Sicotte 2002, Rosenfeld and Jones 1987, Rudd et al. forthcoming). In fact, 59% of partnered men reported their partner moved with them to accommodate career advancement, but only 42% of coupled women pulled their partner with them to make a job move.

More women than men commented in open-ended responses on "trade-off decision... made among family, relationships, and career." Moreover, women wrote longer comments and identified greater sacrifices. More frequently than men, women wrote about career sacrifices they made for their spouse or partner and children, family relationships suffering because of their work, trying to balance their and a spouse's career, and living away from their partner. More often than women, men wrote that they had made no sacrifices or tradeoffs.

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**"... my spouse moved because of my career (I couldn't get an academic job where I got my PhD), but we moved to a place I didn't want to go so that we could both have decent jobs."**

**SOCIOLOGY PHD, MALE, TENURED PROFESSOR**

FROM SS5 OPEN-ENDED SURVEY QUESTION "WORK-FAMILY TRADE-OFFS"

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**"I did use my first professional sabbatical as 'maternity leave,' which I felt was extremely stressful, not fair to my career, and not very professionally productive. That was the only way to take a semester off to care for my baby, however."**

**POLITICAL SCIENCE PHD, FEMALE, TENURED PROFESSOR**

FROM SS5 OPEN-ENDED SURVEY QUESTION "WORK-FAMILY TRADE-OFFS"

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In sum, the gender equality achieved in access to ladder faculty appointments in the six surveyed disciplines is surprising and noteworthy, but it is countered by inequalities in tenure rates that appear a few years later, by inequalities in non-faculty labor markets, and by the greater personal costs women pay to pursue a PhD career. **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 tension.**

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5. The Carnegie classification of colleges and universities describes institutional diversity for research and analysis. In the pre-2005 classification used for SS5, a Research 1 institution is a large research university. Although the Carnegie classification is not meant as a prestige classification, in fact, Research 1 universities are more prestigious than other classified institutions.

# Strengths and Weaknesses of U.S. Social Science PhD Programs

Part 3 of this report highlights graduates' evaluations of their doctoral programs and investigates how well doctoral education prepared respondents for their careers. Doctoral programs exist to educate students to become independent researchers, who have in-depth knowledge of their field and are capable of producing new knowledge (Berelson 1960; Bernstein and Evans, et al. 2007). PhD students in the social sciences should learn how to understand and apply theories, analyze data and interpret evidence, and, finally, undertake original research. These core PhD functions remain central in quality assessment, but policy makers and funders now urge PhD students to acquire additional "generic," "transferable," or "professional development" skills—especially the capacity to work successfully with others and to communicate research findings to audiences across disciplinary and national borders (COSEPUP 1995, Gilbert et al. 2004, National Academy of Sciences 2005, Nerad 2004, Nyquist 2002). Though not a new concern (Berelson 1960), recent studies also criticize the tradition of having PhD students teach without preparation (Golde and Dore 2001, Gaff, Pruitt-Logan, and Weibel 2000). Finally, shifting markets for PhD labor focused attention on PhD students' need for better career preparation and support and guidance in the transition from student to employed professional (Council of Graduate Schools 2007, COSEPUP 1995, Nerad 2004).

To assess the quality of doctoral education, *Social Science PhDs—Five+ Years Out* asked graduates to look back on their PhD education from the perspective of having worked for several

years. This is part of the shift toward "student-focused" assessment of program quality (Denecke 2006, Nerad and Cerny 1991, 1999). In *SS5*, student-focused indicators include graduates' evaluations of the quality of their PhD program (Table 3.1), of preparation for teaching (Table A.6), of mentoring by the dissertation advisor (Table 3.2), of the importance of specific competencies in their current work and the quality of training received in these skills during graduate school (Table 3.3, Table A.7, Table A.8).

## Overall Support, Transparency, and Career Preparation

Questions in *SS5* about particular elements of the PhD program reflect several aspects of a doctoral program needed to maintain quality. These include keeping academic standards high, mentoring and advising of students, supporting students financially,

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**“All doctoral programs should include some training on how to teach and [should] supervise first-time graduate students in class.”**

**SOCIOLOGY PHD, TENURED PROFESSOR,**

FROM *SS5* OPEN-ENDED SURVEY QUESTION “ADVICE TO PROGRAMS IN YOUR FIELD”

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TABLE 3.1

## Percent Respondents by Quality Assessment of Program Elements

	EXCELLENT	ADEQUATE	POOR
<b>ACADEMIC RIGOR</b>			
Academic rigor	66.4	31.5	2.1
<b>SUPPORT OF STUDENTS</b>			
Support/guidance during dissertation writing	42.4	40.7	16.9
Preparation for qualifying examination	37.4	52.5	10.1
Socializing students into the academic community	32.3	45.6	22.1
Financial support	35.3	46.0	18.6
Having a diverse student population	28.2	51.2	20.6
<b>TRANSPARENCY</b>			
Feedback on student progress	32.0	55.4	12.6
Clear program requirements	54.5	42.2	3.3
<b>CAREER PREPARATION</b>			
Academic career preparation	31.6	42.9	25.2
Non-academic career preparation	6.0	29.0	65.1
Overall program quality	49.0	46.8	4.2

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

having a diverse student population, providing clear program requirements, feedback to students on their progress meeting requirements, and preparing students for professional careers (Lovitts 2004, Nerad and Cerny 1991, Tinto 1997, Golde and Walker 2006). On a scale of “excellent,” “adequate,” and “poor,” items reflecting support for students left most graduates feeling their program had done an adequate or an excellent job. Troubling is the low proportion of respondents (32.3%) who felt their program had done an excellent job with socializing students into the academic community and the 22% rating this “poor.” Good transparency was reflected in half of all respondents reporting “excellent” for clarity of “program requirements.” This was countered, however, by the low proportion (32%) indicating excellence in “feedback on student progress.” Career preparation was ranked lowest. **Even preparation for academic careers—commonly assumed to be the goal of PhD studies—received an excellent rating from only 1 out of 3 respondents and was rated “poor” by 1 out of 4.**

### Teaching Preparation

Possibly, the traditionally laissez faire approach to preparing graduate students to teach contributes to lukewarm ratings of academic career preparation. About half (54%) of all PhDs in this study went on to faculty positions in which teaching is as important as, or more important than, research (see also Schuster and Finkelstein 2006). Consequently, the availability and usefulness of opportunities for formal instruction and/or supervision of teaching during graduate school is important for many PhD students. **SS5 found that about half (53%) of graduates had been offered formal instruction in teaching or formal supervision and evaluation of their teaching.** Of these, most used these opportunities and found them useful. More than half (59%) of respondents had an opportunity to prepare and teach a course during graduate school, and close to 90% of these individuals found this experience useful (Table A.6). Nevertheless, about half of surveyed social science PhDs left their studies without formal training in how to teach.

**TABLE 3.2**

**Percent Respondents by Level of Satisfaction with Support and Guidance of Dissertation Chair**

	<b>VERY SATISFIED</b>	<b>SOMEWHAT SATISFIED</b>	<b>SOMEWHAT UNSATISFIED</b>	<b>VERY UNSATISFIED</b>
Developing thesis topic	55.0	31.5	9.4	4.1
Guidance in completing dissertation	54.9	28.2	11.4	5.5
Help in publishing	27.5	28.9	25.3	18.3
Support of career decisions	50.8	29.1	11.3	8.8
Support of job search	43.0	29.7	15.8	11.5
Overall quality of mentoring	48.0	30.9	13.0	8.1

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

**Mentoring**

Students’ experiences with mentoring are an important dimension of PhD program quality. In fact, many students leave PhD programs due to poor mentoring and advising (Lovitts 2001). This makes the weaknesses indicated by SS5 respondents—who, after all, received good enough mentoring to actually complete their PhD program—all the more compelling. Among findings about mentoring by the dissertation advisor, the contrast is striking between the high proportion of respondents very satisfied with help developing their thesis topic and guidance to complete the dissertation, compared to the low proportion satisfied with help in publishing. For those who consider publishing integral to doing research, this finding points to weaknesses in a core function of social science PhD programs. Although respondents often felt their programs did not do a very good job with career preparation, they were generally satisfied with their dissertation chair’s support of their career decisions and job search. **In sum, respondents gave their programs high marks for academic rigor and were more often “very satisfied” with advisors’ help in developing the thesis topic and completing the dissertation, yet they indicated in a variety of ways that their programs neglected career preparation.**

**Competencies Needed in Current Jobs**

The SS5 competencies inventory offers another perspective on program quality. Respondents rated the importance in their current work of professional competencies that are increasingly needed, such as working in diverse groups, in interdisciplinary contexts, and in collaborative teams (COSEPUP 1995, Gibbons et al. 1994, Nyquist 2002, Wuchty, Jones, and Uzzi 2007).

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**“...make sure that you get the advisor that fits your needs and nature, have more than one for that matter both in your department and outside. You must do part of the work of creating a good mentoring relationship.”**

**COMMUNICATION PHD, TENURE-TRACK PROFESSOR**

FROM SS5 OPEN-ENDED SURVEY QUESTION “ADVICE TO CURRENT STUDENTS IN YOUR FIELD”

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**“Don’t shortchange pragmatic issues: how to write a grant proposal, how to write a letter of application, how to give a job talk, how to negotiate salary, how to get your work published.”**

**HISTORY PHD, NON-TENURE-TRACK FACULTY,**

FROM SS5 OPEN-ENDED SURVEY QUESTION “ADVICE TO PROGRAMS IN YOUR FIELD”

They also rated the quality of training (formal or informal) in their PhD program in each skill. Responses show the continuing relevance of PhD education for a variety of jobs in both academic and BGN sectors. We also find some surprising areas of mismatch between the competencies being used by PhD graduates six to ten years post-PhD and the quality of the training in these competencies in their PhD programs (Table 3.3). The following discussion focuses on patterns that hold across the disciplines, only mentioning disciplinary differences to illustrate the range of findings or to indicate the specificity of one or more disciplines. (For evaluations by discipline of importance in current work of specific competencies and quality of training, see Tables A.7 and A.8).

*Critical thinking* skills were key in the current jobs of nearly all respondents, ranging from 92% of ladder faculty to 82% of BGN sector professionals (see Table 3.3). For *data analysis and synthesis*, similarly, 76% of ladder faculty and BGN sector professionals returned a rating of “very important.” *Writing and publishing reports and articles* was rated “very important” by 2/3 of respondents, with a range across disciplines from 72% of sociologists to 59% of communication PhDs. **In other words, despite criticisms of PhD education as overly narrow, in fact skills that define doctoral education were applicable in many types of jobs and essential in the work of most social science PhDs.**

*Research design*, an essential competence for social scientists, was rated “very important” by half of all respondents. Substantial and statistically significant differences by field appeared, however, with 65% of sociologists finding research design key in their current job compared to 38% of communication PhDs and 27% of historians.

*Presentation skills* were rated “very important” by nearly all respondents and this varied little by discipline or job category. *Writing proposals for funding* (“grant writing”) figured prominently in the work of 2/5 of the respondents, with the proportion much higher for anthropologists (56%) and sociologists (49%) and lowest for communication PhDs (32%).

Although PhD careers are not commonly considered managerial, *managing people and budgets* was a “very important” part of current jobs for 1/3 of the respondents, including ladder and non-tenure-track faculty. Anthropologists were most likely to rate management competencies “very important.”

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**“Provide much more hands on experience with project management, budget writing, and grant writing.”**

**GEOGRAPHY PHD, RESEARCH PROFESSOR,**

FROM SSS OPEN-ENDED SURVEY QUESTION “ADVICE TO PROGRAMS IN YOUR FIELD”

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Overall nearly half of respondents rated *team work* “very important” in their current jobs, regardless of job sector and discipline. For example, contrary to the stereotype of the lonely scholar toiling in obscurity in dusty archives, 39% of historians considered team work skills “very important” and another 40% rated these skills “somewhat important” in their work. Team work was most often rated “very important” by anthropologists (59%), followed by communication PhDs (53%) and sociologists (52%). Most striking, however, nearly 3/4 of those employed in BGN sectors reported that team work was very important, compared to slightly more than 1/3 of ladder faculty.

*Working with diverse groups* loomed large for half of respondents, with a high of 64% of anthropologists returning a rating of “very important” and a low of 44% of political scientists. Perhaps reflecting the racial/ethnic stratification of (and within) academic institutions, non-tenure-track faculty and those in academic other positions were more likely than ladder faculty to find working with diverse groups “very important.” Compared to ladder faculty, diversity was also more often central for those employed in a BGN sector.

The ability to work in *interdisciplinary contexts* was similarly “very important” for half of respondents, with the anthropologists most likely (62%) and historians least likely (45%) to report needing these skills. As with diversity and team work, ladder faculty seemed to lag behind the trend, with fewer than half (46%) believing working in interdisciplinary contexts was key for them, compared to 60% of those in other academic work and 57% of non-tenure-track faculty and BGN professionals.

**In sum, competencies not traditionally central in PhD education were, in fact, very important in many people’s jobs in all disciplines and job categories, including team work, communication skills, working in interdisciplinary contexts and managing people and budgets.**

TABLE 3.3

## Percent Rating Skill “Very Important” in Current Job and Percent Rating Quality of Training “Excellent”

SKILL	% OF ALL RATING SKILL VERY IMPORTANT	% OF COLUMN 1 RATING TRAINING EXCELLENT	% OF ALL RATING TRAINING EXCELLENT	% IN BGN RATING SKILL VERY IMPORTANT
<b>RELATED TO CORE PHD EDUCATION</b>				
Critical thinking	88.8	82.3	79.3	81.9
Data analysis / synthesis	74.2	70.5	62.2	75.9
Writing and publishing	66.4	35.2	29.8	51.3
Research design	45.6	52.1	36.3	39.9
<b>COMMUNICATION AND TEAM WORK</b>				
Diversity	51.3	35.7	26.6	57.3
Interdisciplinary contexts	50.5	41.6	32.1	56.9
Team work	47.5	21.9	14.7	73.4
<b>OTHER PROFESSIONAL DEVELOPMENT SKILLS</b>				
Presenting	82.9	38.2	34.8	73.7
Grant writing	40.1	24.1	15.1	30.0
Managing people, budgets	31.3	6.8	3.1	46.9

Source: CIRGE, Social Science PhDs—Five+ Years Later

### Evaluation of the Quality of Training

Evaluations of the quality of training (formal or informal) during doctoral education revealed strengths and weaknesses in specific competencies that traditionally define the core of PhD education. Comparing the quality of training to the importance of these competencies in current jobs indicated some noteworthy mismatches between education and careers. (See Table A.8 for a complete listing of quality of training evaluations by discipline.)

Among competencies central in PhD education—critical thinking, data analysis and synthesis, research design, and writing and publishing—respondents indicated strengths in critical thinking and data analysis and synthesis, and weaknesses in their training in research design, writing, and publishing. In contrast, respondents viewed their training in the “generic” or “professional development” skills of *presenting*, *grant writing*, and *managing people and budgets* as dismal. Despite being in programs

expecting to send most graduates into teaching positions, only 35% felt they had excellent training for presenting. Compared to the other fields, PhDs in communication and geography were more likely to rate training in presenting excellent (41% and 51%, respectively). In light of the growing importance of grant funding for academic researchers, few respondents evaluated training in this as “excellent” (15%) but nearly half (46%) rated it “poor.” The highest proportion of “poor” ratings came from communication (63%), political science (52%) and sociology (52%).

Managing people and budgets is not traditionally part of research doctorate programs, accordingly most respondents rated their training in managing “poor.” One out of four indicated training in these skills was “not applicable” for them. As noted above, however, 1/3 of the respondents considered management skills “very important” in their current job.

“Professional” or “transferable” competencies necessary for research and other kinds of PhD careers today, including working in diverse groups, in interdisciplinary contexts, and in collaborative teams, likewise received lukewarm assessments. Less than 1/5 (15%) felt training in team work skills was “excellent” and 1/3 considered it “poor” (with 21% considering these skills “not applicable”). Training for working with diverse groups was rated “excellent” by 27% and “adequate” by 43%. The low occurrence of excellent ratings for training during PhD studies in communication and teamwork skills indicates mismatches between PhD education and PhD careers. As discussed above, many more respondents considered these skills “very important” in their jobs than evaluated the training they received as “excellent.”

**By asking social science PhDs about particular competencies needed in their jobs and the quality of training in these skills in their PhD programs, the SS5 inventory revealed important discrepancies between PhD education and PhD careers. Presentation skills were prominent in most people’s jobs, yet were apparently not well taught in most PhD programs. Training in grant writing received low marks, yet about half of respondents needed this skill. Similarly, managing people and budgets was critical for 1/3 of the respondents overall, yet programs did not include these competencies. Finally, about half the respondents regarded team work, and working in diverse environments and interdisciplinary contexts as key competencies for their jobs, yet the quality of training in these skills received low ratings.**

### **Program Assessment Summary**

Graduates viewed programs as stronger on academic rigor and support and guidance to finish the dissertation than on socializing students into the academic community and career preparation. Similarly, they felt that dissertation advisors did a better job helping to define the dissertation topic and guiding students to complete the thesis than with mentoring students in publishing or with supporting the job search.

PhD holders reported making good use in their jobs of the excellent training they received in competencies central to PhD education. Four out of five (79%) respondents rated training in critical thinking “excellent” and 2/3 rated training in data analysis and synthesis “excellent.”

The skills inventory also indicated alarming weaknesses in core tasks of social science PhD education. Only half the respondents felt their research design training was “excellent” and only one third rated training in writing and publishing “excellent.” Formal training or evaluation of teaching was available to fewer than half of respondents.

In sum, graduates’ gave their programs high scores for training in analytical competencies that are central in doctoral education and key in post-PhD careers, but they often viewed their programs as failing to train them well in research design, presenting, writing and publishing, administrative and management skills, and teaching. In addition graduates often felt that programs neglected career preparation.

# 4

## Key Findings and Policy Recommendations—A Paradigm Shift in PhD Education

This study shows that social science PhD education is still structured as if it were to prepare **all** students for life as a professor and as if there were a smooth transition from graduate school to a job, but that this is not true for most graduates. The path to the professoriate or other stable employment is marked by uncertainty and PhD careers today demand competencies not traditionally acquired in PhD education. This report emphasizes eight key findings of the study:

- Most social science PhDs ultimately obtained satisfying, full-time positions in which they used their PhD education; however, more than half (58%) of first jobs post-PhD were part-time or temporary.
- Among surveyed social science PhDs, 6 to 10 years post-PhD, 63% were tenure-track or tenured professors, 19% held other kinds of jobs at colleges and universities, and 18% worked in business, government, and non-profit sectors.
- Men and women were equally likely to begin careers in tenure-track faculty positions; however, women experienced more work-family tension, were more likely to be single and to forgo desired children, and lagged behind men in achieving tenure.
- Respondents gave high quality ratings to their PhD programs for training in analytical competencies central in doctoral education, but often felt their PhD program had neglected career preparation and socialization.

- Fewer than half (39%) of respondents reported the availability of formal training in teaching in their PhD program.
- Reflecting the usefulness of doctoral study in the social sciences, respondents in all disciplines and job categories rated as “very important” in their current jobs: critical thinking, data analysis and synthesis, and writing and publishing.
- Respondents often viewed their programs as failing to train them well in research design and writing and publishing.
- Competencies not traditionally central in PhD programs were very important in many respondents’ jobs—including team work, communication skills, working in interdisciplinary contexts, and managing people and budgets.

These findings suggest the need for a paradigm shift in PhD education. Funders, policy makers, disciplinary associations, universities, and graduate faculty need to recognize that *the PhD in the 21<sup>st</sup> century is preparation for employment*. The core educational tasks before the PhD student are to acquire in-depth knowledge of a field and learn how to do original research. However, the capacity to realize the potential for the individual and society of the knowledge and analytical skills gained during long years of doctoral study requires additional competencies needed in contemporary workplaces both inside and outside the university. Consequently, this report concludes with the following policy recommendations.

## 1. Assess PhD Careers

To respond effectively to changing labor markets, we need to know more about the careers of PhD recipients and how well they are prepared during their PhD education for these careers.

- Careers of doctoral program graduates should be assessed, at the earliest, five years after award of the PhD.
- Graduates' views on the contribution of their PhD education to their careers should be a key component of such an assessment.
- Data on careers and program quality should be collected using common definitions so as to establish national trend data and benchmarks comparable across individual universities.

## 2. Prepare PhD Students to Manage Careers

Let's shatter the tenacious myth of the normative faculty career beginning in a tenure-track position and leading to tenure. Students should be offered insight into how the labor market for PhDs in academia really works. Students should be able to learn about careers in business, government, and non-profit sectors.

- Involve students in activities that socialize them into the academic profession, such as attending conferences, presenting papers, and participating in departmental committees.
- Give students realistic information about the increasing prevalence of full-time temporary and full-time non-tenure-track positions in faculty careers.
- Offer students resources for useful information about non-faculty careers in their discipline in business, government and non-profits through contacts with alumni, professional associations, and campus career centers.
- Provide students opportunities to network with disciplinary colleagues who work outside of the academy.

## 3. Confront Work-Family Tension in PhD Careers

We need to jettison the notion of the ideal graduate student as an unencumbered young man. When they earn the PhD, graduates in the social sciences are usually married and in their early to mid-30's. In many disciplines at least half of PhD recipients are women, many of whom are in dual-career relationships.

- Universities should develop and implement policies to ease work-family tension and make these policies available to graduate students.
- Understanding the situation of dual-career couples and resources available to them should be part of preparation for career management.

## 4. Renew Focus on Research Design, Writing, and Publishing in Social Science PhD Programs

Research design, writing and publishing must be key components of social science doctoral programs in addition to competencies in information synthesis and data analysis. Writing skills and knowledge of how to publish are essential academic competencies, and they also embody valuable "generic" skills transferable to non-academic labor markets.

- Enhance the attention to research design.
- Provide ample opportunities to write for an audience and to learn the process of publishing research articles and reports.

## 5. Bring Social Science PhD Programs into the 21<sup>st</sup> Century

New times bring new needs. PhD programs should move out of the 19<sup>th</sup> and into the 21<sup>st</sup> century by bringing professional competencies from the margin to the center of doctoral education. PhD programs that prepare students only for research and writing as lonely scholars in purely disciplinary contexts are providing inadequate preparation for many PhD careers. PhD graduates today increasingly need to write proposals for funding, work collaboratively, work in interdisciplinary contexts, and manage people and budgets. PhD programs should examine whether they are preparing students for scholarship in a world in which multiple researchers from a variety of disciplines collaborate in research and writing, often across national boundaries.

- Change PhD program requirements to ensure that students gain experience in some of the following: collaboration, grant writing, interdisciplinary contexts, managing people and budgets. This experience should not be "added on" in generic courses, but should be an integral part of becoming an independent researcher in the student's PhD discipline.

## 6. Establish Career Development Policies in Social Science PhD Programs

Career preparation should *begin at the beginning* of a doctoral program. University administrators, graduate schools, disciplinary associations, and graduate faculty should collaborate to ensure a comprehensive approach to the career development of doctoral students throughout their doctoral education.

- Offer career development symposiums annually. Include job search strategies for dual career couples.
- Integrate discussion of career issues into academic planning for students at critical transition points—of particular importance is the transition from course-taking to independent research.
- Offer workshops in connection with departments, the graduate school, and the campus career center for practicing job search skills.

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**APPENDIX 1:**

# Supplemental Figures and Tables

**TABLE A.1**

Percent Respondents Using Knowledge of PhD Thesis, PhD Field, and General Social Sciences by Frequency of Use in Job by Job at Survey

	PHD THESIS				PHD FIELD				GENERAL SOCIAL SCIENCES			
	LF	NTT	AO	BGN	LF	NTT	AO	BGN	LF	NTT	AO	BGN
<b>OFTEN</b>	54.3	33.5	20.2	22.1	85.4	68.8	51.6	44.9	68.8	70.3	66.7	57.3
<b>SOME-TIMES</b>	32.5	38.3	34.4	27.2	11.6	19.7	24.6	30.7	26.2	20.9	26.2	28.5
<b>RARELY</b>	11.8	23.8	25.8	26.7	2.9	9.6	17.5	14.6	4.8	7.6	6.3	8.6
<b>NEVER</b>	1.3	4.4	19.6	24.0	0.2	1.9	6.3	9.7	0.3	1.3	0.8	5.6

LF = Ladder faculty NTT = Non-tenure-track faculty AO = Academic other BGN = Business, Government, and Non-profit sector

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

**TABLE A.2**

Percent Job-Seekers by Evaluation of Chances in Academic Labor Market by Discipline\*

	A	C	G	H	PS	S	ALL
<b>EXCELLENT</b>	9	31	20	7	8	18	<b>12</b>
<b>GOOD</b>	32	41	45	30	38	37	<b>35</b>
<b>FAIR</b>	35	24	26	37	37	31	<b>34</b>
<b>POOR</b>	24	4	8	27	17	13	<b>19</b>

\*Excludes those indicating item “not applicable.”

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

**TABLE A.3**

Median and Mean Time-to-Degree by Discipline

	MEDIAN	MEAN	N
Anthropology	7.7	8.4	431
Communication	5.2	5.5	343
Geography	5.7	6.3	164
History	7.0	7.5	837
Political Science	6.7	7.0	699
Sociology	6.7	7.3	543
<b>Total</b>	<b>6.8</b>	<b>7.2</b>	<b>3017</b>

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

**TABLE A.4**

Percent with Career Expectations Met or Exceeded by Job at Survey

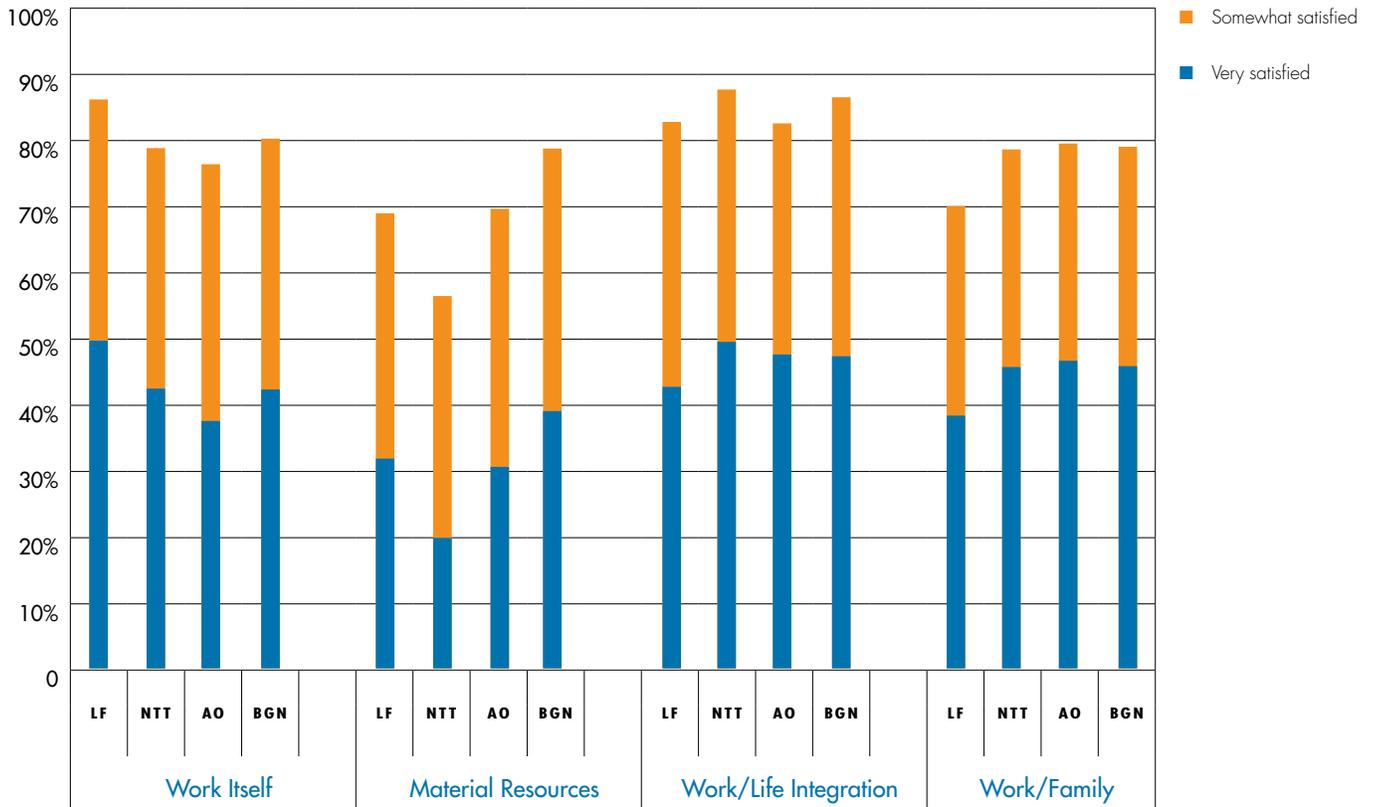
EXTENT OF FULFILLMENT OF CAREER EXPECTATIONS	LADDER FACULTY	NTT FACULTY	ACADEMIC OTHER	BGN
Greater than expected	29.4	16.7	20.6	21.1
About what expected	49.7	30.0	31.3	28.1
Less than expected	18.6	36.1	25.2	22.1
Not at all what expected	2.3	17.2	22.9	28.7

NTT = Non-tenure-track faculty BGN = Business, Government, and Non-profit sector

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

**FIGURE A.1**

**Four Dimensions of Job Satisfaction by Job at Survey\***



LF = Ladder faculty    NTT = Non-tenure-track faculty    AO = Academic other    BGN = Business, Government, and Non-profit sector

Source: CIRGE, Social Science PhDs-Five+ Years Out

\* 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

**TABLE A.5**

Differences in Family Formation, Spouse’s Education and Employment Status, Moving for Spouse’s Career, and Parenting by Gender

	WOMEN (%)	MEN (%)	DIFFERENCE SIGNIFICANT?
<b>OF ENTIRE SAMPLE</b>			
Never married	22.0	16.9	p < 0.001
Never married nor partnered	13.2	10.9	p < 0.10
Ever divorced	17.4	11.2	p < 0.001
<b>OF THOSE MARRIED AT PHD START</b>			
Divorced, separated or widowed at PhD award	12.3	6.6	p < 0.01
<b>OF THOSE MARRIED AT PHD AWARD</b>			
Divorced, separated or widowed at survey	6.1	5.1	(p < 0.10)
<b>OF THOSE WHO REPORTED MARRIAGE IS “VERY IMPORTANT” OR SOMETHING WOULD “LIKE TO HAVE”</b>			
Never married	21.8	14.4	p < 0.001
Never married nor partnered	12.2	8.9	p < 0.05
<b>OF THOSE MARRIED OR PARTNERED</b>			
Spouse or partner’s education ever master’s degree or higher	71.0	60.7	p < 0.001
Spouse or partner with PhD	18.0	8.5	p < 0.001
Spouse or partner never worked full time	13.1	26.5	p < 0.001
Spouse or partner always worked full time	45.1	34.3	p < 0.001
Moved or changed jobs because of spouse or partner’s career	27.3	16.1	p < 0.001
Spouse or partner moved or changed job because of respondent’s career	41.1	59.7	p < 0.001
<b>OF THOSE WHO REPORTED CHILDREN ARE “VERY IMPORTANT” OR SOMETHING WOULD “LIKE TO HAVE”</b>			
Has children	76.6	80.9	p < 0.05
Postponed or did not have child because of own career	48.0	22.9	p < 0.001
Postponed or did not have child because of spouse’s career	11.6	17.2	p < 0.05

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

**TABLE A.6**

Percent Respondents Reporting Teaching Training Elements Available, Used, and Useful

	AVAILABLE	IF AVAILABLE USED	IF AVAILABLE AND USED USEFUL
Formal Instruction in Teaching	39.5	70.2	77.9
Formal Supervision and Evaluation of Teaching	39.3	66.6	75.8
Opportunities to Teach in Variety of Environments	37.4	68.7	86.9
Opportunities to Prepare and Deliver One or More Courses	58.8	73.4	89.1

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

**TABLE A.7 PART 1**

**Percent Rating Importance in Current Job**

VERY, SOMEWHAT, NOT, AND NOT APPLICABLE (NA) BY DISCIPLINE

	ANTHROPOLOGY				COMMUNICATION				GEOGRAPHY			
	VERY	SOMEWHAT	NOT	NA	VERY	SOMEWHAT	NOT	NA	VERY	SOMEWHAT	NOT	NA
<b>RELATED TO CORE PHD EDUCATION</b>												
Critical thinking	87	10	2	1	86	13	0	0	75	23	2	1
Data analysis / synthesis	78	17	4	1	69	27	3	1	71	22	6	1
Writing and publishing	70	19	9	1	59	24	14	3	63	19	16	2
Research design	55	30	13	2	38	32	24	6	46	28	21	5
<b>COMMUNICATION, TEAM WORK</b>												
Diversity	64	26	9	2	56	30	12	2	52	35	11	2
Interdisciplinary contexts	62	30	7	1	53	33	11	3	57	32	10	2
Team work	59	32	8	1	53	34	10	3	50	37	11	2
<b>OTHER PROFESSIONAL COMPETENCIES</b>												
Presenting	81	16	2	1	85	14	0	0	81	12	6	1
Grant writing	56	26	15	3	32	38	22	7	41	35	18	6
Managing people, budgets	43	35	17	5	36	35	21	8	35	41	18	6

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

**TABLE A.7 PART 2**

**Percent Rating Importance in Current Job**

VERY, SOMEWHAT, NOT, AND NOT APPLICABLE (NA) BY DISCIPLINE

	HISTORY				POLITICAL SCIENCE				SOCIOLOGY			
	VERY	SOMEWHAT	NOT	NA	VERY	SOMEWHAT	NOT	NA	VERY	SOMEWHAT	NOT	NA
<b>RELATED TO CORE PHD EDUCATION</b>												
Critical thinking	89	9	1	0	93	7	0	0	90	8	1	0
Data analysis/ synthesis	71	22	5	2	73	20	5	1	81	15	4	1
Writing and publishing	61	25	12	3	72	20	8	1	71	19	8	2
Research design	27	30	23	20	51	30	17	2	65	22	12	1
<b>COMMUNICATION, TEAM WORK</b>												
Diversity	51	37	9	3	44	43	11	2	49	38	12	2
Interdisciplinary contexts	45	38	13	4	49	30	18	2	49	36	13	3
Team work	39	40	13	8	44	35	18	3	52	33	12	2
<b>OTHER PROFESSIONAL COMPETENCIES</b>												
Presenting	85	13	1	0	83	15	1	0	79	19	1	1
Grant writing	33	39	20	8	37	41	19	3	49	30	19	3
Managing people, budgets	22	30	29	19	31	36	27	6	33	40	21	5

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

**TABLE A.8 PART 1**

**Percent Respondents Rating Quality of Training**

EXCELLENT (E), ADEQUATE (A), POOR (P), AND NOT APPLICABLE (NA), BY DISCIPLINE

	ANTHROPOLOGY				COMMUNICATION				GEOGRAPHY			
	E	A	P	NA	E	A	P	NA	E	A	P	NA
<b>RELATED TO CORE PHD EDUCATION</b>												
Critical thinking	78	20	2	0.3	78	22	0.4	0	80	18	2	0
Data analysis/ synthesis	56	38	5	1.4	62	33	4	0.4	67	26	5	2.4
Writing and publishing	26	42	30	2	28	47	25	0.9	27	47	24	2
Research design	34	44	21	1	40	46	12	3	41	44	12	2
<b>COMMUNICATION AND TEAM WORK</b>												
Diversity	33	43	18	6	33	40	21	6	34	45	18	3
Interdisciplinary contexts	37	38	20	5	36	37	23	4	51	36	11	2
Team work	18	34	38	10	20	41	30	9	20	46	27	6
<b>OTHER PROFESSIONAL COMPETENCIES</b>												
Presenting	29	52	17	2	41	43	13	3	51	42	6	0.8
Grant writing	26	42	30	2	3	23	63	11	17	37	38	7
Managing people, budgets	6	20	55	19	3	17	54	26	3	26	51	20

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

**TABLE A.8 PART 2**

**Percent Rating Quality of Training**

EXCELLENT (E), ADEQUATE (A), POOR (P), AND NOT APPLICABLE (NA), BY DISCIPLINE

	HISTORY				POLITICAL SCIENCE				SOCIOLOGY			
	E	A	P	NA	E	A	P	NA	E	A	P	NA
<b>RELATED TO CORE PHD EDUCATION</b>												
Critical thinking	84	15	2	0	79	20	1	0	74	25	1	0
Data analysis/ synthesis	63	30	4	3	60	32	7	1	68	28	4	0
Writing and publishing	26	42	30	2	28	44	25	3	31	41	27	0.3
Research design	23	43	12	22	40	43	15	3	51	39	10	0.5
<b>COMMUNICATION AND TEAM WORK</b>												
Diversity	26	41	20	13	20	45	25	10	26	43	25	6
Interdisciplinary contexts	31	36	20	12	27	36	29	8	28	33	31	8
Team work	6	21	31	42	13	30	37	20	25	33	33	9
<b>OTHER PROFESSIONAL COMPETENCIES</b>												
Presenting	35	49	13	2	31	52	14	2	34	50	15	0.8
Grant writing	19	31	42	5	10	33	52	5	13	32	52	3
Managing people, budgets	2	8	33	56	3	14	50	34	3	18	57	23

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

## APPENDIX 2:

# Survey Administration and Sample Limitations

### Survey Administration

Locating graduates six to ten years after they earn their PhD is difficult. CIRGE began with publicly available information about PhD recipients from the studied fields within the studied cohorts provided by participating universities. CIRGE gave this information to staff at the National Opinion Research Center (NORC), who searched the Doctorate Records File (DRF) to confirm each individual's eligibility for SS5.<sup>6</sup> Ultimately, CIRGE located reliable contact information for 6,670 doctorate holders confirmed by NORC to fit SS5 eligibility criteria. From this list, 3,025 PhD holders answered the CIRGE survey, yielding a response rate of 45%.

Using contact information for graduates that CIRGE collected, the survey administrator contacted sampled individuals up to six times (an initial contact and 5 reminders). The last reminder included a short, alternative survey that could be printed, filled out, and mailed to the survey center with a curriculum vitae. Most respondents (2,695) self-administered the survey on the web and 330 people mailed in the short, paper questionnaire. Response rates were similar in all disciplines (Table A2).

TABLE A2

### SS5 Response Rates by Discipline\*

Anthropology	46.2
Communication	46.3
Geography	49.1
History	45.2
Political Science	50.6
Sociology	47.0

Source: NORC special tabulation for CIRGE, *Social Science PhDs—Five+ Years Out*.

\* Exclusion from denominators of 258 cases with fields unspecified by NORC inflates discipline response rates above overall response rate.

### Sample Limitations

To evaluate the generalizability of findings from the SS5 sample, CIRGE commissioned NORC to use the *Survey of Earned Doctorates* to compare the SS5 respondents to the population of all PhD recipients in the six disciplines within the study time frame. Between July 1, 1995 and June 30, 1999, U.S. institutions awarded 15,677 doctorates in the six studied fields; the 65 institutions participating in SS5 awarded 10,882 (69%) of these PhD degrees. The SS5 sample contains 19% of all recipients of doctorates from U.S. institutions in the study disciplines and cohorts. Response rate differences across demographic characteristics paralleled patterns of non-response bias (noted in Part 1 of this report). For instance, the SS5 sample contains 17% of all men who earned a PhD in the study disciplines and time frame, but 19% of comparable women. Most importantly, the sample includes 21% of all PhDs who reported definite post-graduation plans for academic employment on the *Survey of Earned Doctorates*, but only 13% of all PhDs reporting definite plans for non-academic employment. Implications of this sample limitation include over-estimates of the proportion of sampled cohorts in academic positions and in tenured and tenure-track positions. (For more details on SS5 methods, please consult documents available on the CIRGE website.)

<sup>6</sup> Publicly available information is limited and graduates may prevent educational institutions from sharing their personal information.

## APPENDIX 3:

# Endorsements and Participating Institutions

### *Participating Universities*

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

### *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, Social Science Research Council

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Lori Homer, CIRGE's former Survey Director, and Rebecca Aanerud, CIRGE Associate Director from 2002-2006, performed work necessary for launching this study including input on funding the survey, coordinating with the professional associations and participating graduate deans, up-dating the survey instrument, searching for contact addresses, fielding the survey, and conducting initial data analyses. These contributions were essential to the survey's success.

Renate Sadrozinski contributed her expertise from prior national surveys throughout this project. She and Penne Karovsky fine-tuned the survey design and tested the on-line version, coded the open-ended responses, and trained the student assistants. Gerry Esterbrook set up our useful, user-friendly database of open-ended responses. Student assistant Claire McWilliams

aided Joe Picciano, CIRGE research consultant and co-author of this report, in his Sisyphean labors constructing and documenting the SS5 dataset. Graduate student research assistant Sheila Huang helped with survey design and participant recruitment. Victoria Babbit coded the open-ended questions. Timely contributions to data analysis and interpretation were made by graduate student researchers Victoria Babbit, Andrea Hickerson, and Karla Sclater.

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