
CHAPTER 1

Introduction

Gratitude is mostly due to the ways in which the Mellon grant impelled change. Signing on to the Mellon grant required faculty to reconsider their collective responsibilities and forced them to devise new requirements and monitoring procedures. Although impressionistic evidence will be cited, faculty and students will easily attest that the cultures of their graduate groups have changed with new expectations and sense of mission.

—Graduate dean of a participating university in 1996¹

When I began my grad career, there were formal steps early in the program, but there was no further program designed to encourage students to make progress in dissertation writing or to prepare them for professional work. The department began to have a more consistent program for encouraging progress in the early '90s. Perhaps a response to a Mellon Foundation grant.

—Student in English who began graduate school in 1985 and left in 2001

IN 1991, THE Andrew W. Mellon Foundation launched what would become the largest effort ever made to improve graduate education in the humanities in the United States. The Graduate Education Initiative (GEI) was “to achieve systematic improvements in the structure and organization of PhD programs in the humanities and related social sciences that will in turn reduce unacceptabl[y] high rates of student attrition and

¹ The quotations introducing this chapter and those that follow are drawn from annual reports sent to The Andrew W. Mellon Foundation on the Graduate Education Initiative and from the Graduate Education Survey (GES) of students. See Chapter 2 for detailed descriptions of the reports and the GES.

lower the number of years that the typical student spends working towards the doctorate.”² At the time, the humanities were, it is fair to say, uneasy not only because their central intellectual presuppositions remained in contention but also because their standing in American universities was uncertain.³

During the preceding decades, from the mid-1960s onward, “theory” in its many varieties had flourished in many fields of the humanistic disciplines and had also found advocates in some of the social sciences as well. Only departments of history, philosophy, and the “hard” social sciences remained relatively immune to these developments. Debates continued about the contributions various theoretical perspectives made to the interpretation of texts and evidence and the epistemological and political issues they raised. Inevitably, they also centered on the place of theory in graduate education, on what the humanities were for, what students should know, what skills they should command, and whether “the canon” should survive and if so, how it should be constituted. In the process, the graduate curriculum grew and became more diverse, not only in response to the succession of new theoretical perspectives being introduced but also because a multiplicity of new subject matters had emerged.⁴ By 1991, however, contention had mostly abated, although the objectives of humanistic inquiry and what students should be taught remained undecided.

In the preceding decades, other significant trends were also discernible. Interest in the humanities among undergraduates, as gauged by the percentage of students majoring in these fields, had dropped to a low of about 10 percent in the mid-1980s and rebounded very mildly to 12 percent in 1990s.⁵ The number of PhDs awarded in the humanities had fallen steadily from a high of 4,873 in 1973 to a low of 2,749 in 1988, a re-

² Andrew W. Mellon Foundation, “Foundation Announces a Major New Program in Graduate Education,” press release, March 25, 1991.

³ “Humanities and related social sciences” is so unwieldy a term that hereafter when we refer to the humanities, we intend to include the composite of fields being represented. These are art history, English, classics, comparative literature, all foreign languages, history, musicology, philosophy, and religion, along with anthropology and political science, two fields residing in the social sciences but parts of which (cultural anthropology and political theory) draw on methodological and theoretical perspectives from the humanities. The array of hybrid fields—such as medieval studies, Asian studies, Africana studies, women’s studies, and ethnic studies, with their strong multidisciplinary commitments—was already developing, but at the time these were not yet standard components of the humanities.

⁴ The state of play in the humanities at the time is well summarized in the essays in Alvin B. Kernan, ed., *What’s Happened to the Humanities?* (Princeton, NJ: Princeton University Press, 1997).

⁵ Kernan (1997), p. 248, Figure 1.

duction of 49 percent in 15 years.⁶ At the same time, intense competition for resources in universities required that graduate programs justify their value and utility. The humanities had a particularly difficult time satisfying demands that they prove they had both.⁷

Educating Scholars recounts the history of the GEI and seeks to gauge critically how effective it turned out to be. Intended as a prototype, the GEI was both a social experiment and a major research project. The GEI was not an effort to change the content of the curriculum. Nor was it an attempt to increase the number of students who took graduate degrees. It was decidedly not an effort to change faculty members' views about their disciplines or their research.

Rather, the GEI had other objectives, as the language of that official press release indicated. It sought specifically to improve the effectiveness of graduate education in the humanities, that is, to use available resources in such a way that larger numbers of scholars would be educated in briefer periods of time while maintaining or even improving the quality of the education being offered. Two measures of effectiveness, attrition rates and the average time it took for students to get the PhD, were selected as key indicators.

Over a 10-year period (1991–2000), the Foundation provided over \$58 million to 54 humanities departments at 10 major universities to support the departments' efforts. An additional \$22.5 million was provided to these universities in the form of endowment and challenge grants as the GEI ended to help them sustain the progress that had been made with the help of GEI grant funds. Including funds the Foundation provided in the form of planning grants and grants for data collection and data management, all in all the Foundation devoted almost \$85 million to supporting the GEI.

As we describe the GEI's successes and its failures, the influence of larger forces at work in graduate education at the time (and now) will become clear. The faltering job market and competition among departments for gifted students both affected the outcomes of the GEI. Inevitably, *Educating Scholars* is also a tale of unanticipated consequences that emerged as the intervention unfolded. Because the students who were the focus of the intervention would go on to lives after graduate school, the book also describes the careers new PhDs made as they began work

⁶ See "Doctorate Recipients in the Humanities, 1970–2007" in *Humanities Indicators, 2008* (Cambridge, MA: American Academy of Arts and Sciences). <http://www.humanitiesindicators.org>.

⁷ Lynn Hunt, "The Tradition Confronts Change: The Place of the Humanities in the University," in *The Humanist on Campus*, ACLS Occasional Paper 44, 1998, p. 3. <http://archives.acls.org/op/op44hunt.htm>.

in the academy, and it follows the histories of those who left graduate school without earning degrees.

This chapter first lays out the history of the Graduate Education Initiative, its rationale, and how it came into being. It reviews other interventions now under way and other research on related matters. Then it turns to the principal findings of our research, and finally it describes the plan of the book.

THE GRADUATE EDUCATION INITIATIVE: ITS HISTORY, RATIONALE, AND DESIGN

Worries about an array of issues in graduate education, including its slow pace, were brewing long before Bernard Berelson began research in the 1950s on the “controversial” state of American graduate education.⁸ The questions he addressed ranged from the fundamental, that is, what graduate education was for (to prepare teachers or researchers), to the more advanced, including the quality of institutions producing PhDs, the purposes of the dissertation, and the reasons why students take so long to earn their degrees. He also sought to determine whether there were going to be enough PhDs to teach the oncoming waves of students likely to enroll in colleges and universities in the future.

Berelson’s study was in a sense a grandparent of the GEI research. More directly ancestral was an important study of the current and future supply of PhDs by William G. Bowen and Julie Ann Sosa, *Prospects for Faculty in the Arts and Sciences*, published in 1989. Based on a careful analysis of evidence—including trends in faculty retirement, class size, and doctoral production—they projected a severe shortage of doctorate recipients in the arts and sciences who would be qualified to teach in the nation’s colleges and graduate schools.⁹ This shortage would be caused, they said, by a large number of anticipated faculty retirements, increases in college enrollments, and the rising nonacademic employment of new doctorate recipients. Moreover, Bowen and Sosa projected that the shortage would occur in all arts and science fields and would become serious in the humanities by the end of the 1990s.

In 1988, Bowen became president of The Andrew W. Mellon Foundation, which had a long-standing interest in the humanities in higher ed-

⁸ Bernard Berelson, *Graduate Education in the United States* (New York: McGraw-Hill, 1960), p. 1.

⁹ William G. Bowen and Julia Ann Sosa, *Prospects for Faculty in the Arts and Sciences* (Princeton, NJ: Princeton University Press, 1989).

ucation. Hence it was not surprising that he and Neil L. Rudenstine, then the executive vice president of the Foundation, would begin to think about how it might assist programs of doctoral education in the humanities and how the projected shortage of PhDs might be alleviated.¹⁰ To get a better fix on the state of graduate education, they undertook a detailed analysis of PhD production in the United States in the arts and sciences and their component fields. This resulted in a second important book, *In Pursuit of the PhD*.¹¹

Bowen and Rudenstine observed that the humanities, in comparison with the sciences and social sciences, were plagued by especially high attrition rates, which approached 50 percent or more, and by especially long time-to-degree (TTD), a shorthand term for the interval between the time students begin degree programs and the time they complete their degrees. (See Chapter 2 and Appendix C for various ways of measuring TTD.) By the late 1980s, median registered TTD in the humanities had risen to approximately nine years, even in some of the most highly regarded programs in the nation.¹²

High attrition rates and long TTD in the humanities, they concluded, resulted in part from the inadequate financial support graduate students received. They also concluded that simply increasing available funding was not likely to help much. Careful research on the outcomes of major multiyear national fellowship programs—including those sponsored by the Danforth Foundation, the National Defense Education Act fellowship program, the National Science Foundation, and the Woodrow Wilson National Fellowship Foundation, as well as the Mellon Foundation itself, all of which were focused on assisting individual graduate students with predictable long-term support—demonstrated that these programs had markedly “limited success . . . in reducing attrition and time-to-degree.”¹³ Put simply, despite these programs being highly competitive and supporting students with exceptionally impressive academic records, fellowship recipients did not have appreciably higher rates of completion than their classmates, nor did they have substantially shorter TTD.¹⁴

¹⁰ Bowen, an economist, had been president of Princeton University from 1972 to 1988. Rudenstine, an expert on English literature, had been provost at Princeton; after serving at Mellon from 1988 to 1991, he was president of Harvard University from 1991 to 2001.

¹¹ William G. Bowen and Neil L. Rudenstine, *In Pursuit of the PhD* (Princeton, NJ: Princeton University Press, 1992).

¹² *Ibid.*, Chapter 6.

¹³ *Ibid.*, p. 228.

¹⁴ *Ibid.*, Chapter 11. At the same time, the fellowship programs made important contributions to recruiting talented students to graduate study and to supporting them during its duration.

Other major fellowship programs provided funding not to students but to universities. These programs included the Ford Foundation's ambitious effort, begun in 1976 at six universities. It aimed at instituting a four-year PhD program, but it failed to produce the intended results at four of the six universities, and even at the other two the achieved reductions were slight.¹⁵ These findings were sobering and led Bowen and Rudenstine to think that neither funding students individually nor turning money over to universities without involving departments was a successful recipe for improving doctoral education in the humanities.

Their research also revealed that the scale of university departments, that is, the number of students in annual entering cohorts, significantly affected completion rates and TTD, independent of the financial assistance students received. For example, fellowship recipients who studied in smaller departments were on average more likely to complete their degrees and to do so more quickly than recipients of the same fellowships who studied in larger departments. Such differences were not attributable to differences in the quality of faculty in larger and smaller departments.¹⁶

The importance of scale implied much about the significance of departments in graduate training—for example, the connection of scale with the vitality of graduate-student life and the attention students received. In addition to scale, Bowen and Rudenstine's research pointed to the importance of departmental organization and culture. Among the obstacles for students, they cited unclear expectations about how long it "should" take to earn the degree, the absence of timetables, a proliferation of course options, elaborate and sometimes conflicting requirements, intermittent (or insufficient) advising and monitoring, and, in certain disciplines, disagreements among faculty members about epistemological fundamentals and thus about what doctoral programs should teach. If a serious attempt were to be made to increase the effectiveness of graduate programs, more financial support would be needed, and departments would need to reconsider the design and organization of their doctoral programs. These conclusions resulted in the GEI being focused on departments—a major departure from both individual fellowship support and support given to universities.

Furthermore, these programmatic changes were to be linked to funding decisions, so that students could be considered for funding if they met the expectations their departments had instituted, including time-

¹⁵ David Breneman later did a thorough review of the Ford program and noted the absence of any attention to attrition—in his view, an opportunity lost. See Bowen and Rudenstine (1992), especially pp. 212–14, on the Ford program.

¹⁶ *Ibid.*, pp. 146–47, 216.

tables for achieving specified steps toward the degree. Funding was to be “conditional,” not guaranteed; competition was to prevail among students. This, it was thought, would motivate all students, even those who failed to receive support.

Taken together, such changes, Bowen and Rudenstine reasoned, could reduce attrition (especially late attrition) and shorten average TTD. These are not simply matters of academic bookkeeping. Rather, high attrition rates and long TTD clearly countered the interests of degree seekers. It was less often recognized that they also countered the interests of universities. In both instances, individuals and institutions were making large investments in graduate education that were not yielding their desired outcomes. With the approval of the Foundation’s board of trustees, the decision was made to use Mellon’s resources to undertake an intervention that, if it proved successful, might be used by others seeking to improve the “effectiveness” of graduate programs. That the GEI might also increase the number of PhDs who graduated from leading programs would be beneficial as well, since such an outcome would contribute to solving the faculty staffing problem at U.S. universities that was projected to occur at the end of the 1990s. It would be “a sensible way to begin to prepare,” and even if these projections did not materialize (and we now know they did not), the GEI would nonetheless have highly positive outcomes.¹⁷ Furthermore, because making significant changes in the academy almost always takes time, it was anticipated at the outset that the GEI would operate for 10 years, that is, unless it became evident after five years that it was going seriously awry.

The Foundation invited 10 universities to participate in the GEI. All were promised annual grants that would be applied to increasing financial aid for students in departments they chose and for other improvements aimed at reducing attrition and increasing completion. For their part, the universities and the departments would have to agree to propose plans for redesigned graduate programs.

The recipient universities were selected using one apparently simple criterion. They were to be the 10 universities that had attracted the largest number of winners of the Mellon Foundation’s much-sought-after portable fellowships in the humanities. This single criterion was in fact highly correlated with important institutional attributes. It reflected the preferences of carefully vetted Mellon fellows who, owing to the terms of

¹⁷ *Ibid.*, p. 289. That jobs remained scarce throughout the period of the GEI was a source of some resentment among students and faculty members who believed the Bowen and Sosa projections and were disappointed to find they did not prove out. “Why hurry” they countered, “when the jobs aren’t there?” In Chapter 9, we review the validity of this conclusion and find it erroneous.

the fellowship, could choose to go to any university that would accept them, since their tuition and living costs were covered.¹⁸ The fellows' choices were to serve as a "market test." Excellent students would "vote with their feet" and select the universities they considered most desirable for graduate study. The 10 universities were the universities of California at Berkeley, Chicago, Michigan, and Pennsylvania, and Columbia, Cornell, Harvard, Princeton, Stanford, and Yale universities. That these universities were also generally thought to have first-rate faculties, demanding programs of study, and alumni who had contributed significantly to their disciplines was consistent with using the Mellon fellows' preferences in choosing the GEI participants. Although the graduates of these 10 universities (and of the three added for the purposes of having a control group in the study) seemed to constitute a small slice of those earning doctoral degrees in the humanities, this was not the case. These 13 institutions graduated 18 percent of all PhDs awarded in the humanities, far more than their share of the total number of doctoral programs.

Once selected, the participating universities were invited to nominate four to six departments in the humanities to receive GEI awards. The universities and departments that agreed to participate in the GEI were asked to determine not only how they wished to use the funds the Foundation awarded to them but also how their programs should be changed. Such changes were to be tailored to the needs of the departments and their universities. Inasmuch as most participating departments developed their own strategies (or "treatments") to improve their PhD programs, it was understood that treatments would vary considerably across departments.¹⁹ Moreover, it was understood that they would also vary over time, as strategies that appeared to be working would be continued, those that appeared counterproductive would be discontinued, and new strategies might be adopted. Giving the participants such latitude was consistent with the Foundation's general policies of not interfering with grantees, but, as we shall indicate, the GEI was far from a uniform intervention. Rather it involved a great array of programmatic changes, thus making an assessment of its effects quite problematic.

However, the programmatic changes the departments and universities undertook, although highly varied, had to be consistent with the general objectives of the GEI and its guidelines. Putting a high priority on im-

¹⁸ The Mellon Fellowships in the Humanities provided multiyear support but did not cover all years in graduate school. Universities usually supplemented them so that fellows could count on full support.

¹⁹ In Chapter 3 we note that the plans submitted by all departments at certain universities were the same, while at other universities they varied. We assumed that university administrators in the first instance were more directive than in the second.

proving effectiveness, lowering attrition, shrinking TTD, redesigning programs, and funding graduate students in line with helping them move expeditiously toward completion of their degrees were not matters for negotiation. Furthermore, agreeing to provide data annually on a predetermined set of indicators was a quid pro quo for participation. At the same time, it was understood that participants retained control over what was taught, the criteria to be used in judging students' work, how professors would supervise their students, and how university administrators were to decide on policies relevant to the GEI.

Did these terms undermine the independence of the universities involved? Were they excessively prescriptive, even "bullying," as foundations are sometimes accused of being?²⁰ We think not. Not only was the Foundation flexible in approving university decisions that did not quite comply with the "rules" (for example, permitting fellowships to be awarded after the sixth-year deadline if students had to master multiple languages or spend long periods on the field), there was no compulsion that departments participate—although the desire to improve the funding students could receive was surely a powerful incentive to universities and departments to comply. It will become evident that some faculty members continued to be at best ambivalent about and at worst resistant to the objectives of the GEI and the means of achieving its objectives—signs of the freedom faculty members enjoyed in pursuing their work as they saw fit. In light of a widespread sense that foundations use their resources to achieve ends to which they (rather than their grantees) are committed, calling attention to the very considerable leeway the grantees had in designing the GEI according to their particular requirements, and the primary roles institutions and departments had in how it functioned, seems to the point.

The details of data collection for the GEI are reviewed in Chapter 2. Since they are an integral part of the GEI's history and rationale, we also summarize them here. From the beginning of the GEI, measurement of the intervention's effects would be central to the enterprise. The Foundation wished to keep abreast of how the intervention was proceeding so that adjustments, if needed, could be made along the way. It also wished

²⁰ Charles T. Clotfelter, "Patron or Bully? The Role of Foundations in Higher Education," in Ray Bacchetti and Thomas Ehrlich, eds., *Reconnecting Education and Foundations: Turning Good Intentions into Educational Capital* (San Francisco: Jossey-Bass, 2006), pp. 211–48. See also the early critique of private foundations by Waldemar A. Nielsen, *The Big Foundations* (New York: Columbia University Press, 1972). A recent book in a similar genre is Bill Somerville with Fred Setterberg, *Grassroots Philanthropy: Notes of a Maverick Grantmaker* (Berkeley, CA: Heyday, 2008). A more sober essay on foundations is Joel L. Fleishman, *The Foundation: A Great American Secret—How Private Wealth Is Changing the World* (New York: Public Affairs, 2007).

to let the participants know how they were doing and, more important, wanted them to gather relevant information so that, when the time came for an assessment of the GEI's successes and failures, others in the future might benefit from what had been learned.

The assessment would examine the effects of the GEI on attrition and TTD, as well as changes in the organization of graduate programs that might be responsible for any observed effects. With this in mind, annual data were collected by the institutions and provided to the Foundation on all PhD students that entered the 54 departmental PhD programs that the 10 universities had chosen as participants. Descriptive data were collected annually on every student's progress in each of these departments until each of them had graduated or terminated his or her studies. The data collection covered the 10 years prior to the start of the GEI, during its tenure, and up through 2006. Information, made suitably anonymous by using identification numbers in place of the names of entering students, was gathered on their background characteristics (their Graduate Record Examination [GRE] test scores, gender, race and ethnicity, citizenship, and prior master's degrees). The universities also reported on the types of financial support that students received each year they were pursuing the doctorate and their academic status each year (left, continued, or graduated).

Moreover, soon after the GEI began, the Foundation realized the need for data on a set of control departments (in order to determine whether changes observed during the GEI period were in fact attributable to the Initiative or were the result of events affecting other departments and universities as well). Similar data were then collected for all students who were enrolled in PhD programs at a set of 47 control departments during the same period. Some of these control departments were at the 10 universities at which the GEI was already in place; the rest were at three other universities that were of comparable academic standing but had not received funding from the GEI: the University of California at Los Angeles, the University of California at San Diego, and the University of North Carolina at Chapel Hill.

In 2002 and 2003, having assembled institutional data on students' progress over two decades, along with the often-revealing annual reports from each participating department, it became abundantly clear to the Foundation that these in and of themselves were insufficient for understanding how the GEI worked. The decision was made to conduct a survey (the Graduate Education Survey [GES]) to obtain the views of all doctoral students who began their study in departments participating in the GEI and in control departments between 1982 and 1997. It would tell far more than we knew about students' experiences in graduate school, their assessments of the education they received, and their employment after

leaving graduate school, either with the degree or without it. Not only did the GES achieve a remarkably high response rate of 74 percent, it provided data on aspects of doctoral education never studied before on such a scale or with such precision.

RECENT RESEARCH AND EFFORTS TO IMPROVE GRADUATE EDUCATION

The GEI and the research on which this book is based did not occur in a vacuum. Earlier research (for example, on rates of attrition and its determinants as well as on TTD) influenced the GEI and its design. Similarly, in the 15 years since the GEI began, some of the other efforts made to improve graduate education have been shaped by the GEI. To place this book in context, we briefly summarize those interventions and publications most pertinent to the GEI's objectives.

Maresi Nerad and her colleagues, first at the University of California at Berkeley and later at the University of Washington, have been studying the post-PhD employment of degree recipients, potential improvements in doctoral education throughout the period, and the opinions of former students about the value of their graduate programs, using administrative data, surveys of doctoral recipients, and interviews of students, faculty, and administrators.²¹ Their work has highlighted the important roles played by financial support, department culture, advising, and the setting of clear expectations for students. Their surveys of doctoral recipients in a number of fields have provided information on the life-cycle employment patterns of doctoral recipients, although so far their publications have not reported on the educational and employment experiences of doctoral candidates who failed to earn their degrees.²²

²¹ See, for example, Maresi Nerad, *Doctoral Education at the University of California and Factors Affecting Time-to-Degree* (Oakland, CA: Office of the President of the University of California, 1991); Maresi Nerad and Debra Miller, "Increasing Student Retention in Graduate and Professional Programs," *New Directions for Institutional Research* 92 (Winter 1996): 61–76; and Nerad and Miller, "The Institution Cares: Berkeley's Efforts to Support Doctoral Students in the Humanities and Social Sciences with Their Dissertations," *New Directions for Higher Education* 99 (Fall 1997): 75–90.

²² Maresi Nerad and Joseph Cerny, "From Rumors to Facts: Career Outcomes of English Ph.D.s," *Communicator* 32 (Fall 1999): 1–11; Nerad and Cerny, "Improving Doctoral Education: Recommendations from the 'Ph.D.s Ten Years Later' Study," *Communicator* 33 (March 2000): 6; Nerad and Cerny, "Postdoctoral Appointments and Employment Patterns of Science and Engineering Doctoral Recipients Ten-Plus Years after Ph.D. Completion: Selected Results from the 'Ph.D.s Ten Years Later' Study," *Communicator* 35 (August–September 2002): 1–11; and Renate Sadrozinski, Maresi Nerad, and Joseph Cerny, *PhDs in*

A number of economists, including the first author of this book, have tried to model formally the role that financial factors play in influencing attrition and TTD and then to estimate the magnitudes of these relationships.²³ Empirical studies have also been undertaken on graduate education in the United States and abroad.²⁴ *The Education of Historians for the Twenty-First Century*, a comprehensive study conducted by the American Historical Association's Committee on Graduate Education, includes the results of a survey of graduate history departments.²⁵ The findings the committee reports mirror many of those in this book, concerning, for example, predoctoral examinations, program size, funding, and departmental culture, while also taking up subjects we do not address, such as professionalization and premature professionalization of graduate students, graduate assistants and unions, new technologies, teacher training, and interdisciplinarity and theory.

Other research has focused particularly on attrition and its causes. Chris Golde's studies draw on interviews, specifically with 68 doctoral students who failed to complete their degrees. Eighty-five percent of them studied in four departments (biology, English, geology, and history) at one major university.²⁶ In one paper, she describes interviews with three students in great detail and points to the effects of students' failure to be integrated into the academic and social life of their departments on their departures from graduate school.²⁷ Advising, or lack of it, also played an important role in each case.

Barbara Lovitts's work on the causes of attrition draws attention to the social structure of graduate programs and especially to the lack of opportunities students have for integration into their departments. She also

Art History: Over a Decade Later (Seattle, WA: Center for Research and Innovation in Graduate Education, 2003).

²³ Ronald G. Ehrenberg and Pangiotis G. Mavros, "Do Doctoral Students' Financial Support Patterns Affect Their Times-to-Degree and Completion Probabilities?" *Journal of Human Resources* 30 (September 1995): 581–609.

²⁴ Eskil Wadensjö, "Recruiting a New Generation," in Lars Engwall, ed., *Economics in Sweden: An Evaluation of Swedish Research in Economics* (London: Routledge, 1992), pp. 67–103. See p. 83 for information on the very, very long average TTD in Sweden in that field.

²⁵ Thomas Bender, Phillip M. Katz, Colin Palmer, and the Committee on Graduate Education of the American Historical Association, *The Education of Historians for the Twenty-First Century* (Urbana: University of Illinois Press, 2004).

²⁶ Chris M. Golde, "How Departmental Contextual Factors Shape Doctoral Student Attrition," PhD dissertation, School of Education, Stanford University, 1996, and Golde, "The Role of the Department and the Discipline in Doctoral Student Attrition: Lessons from Four Departments," *Journal of Higher Education* 76 (November–December 2005): 669–700.

²⁷ Chris M. Golde, "Should I Stay or Should I Go? Student Descriptions of the Doctoral Attrition Process," *Review of Higher Education* 23 (Fall 2000): 199–227.

contents that high attrition rates are not due to admission of students incapable of earning the degree. A sociologist, Lovitts surveyed over 800 students at two universities, including those who completed degrees and those who had not. She also carried out interviews with those who left school and with a sample of faculty members.²⁸ In subsequent research, she focused on obstacles students encounter in writing the dissertation and stressed the importance of faculty members making explicit to their students the implicit criteria used in assessing dissertations.²⁹

In a study of doctoral students at 21 universities, Michael Nettles and Catherine Millett surveyed 9,000 who had completed at least a year of doctoral study in 1997, and they combined these data with entries in dissertation abstracts and the Survey of Earned Doctorates and with data from the 21 universities to determine which of these students had earned degrees by 2001.³⁰ Based on their survey data, they identified a number of the themes that are addressed in this volume: the role of financial support in completion of the degree, the importance of socialization, students' research productivity while enrolled in doctoral programs, TTD, completion rates, and group differences in outcomes. Students who had dropped out prior to the start of their second year were excluded from Nettles and Millett's sample, and thus they could not analyze the determinants of early attrition. The study provided no information on the experiences students had after completing their degrees or after leaving graduate school.

With the support of a number of private foundations, the National Research Council (NRC) and the Council of Graduate Schools (CGS) have been deeply involved in research on doctoral education. As earlier worries about long TTD began to be overshadowed by or joined with concerns about high rates of attrition, CGS's annual meetings became a venue for presentations of research on attrition and its relationship to admissions.³¹ These concerns led to the organization of two national workshops on the study of attrition and the factors that might contribute to it. The first, sponsored by the NRC in 1996, was followed quickly by the second, held in 1997 and sponsored by the National Science Foundation.³² A third workshop was part of the process of designing the CGS's PhD

²⁸ Barbara E. Lovitts, *Leaving the Ivory Tower* (Lanham, MD: Rowman and Littlefield, 2001).

²⁹ Barbara E. Lovitts, *Making the Implicit Explicit: Creating Performance Expectations for the Dissertation* (Sterling, VA: Stylus, 2007).

³⁰ Michael T. Nettles and Catherine M. Millett, *Three Magic Letters: Getting to Ph.D.* (Baltimore, MD: Johns Hopkins University Press, 2006).

³¹ Peter Diffley, "Selection and Attrition," *Communicator* 38 (November 2005): 3–8.

³² National Research Council, *The Path to the Ph.D.: Measuring Graduate Attrition in the Sciences and the Humanities* (Washington, DC: National Academies Press, 1996), and Alan I.

Completion Project; it focused on identifying the data necessary for studying and monitoring attrition and for a better understanding of factors associated with it.³³ A fourth workshop, organized in 2005 by the Center for Education at the NRC, concentrated exclusively on the effects of financial aid on the quality of doctoral education received by students in science, technology, engineering, and medicine.³⁴

Intended to answer the fundamental question of the purpose served by graduate education, the Carnegie Initiative on the Doctorate (CID) was a five-year project sponsored by the Carnegie Foundation for the Advancement of Teaching and paid for by the Atlantic Philanthropies. Begun in 2002, the CID encouraged 84 departments in six fields (chemistry, education, English, history, mathematics, and neuroscience) to reconsider the functions served by graduate education and to align them more effectively with the requirements they impose in graduate training and the practices they follow. Beginning with the supposition that the fundamental purpose of doctoral education was to create *stewards of the discipline*—people “who will creatively generate new knowledge, critically conserve valuable and useful ideas, and responsibly transform those understandings through writing, teaching and application”—the participating departments were asked to think critically about what they do and why they do it, and to identify changes that should be made to educate stewards of their disciplines and to build “intellectual communities.”³⁵ Furthermore, they were asked to institute program changes consistent with their goals and to devise and assess the changes they made that would lead to strategies to improve doctoral education both in participating departments and more generally. One important product of the CID is a set of critical essays by distinguished leaders in each of the six fields on their views about the future of doctoral education and its evolution.³⁶ Future publications from the Carnegie Foundation will summarize the results of this effort.

Rapoport, *Summary of a Workshop on Graduate Student Attrition* (Washington, DC: National Science Foundation, December 1998).

³³ Council of Graduate Schools, *Ph.D. Completion/Attrition Workshop* (Airlie, VA, April 2003).

³⁴ National Research Council, Center for Education, Workshop on “STEM Doctoral Students: How Finance Mechanisms Influence the Quality of Their Education,” Washington, DC, June 22, 2005.

³⁵ Chris M. Golde, “Preparing Stewards of the Discipline,” in Chris M. Golde and George E. Walker, eds., *Envisioning the Future of Doctoral Education: Preparing Stewards of the Discipline* (San Francisco: Jossey-Bass, 2006), pp. 3–22.

³⁶ Chris M. Golde and George E. Walker, eds., *Envisioning the Future of Doctoral Education: Preparing Stewards of the Discipline* (San Francisco: Jossey-Bass, 2006).

Finally, in 2002, CGS began its PhD Completion Project. The fundamental assumptions on which this project is based are (1) that the vast majority of students entering PhD programs have the academic ability to complete degrees and (2) that the high attrition rates endemic in graduate education are to a large extent due to institutional factors, that is, to those which administrators and faculty members can control. These include the selection and admission of students, mentoring and advising, financial support and its structure, programs' social environments, research experiences, and curricular processes and procedures—many of these being factors that the GEI also emphasized. The CGS project has been supported at various stages by the Ford Foundation, the National Science Foundation, Pfizer Inc., and the Alfred P. Sloan Foundation.

Unlike the GEI, which focuses on departments, the focus of the CGS project is on graduate schools and graduate deans and the roles that they can play in fostering intervention strategies to improve doctoral education in the fields of science, engineering, and mathematics as well as in the humanities and social sciences. A total of 45 universities are involved either in creating intervention strategies and pilot programs, in evaluating the impact of these programs, or as research partners.³⁷ One recent publication from the CGS project presents data on 10- and 7-year completion and attrition rates based on data submitted by 24 of the participating universities on cohorts of students who entered their PhD programs between 1992–93 and 1997–98.³⁸ A second publication summarizes what is known about attrition and completion and addresses policies that might be effective in reducing the former and increasing the latter.³⁹ Evidently, interest in the effectiveness of doctoral programs and in the broader issue of their objectives has only increased since the beginning of the GEI; much remains to be learned about these subjects.

SUMMARY OF PRINCIPAL FINDINGS

This volume describes the effects of the GEI on students' careers in graduate school, on the progress they made (or did not), and on the gradu-

³⁷ The project, which has been shepherded by CGS President Debra Stewart, is described at <http://www.phdcompletion.org> and in Daniel D. Denecke, Helen S. Frasier, and Kenneth E. Redd, "The Council of Graduate Schools' Ph.D. Completion Project," in Ronald G. Ehrenberg and Charlotte V. Kuh, eds., *Doctoral Education and the Faculty of the Future* (Ithaca, NY: Cornell University Press, 2008), pp. 35–52.

³⁸ Council of Graduate Schools, *Ph.D. Completion and Attrition: Analysis of Baseline Demographic Data from the Ph.D. Completion Project* (Washington, DC, 2008).

³⁹ Council of Graduate Schools, *Ph.D. Completion and Attrition: Policy, Numbers, Leadership, and Next Steps* (Washington, DC, 2004).

ate programs of the participating departments. Drawing on the data the 13 universities provided and on students' responses to the GES, we also take up the effects on their careers during and after graduate school of three large-scale developments affecting graduate education in the humanities: the deteriorating job market, the intensification of competition among graduate departments for students deemed most promising, and changes in financial-aid regimes. When our analyses draw on statistical models, technical details are relegated to an appendix. The book is intended to be accessible to a broad range of readers interested in the humanities and graduate education while also meeting appropriate standards of analytic rigor.

In describing our findings here and in the remainder of the book, readers will note that we often use causal language in describing the outcomes of statistical analysis; for example, we remark that increased financial aid "led to" reductions in attrition. Such statements are, strictly speaking, probabilistic, not causal, although in places we do try to infer causality. Readers who are unfamiliar with this kind of analysis may find it helpful to remember that high correlations do not definitively prove that a causal relationship exists, but that the chances it does are great if we have appropriately modeled the process that led to our estimating equations.

The book addresses a host of questions about doctoral education in the humanities in major universities and the students who study for the doctoral degree. In Chapter 12, we draw together the main findings reported in the chapters that follow. Here we report only those we think are of particular importance.

First, did the GEI and the changes in graduate programs that it stimulated produce higher rates of completion and lower rates of attrition? Based on careful statistical analysis, the answer is yes. Completion rates rose and attrition rates declined, on average. However, changes we observed in the GEI departments can be understood properly only if we compare them to changes occurring at the same time in departments we chose to serve as controls. It turned out that changes in the GEI departments were only modestly better than those in the control departments. We also found that some GEI departments did very well on these measures of effectiveness and some did quite poorly, raising questions about why the GEI was so effective in some departments but not in others. Did students who earned degrees under the GEI regime earn them more quickly on average than those in control departments? They did, but again the observed improvements were small. As we found with respect to rates of completion and attrition, average TTD dropped quite dramatically in some departments but not at all in other departments. It is clear that the next order of research business is additional analysis of the histories of those departments that achieved major improvements along

with those that retrogressed. In short, the GEI was associated with improved completion rates, lower attrition rates, and shorter TTD, but such improvements were not large and were not uniformly distributed.

What did improved financial support do for graduate students? We found that more support was associated with increased probabilities of students completing their degrees; furthermore, when we examined the outcomes of different patterns of financial support (how much of which kinds of support students receive and when), we also found that more support was associated with higher rates of completion. However, even students given the most generous financial support (holders of fellowships for many years) had high attrition rates. Hence attrition is not due exclusively to inadequate financial aid. Furthermore, we found that improved financial support clearly reduced early attrition. (By early attrition, we mean the number of students leaving between their first and fourth years.) However, we did not find that reduced attrition rates were matched by higher completion rates. Instead we found that attrition rates increased among students who were in or beyond their fifth year of graduate study. This is directly contrary to the GEI's intent of reducing attrition overall and particularly of reducing late attrition, which is costly to both students and institutions. Furthermore, we found that the percentage of students who neither graduated nor left school after their fifth year of study increased markedly. What could account for this altogether unanticipated outcome?

It would appear that the increasing prevalence of guaranteed multiyear funding (financial aid that students are promised for their first three to five years) reduced early attrition but did not increase rates of completion, nor did it shorten TTD. It is important to note that guaranteed funding is not consistent with the GEI policy of making financial aid past the first year conditional on meeting timetables—a more demanding requirement than simply achieving “satisfactory performance.” Ironically, there is evidence that the GEI contributed to the spread of guaranteed packages—a second unanticipated consequence observed in our research.

The GEI had as one of its objectives the reduction of heavy teaching obligations, so common among graduate students in the humanities. Did it have this effect? It did. During the GEI, the probabilities that students would serve as assistants for six semesters or more were significantly reduced, falling more precipitously in GEI departments than in the controls. But does lengthy service as a teaching assistant (TA) contribute, as many observers think, to long TTD? It does. Serving as an assistant for six semesters or more delays completion of the degree; but, on average, the majority of students teach for fewer semesters. Moreover, in a finer-grained analysis in which we compared serving as a TA to various other financial-aid arrangements, we found that the effects of being a TA were

more complicated. They depend on how long students teach, the extent and nature of their duties, what other types of financial support they receive, and in what sequence they receive that support.

We noted that attrition rates fell among students early in their graduate careers, but climbed later on. At the end of 10 years, 40 percent of students who began graduate study had left without degrees. This suggests that considerable attrition occurs between students' 5th and 10th years. Members of this group, of course, are the much-written-about ABDs, or those leaving with "all but dissertation." Whether one describes them as numerous or not depends on the value put on students' time, the education they receive during graduate study, and the institutional resources they consume. Our research indicates that attrition rates overestimate the actual extent of attrition: 31 percent of those counted as having left graduate school earned PhDs or other professional degrees, and an additional 50 percent finished with master's degrees—some no doubt awarded "in course" (automatically awarded for passing candidacy) but valuable nonetheless on the job market. Moreover, it is no surprise that, given their abilities, the employment experiences of those who leave graduate school depart substantially from the stereotype of the unemployed or taxi-driving graduate-school dropout. Three years after leaving school, their employment rate topped 96 percent, and most had professional or managerial jobs.

Finally, in exploring the employment of those who received degrees, the deteriorating job market is in clear evidence in the employment histories of successive cohorts of PhDs. Fewer and fewer of them received tenure-track positions upon leaving graduate school. However, the majority of those who started out in non-tenure-track positions found tenure-track positions in three years' time, and the chances of their doing so have not changed with time. However, the combination of shrinking probabilities of finding tenure-track jobs immediately and the stable probabilities of moving into them later means that successively smaller proportions of graduates managed to get on the tenure track three years after earning their degrees.

Are those who finish their PhDs quickly more likely to get better jobs? Or are PhDs in these fields like good wine, in that they take time to become fully mature and productive scholars? Again, this apparently simple question does not have a simple answer. Students who finish their degrees in five or six years do no better in the job market, and are no more likely to get tenure-track jobs, than those who finish in seven years. However, PhDs in the humanities (unlike good wine, apparently) do not improve after seven years: those who finished in more than seven years were less likely than faster completers to obtain tenure-track positions.

And finally, did the programmatic changes associated with the GEI make any difference in completion and attrition rates and TTD? They did, but, taken one at a time, their effects were not strong. At the same time, students who reported on the GES that departmental expectations were clear—that they were told how long the degree should take and what requirements they must meet—were significantly more likely to finish. By contrast, those who reported that their departments' expectations were unknown or ambiguous were more apt to leave. Furthermore, the data speak to the significant role faculty members play in students' careers. The presence of particular faculty members influences where students elect to study; students who reported that a faculty member was interested in their work had a higher probability of finishing, as did those who benefited, in their view, from good advising. Conversely, those who said advising was poor were more apt to leave. Were these instances of retrospective rationalization or of truth telling? Probably some of each.

A READER'S GUIDE TO *EDUCATING SCHOLARS*

Chapter 2 presents the data on which this study is based and the methods of analysis that we have used. The institutional and survey databases are described as are various measures and their relative benefits. (A listing of the variables gathered from the institutions is provided in Appendix A, a copy of the survey instrument is provided in Appendix B, and a detailed description of the measures, their calculation, and recommended uses is given in Appendix C.) Chapter 3 introduces the departments that participated in the GEI and were central in the intervention. It shows how similar they were at the outset in certain respects and how much they differed in others. It also recounts in some detail the history of the GEI in six illustrative departments. Since most departments were given considerable leeway in introducing changes (what we later call "innovations") they themselves considered most useful, and since they were encouraged to emphasize in their annual reports the pitfalls they encountered, we had the opportunity to determine whether the GEI "worked" and which innovations among many the departments made had actually improved effectiveness.

Chapter 4 reports the outcomes of our analyses of the GEI's influence on rates of attrition and completion and on TTD. Since some of the control departments were located at the same universities as the treatment departments, we were concerned that "treatment contamination" might have occurred. Were control departments at the 10 universities subject to some of the same influences as the treatment departments, and was there

evidence that the control departments emulated the treatment departments? If so, our findings on the effects of the GEI would understate its real influence. We address that issue in this chapter.

Patterns of financial support received by students, both prior to and during the GEI, are the subject of Chapter 5. The roles that different types of financial support (fellowships, assistantships, and other assistance) play in determining attrition and completion probabilities are analyzed in this chapter.

In Chapter 6, we turn to analyses of the survey data on students' appraisals of their PhD programs. We use these data to analyze the effects the GEI had on students' perceptions of their departments. The GES data are then merged with data provided by the institutions (data that are analyzed in the previous two chapters) in order to identify those characteristics of graduate programs that influenced the probabilities that students would leave or graduate.

We find that students' attrition and completion probabilities depend not only on the financial support that they receive but also on a group of programmatic attributes that presumably can be changed at relatively low cost. Hence the analysis in this chapter provides a road map of relatively inexpensive changes that can be made by those interested in reducing students' rates of attrition and increasing their rates of completion.

Chapter 7 addresses a matter of continuing concern among students, their professors, and administrators. Do marriage and childbearing affect the chances men and women have of completing their degrees and of doing so promptly? Although these questions are not at issue in the GEI, they are important. As a result, we made sure the student survey would yield data on students' marital status when they entered graduate school and whether they had children at the time. In light of the increasing numbers of women earning PhDs in all fields and their very significant representation in the humanities, having an understanding of the relationships linking gender, marital status, and parenthood and the collective impact of all three on completion and TTD is likely to become increasingly important in the years ahead. Gender differences on average favor men, but we find these differences are due solely to the fact that married men do better than single men and single women. Marriage benefits men but does not do the same for women.

Chapter 8 presents data on attrition and its timing. Drawing on our survey data, we explore the reasons why it occurs and its effects on those who experience it. As far as we are aware, these data on post-attrition educational and occupational achievement of former graduate students are unique. We describe the reasons they gave for leaving graduate school and what happened to them afterward. Of some interest is that the oc-

cupational achievements of those who left doctoral programs long after having begun are no worse or better than the achievements of those who left early on.

The early-career outcomes of PhD recipients in the humanities are addressed in Chapter 9. It examines the determinants of PhDs' chances of getting on the tenure track immediately after earning the degree, including the roles played by TTD and having published during graduate school. Having published increases a PhD's chances of getting a tenure-track position within three years of the degree. But taking as long as eight years to get the degree (or longer) has the opposite effect; it reduces the chances of getting a tenure-track position within three years of graduation.

Since a prime goal of PhD programs is to prepare graduate students to contribute to the production of knowledge, Chapter 10 analyzes the publication records of PhDs in the humanities while they were in graduate school and during their early careers. Not explicitly part of the GEI, the extent to which students publish is nonetheless of interest in light of its possible contribution to long TTD. We found variation in rates of publication among ethnic and racial groups as well as between U.S. citizens and foreign-born students, and we provide some explanations for them.

Chapter 11 deals with the challenges encountered in implementing and evaluating the GEI. We have learned more than we anticipated about how interventions in graduate education should be introduced and about some of the pitfalls that develop in the process. The wisdom we have gleaned is summarized for those who seek to make changes of the sort that this book describes.

The concluding chapter, Chapter 12, summarizes our findings about the effects of the GEI and the lessons they hold more generally for doctoral education in the humanities. It highlights the implications our findings have for future efforts to improve graduate education, not only in the humanities but in other fields, and for attempts to evaluate them.