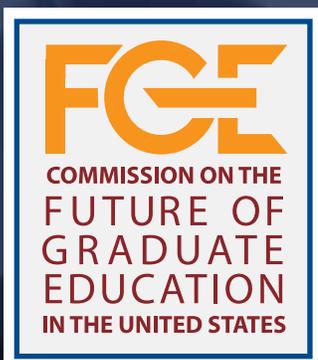


The Path Forward

The Future of Graduate Education in the United States

Executive Summary



Finding innovative solutions to many of the challenges facing the United States and the world in the 21st century will depend upon a creative, knowledgeable, and highly skilled workforce. The application of knowledge and skills to these challenges will help maintain our country's future economic prosperity and growth, foster social well-being, and assure our leadership position in the global economy. Undergraduate education is important to the creation of a stable economy because it provides students with foundational knowledge and work skills and prepares college graduates for a wide range of employment options. But it is graduate education that provides students with the advanced knowledge and skills that will secure our future intellectual leadership in the knowledge economy.

Our key assumption is that the competitiveness of the United States and our nation's capacity for innovation hinge fundamentally on a strong system of graduate education.

The U.S. graduate education system has served our nation well. But the system also faces considerable challenges. Many undergraduate degree holders who have the ability to obtain a graduate degree never enroll in a graduate program, and many who do enroll leave without a degree. The demographics of tomorrow's domestic population eligible for graduate study will look very different from today's, with possible implications for how graduate study is structured, supported, and evaluated. Other nations are moving decisively to build strong graduate programs to attract the world's best students whose interest in U.S. graduate study we have long taken for granted.

Areas of Vulnerability

Graduate School Enrollment – Who Enrolls?

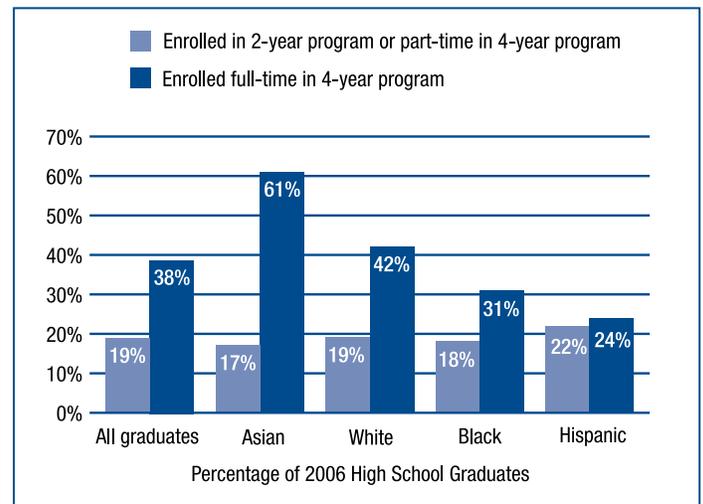
Overall enrollment in colleges and graduate schools continues to increase, but the gains have not kept pace with the increase in the general population of individuals of college age. Growth in graduate school enrollment also is complicated by the dropout problem at both the high school and undergraduate levels. Among those who do complete high school, data indicate that only slightly more than half enroll in some type of postsecondary education, and great disparities remain in enrollment levels by ethnicity and race. While the majority of Asian and White non-Hispanic high school graduates enroll in some type of college, less than half of Black and Hispanic high school graduates continue on to either a 2-year or 4-year college.

Changing U.S. Demographics for Graduate Education

The U.S. population is diverse and continues to grow even more so. A number of emerging sociological and economic forces will present challenges to the entire U.S. educational system, including graduate education.

- **Demographic shifts** are likely to result in a population with less education than today and lower math and reading skill levels. As a result, the population of domestic students eligible to pursue higher education is likely to become more diverse but possibly less academically skilled.

Figure 1. Who goes to college?



Source: Davis, W. J., & Bauman, K. J. (2008). *School enrollment in the United States: 2006*. Washington, DC: U.S. Census Bureau.

- **International migration** will account for more than half of the nation's population growth by the year 2015, according to U.S. Census Bureau estimates. More first-generation college students will emerge from this pool, and many are likely to require additional educational preparation.
- **The number of "nontraditional" students** is growing. They are older, engage in work, family, and school activities at the same time, and may view graduate education not as a means of preparing for a first career but rather as a means of changing or improving their employability.

- **Increasing numbers of individuals are returning to graduate school after having spent time in the workforce.** The current economy contributes to this trend; a growing number of “career changers” or laid-off workers are looking to graduate education in hopes that an advanced degree will ensure continued employability and/or career advancement.

These changes point to the need to reconsider how graduate students are financially supported as well as what kinds of additional resources they may need to succeed in graduate study. The changing demographics also may require a reconsideration of traditional time-to-degree expectations and career pathway opportunities.

Who Completes Graduate Degrees?

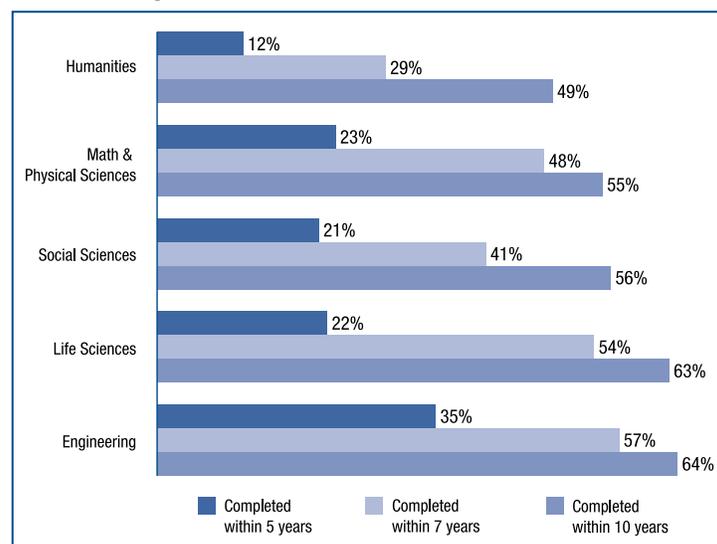
A number of other serious challenges face the U.S. graduate system. These include:

- **Degree completion:** Despite the rigorous selection processes used for admissions into U.S. graduate schools and the high achievement level of those pursuing a graduate degree, some studies indicate that the attrition rate in doctoral education is as high as 40% to 50%.
- **Why do students not complete their degrees?** At the doctoral level, factors include a change in family status, full or part-time enrollment status, job/military commitments, needing to work, or dissatisfaction with the particular program.
- **Time to degree completion** is lengthy, especially for those in doctoral programs. There is no fixed time appropriate for every degree, and there always will be a range of average times to degree based on different requirements in different fields. Still, the public and private costs of a longer-than-necessary time to degree completion, and the benefits to the public and to the individual recipient of a degree awarded, mean that students should complete as efficiently as possible. The Council of Graduate Schools’ Ph.D. Completion Project shows that less than 25% of students completed degrees within 5 years, and only about 45% completed within 7 years.

Changes Influencing Workforce Needs

It is projected that about 2.5 million jobs will require a master’s, doctoral, or advanced degree between 2008 and 2018. While many master’s programs are geared toward the needs of the workplace and prepare students for careers in the business, government, and nonprofit sectors, this is not necessarily true at the doctoral level.

Figure 2. Doctoral completion rate, by field and number of years.



Source: Council of Graduate Schools. (2008). *Ph.D. completion and attrition: Analysis of baseline program data from the Ph.D. Completion Project*. Washington, DC: Author.

The expected career path for doctoral recipients is less straightforward than for master’s graduates.

- **Changes in the availability of tenure track positions in academia** may influence the career path for doctoral students. An academic position in higher education that leads to tenure has, in the past, been an important career incentive for many students pursuing a doctoral degree. Today, however, an increasing number of nontenured and adjunct faculty are being hired over those in tenure track positions, and many doctoral recipients are looking for ways to serve society in careers outside academia.
- **International changes in higher education** also challenge the U.S. graduate system. For many years the United States led the world in attracting international students to graduate programs.
 - **Cultural changes** have resulted in increased access to higher education in many countries, and systemic changes in Europe have resulted in more unified and consistent standards.
 - **Political and economic changes** have placed a focus on the economic benefits of a highly trained workforce, leading to greater competition among countries for available students.
 - **The growing reputation of international graduate programs** means that while U.S. graduate schools have always provided the highest-quality graduate education, the quality of graduate programs outside the United States is growing as well.

Addressing Areas of Vulnerability

Addressing vulnerabilities in our graduate education system now will strengthen not only graduate education, but also our capacity for innovation and our ability to compete in the global economy. Changes in the university, industry, and government arenas are called for.

Universities

U.S. graduate education is a strategic national asset. Like all valuable assets it must be attended to and nurtured in order to remain viable and strong. Strengthening higher education and specifically graduate education is an investment in our future. In order to ensure a strong graduate education system going forward, universities need to address a number of challenges.

- **Continuing efforts to identify and attract talented students** to graduate education are critical.
- **Improving student completion rates** is important. Institutions must review and analyze their own completion and attrition patterns at both the master's and doctoral levels and create interventions to increase completion.
- **Nonacademic career pathways for graduate students must be clarified and expanded upon.** Graduate schools must provide appropriate training, mentoring, and information about career opportunities outside academia (e.g., business, government, and the nonprofit sector) in addition to those in academia.
- **Preparing future faculty** also is critical. Technology and demographics are changing, our understanding of how students learn is improving, and the aging of the professoriate has implications for how future faculty are prepared in U.S. graduate schools.
- **A professional development component** is one of the strengths of graduate education. However, it is primarily master's level programs, not doctoral, that have included this component. Universities should support the acquisition of such transferable skills to prepare doctoral recipients for a larger array of employment opportunities.

Employers

Employers play an important role in strengthening graduate education. They must clarify expectations of graduate recipients and help convey industry needs to graduate schools.

- **Develop business/university partnerships** by establishing a "Graduate School Chair" or other type of fellowship that provides financial support to

graduate students; increasing internships and work-study opportunities for graduate students; creating employer-matched, portable individual accounts that finance employee education and training; and providing tuition reimbursement programs for current employees to pursue graduate degrees.

- **Develop business/university partnerships to promote participation** of students from underrepresented groups in graduate programs.
- **Communicate the educational skills needed for 21st-century jobs** to students in high school through graduate school to help inform their decisions about educational choices in light of career opportunities.

Policymakers

The federal government must ensure that graduate education is a viable option for a growing number of U.S. citizens. Given the increasing diversity of the domestic student population, broadening participation in U.S. graduate education must remain a national priority. The odds that students will remain in graduate school are affected by several factors, especially the availability of appropriate financial support.

- Federal government support for graduate education must be increased through the authorization and implementation of *two new initiatives* to support doctoral and master's education.
 - **A COMPETES doctoral traineeship** program would support doctoral education in areas of national need by providing direct student support through a stipend, tuition and fees, ancillary fringe costs, and other costs of education.
 - **A new competitive grant program** would provide partial funding to create new, innovative master's programs or reinvigorate existing programs. Universities receiving the grants would need to secure at least two-thirds of program funding from sources other than the federal government.
- Continuing federal government support for existing programs and initiatives also is critical. This includes updating federal training and fellowship programs to keep pace with the increasing cost of graduate education, expanding loan forgiveness programs to other critical fields, amending current tax policies for graduate fellowships and scholarships, and aligning federal and state grant programs.
- Improvements and changes in the visa process to encourage international students to enroll in U.S. graduate schools and to remain in the United States following their degree completion also are needed.

The Path Forward

Graduate education plays a critical role in today's world and will continue to do so in the future. A better understanding of that role and a clear path forward depend upon effective collaborations between universities, industry, and government. Finding solutions to 21st-century challenges, ensuring continued national prosperity, and maintaining our position in the global economy will require a highly skilled, creative, and innovative workforce. These creative innovators will be the product of the U.S. graduate education system.



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The Commission on the Future of Graduate Education in the United States is a joint effort of the Council of Graduate Schools (CGS) and Educational Testing Service (ETS). It was charged with overseeing a research effort to examine the political, demographic, socioeconomic, educational, and financial trends that impact participation in graduate education. The assumption underlying this work was that the global competitiveness of the United States and capacity for innovation hinges fundamentally on a strong system of graduate education. The 18-member Commission includes university presidents, graduate deans, provosts, industry leaders, and higher education scholars. The Commission guided the development of a report outlining the research findings and recommendations to universities, industry, and policymakers, and will seek to create a national conversation on how to increase graduate degree attainment by all segments of the country's population.

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