****Graduate Education***by Derek Bruff*

This Teaching Guide provides resources for department chairs, directors of graduate studies,  
graduate faculty, graduate deans, and others interested in the quality of graduate education.

Some of the resources described below provide information relevant to preparing graduate students  
for academic careers. While not all graduate students intend to pursue academic careers, many  
graduate programs have as a goal the preparation of their students for future faculty positions.  
Resources relevant to this component of graduate education have been noted below.

**Research on Graduate Education**

**[Survey on Doctoral Education and Career Preparation](http://www.phd-survey.org/" \t "_blank)**

The Survey on Doctoral Education and Career Preparation was a national survey of over 4,000 doctoral students from 27 selected universities, representing 11 different disciplines. The researchers arrived at two key findings.

* “The training doctoral students receive is not what they want, nor does it prepare them for the jobs they take.”
* “Many students do not clearly understand what doctoral study entails, how the process works, and how to navigate it effectively.”

See the 60-page summary report, “[At Cross Purposes: What the Experiences of Today’s Doctoral Students Reveal about Doctoral Education](http://www.phd-survey.org/report%20final.pdf),” (available as a PDF) for an exploration of these findings, as well as recommendations for graduate students, graduate faculty, department chairs, directors of graduate studies, and graduate deans.

See also “The Survey of Doctoral Education and Career Preparation: The Importance of Disciplinary Contexts” by Chris M. Golde and Timothy M. Dore in [*Paths to the Professoriate: Strategies for Enriching the Preparation of Future Faculty*](https://wp0.vanderbilt.edu/cft/guides-sub-pages/graduate-education/#paths)for findings from this study relevant to preparing future faculty.

**[National Doctoral Program Survey](https://scout.wisc.edu/archives/r8629" \t "_blank)**

The National Doctoral Program Survey was a national survey of over 32,000 doctoral students and recent Ph.D.’s in which students graded their doctoral programs’ implementation of certain graduate educational practices recommended by the National Academy of Sciences, the Association of American Universities, and other groups.

The researchers’ main finding was that “satisfaction is strongly linked to choice: students want curricula broad enough to give them a choice of careers, they want information to ensure that their choices are informed, and they want the choices they make to be respected.”

See also “The 2000 National Doctoral Program Survey: An On-Line Study of Students’ Voices” by Adam P. Fagen and Kimberly M. Suedkamp Wells in [*Paths to the Professoriate: Strategies for Enriching the Preparation of Future Faculty*](https://wp0.vanderbilt.edu/cft/guides-sub-pages/graduate-education/#paths)for findings from this study relevant to preparing future faculty.

**[Ph.D.’s—Ten Years Later](http://depts.washington.edu/cirgeweb/phd-career-path-tracking/phd-holders-in-natural-sciencesengineering/" \t "_blank)**

Ph.D.’s—Ten Years Later was a national survey of almost 6,000 doctoral recipients from six disciplines 10 to 13 years after degree completion. The survey focused on the career paths chosen by these doctoral recipients as well as their evaluations of their doctoral programs. Full results from the survey have not been released, but partial results for several categories of survey recipients and disciplines are available.

See also “‘So You Want to Be a Professor!’: Lessons from the Ph.D.’s–Ten Years Later Study” by Maresi Nerad, Rebecca Aanerud, and Joseph Cerny in [*Paths to the Professoriate: Strategies for Enriching the Preparation of Future Faculty*](https://wp0.vanderbilt.edu/cft/guides-sub-pages/graduate-education/#paths)for findings from this study relevant to preparing future faculty.

**[Re-envisioning the Ph.D.: What Concerns Do We Have?](http://depts.washington.edu/envision/resources/ConcernsBrief.pdf" \t "_blank)**

Re-envisioning the Ph.D., a project sponsored by the Pew Charitable Trusts, addressed the question, “How can we re-envision the Ph.D. to meet the needs of the society of the 21st century?” The project began with an open-ended “environmental scan” of doctoral education featuring interviews and focus groups involving hundreds of students, faculty, alumni, and hiring agencies, as well as an extensive literature review. The results of this study can be found in the report *Re-envisioning the Ph.D.: What Concerns Do We Have?*, available as a PDF at the link above. The study’s primary findings were the following.

* There is an oversupply of Ph.D.’s for academic positions in a variety of disciplines, an unintended consequence of a variety of societal pressures.
* Stakeholders in doctoral education have conflicting views about doctoral education, including its purpose, enrollment practices, and methods of training.
* However, there is widespread agreement among stakeholders on an agenda for improving doctoral education, including
  + shortening the time to degree,
  + developing more diversity among Ph.D. recipients,
  + preparing doctoral students for a wider variety of careers, and
  + making interdisciplinary work more integral to doctoral education.

**Other Research**

[**Leaving the Ivory Tower: The Causes and Consequences of Departure from Doctoral Study**](http://acorn.library.vanderbilt.edu/cgi-bin/isbn-search/0742509419)

This book by Barbara Lovitts (published by Rowman & Littlefield, 2001) summarizes the results of her study on the causes of doctoral program attrition. It is based on surveys and interviews with 816 doctoral students (511 of whom completed their doctoral studies, 305 of whom did not), directors of graduate studies, and faculty members. Doctoral program attrition rates are typically estimated at around 50%, and Lovitts argues that it is not students’ background characteristics that predict success, but rather it is what happens after they enroll. This book is available at the Center for Teaching library.

See also “Research on the Structure and Process of Graduate Education: Retaining Students” by Barbara E. Lovitts in [*Paths to the Professoriate: Strategies for Enriching the Preparation of Future Faculty*](https://wp0.vanderbilt.edu/cft/guides-sub-pages/graduate-education/#paths)for findings from this study relevant to preparing future faculty.

[**“Beginning Graduate School: Explaining First-Year Doctoral Attrition”**](http://onlinelibrary.wiley.com/doi/10.1002/he.10105/pdf)

This article by Chris M. Golde from New Directions for Higher Education No. 101 (Jossey-Bass, 1998) presents the results of the author’s study of 18 doctoral students at a large research university who left their programs during their first year. She identifies the following four questions doctoral students must answer in the affirmative in order to continue their studies.

* “Can I do this?” — a question of intellectual competence
* “Do I want to be a graduate student?” — a question of interest in life as a graduate student
* “Do I want to do this work?” — a question of interest in life as a professional in the student’s chosen field
* “Do I belong here?” — a question of match between student and doctoral program

She also identifies doctoral program structures that assist students in answering these questions sooner rather than later in their studies.

[**“Best Practices for Enculturation: Collegiality, Mentoring, and Structure”**](http://onlinelibrary.wiley.com/doi/10.1002/he.10108/pdf)

This article by Peg Boyle and Bob Boice from New Directions for Higher Education No. 101 (Jossey-Bass, 1998) synthesizes the results of the authors’ study of first-year graduate education and earlier findings on the topic. They argue that “exemplary” doctoral programs share the following three characteristics.

* “They foster collegiality among the first-year students.”
* “They support both mentoring and collegial, professional relationships between the first-year students and faculty.”
* “They provide the first-year students with a clear sense of the program structure and faculty expectations.”

They also provide examples of doctoral program structures that possess these characteristics.

[**Longitudinal Study of the Development of Graduate Students as Teaching Scholars**](https://www.wiley.com/en-us/Paths+to+the+Professoriate%3A+Strategies+for+Enriching+the+Preparation+of+Future+Faculty-p-9780787966348)

This four-year interview-based study of 66 graduate students at three universities looked at the impact of graduate school and teaching assistant duties on “aspiring professors’ understanding of the teaching process and the teaching role.” The researchers’ key findings include the following.

* “Too much of graduate education is characterized by a lack of systematic, developmental preparation.”
* “Graduate education too often does not provide for systematic feedback and mentoring that could help eliminate unnecessary barriers to success.”
* “As they progress through graduate education, many students begin to wonder if they really aspire to academic life.”
* “Current graduate education does not match the needs and demands of the changing academy and broader society.”

*See also “The Development of Graduate Students as Teaching Scholars: A Four-Year Longitudinal Study” by Donald H. Wulff, et al., in* [*Paths to the Professoriate: Strategies for Enriching the Preparation of Future Faculty*](https://wp0.vanderbilt.edu/cft/guides-sub-pages/graduate-education/#paths) *for findings from this study relevant to preparing future faculty.*

[**Research Doctorate Programs in the United States: Continuity and Change**](http://www.nap.edu/catalog.php?record_id=4915)

This 1995 National Research Council study of research-focused doctoral programs features quantitative information on doctoral programs at 174 institutions as well as rankings of the “quality” of these programs as determined by faculty ratings of peer programs. Information on doctoral students is also included.

A [new edition of this study](http://grants.nih.gov/training/research_doctorates.pdf) is current collecting data (as of July 2006) and published results are anticipated in December 2007. The new edition features significantly different rating and ranking procedures.

**Initiatives in Graduate Education**

**[Re-envisioning the Ph.D.](http://depts.washington.edu/envision/about/project_background.html" \t "_blank)**

Re-envisioning the Ph.D., a project sponsored by the Pew Charitable Trusts, addressed the question, “How can we re-envision the Ph.D. to meet the needs of the society of the 21st century?” The project featured the following components.

* The project conducted an open-ended “environmental scan” of doctoral education featuring interviews and focus groups involving hundreds of students, faculty, alumni, and hiring agencies, as well as an extensive literature review. The results of this study are found in the report [Re-envisioning the Ph.D.: What Concerns Do We Have?.](http://depts.washington.edu/envision/resources/ConcernsBrief.pdf)
* That study and ongoing project work resulted in an online compilation of [“Promising Practices” in doctoral education](http://depts.washington.edu/envision/practices/index.html) from dozens of institutions. Topic areas for these Promising Practices include graduate student experiences, graduate student requirements, institutional partnerships and collaborations, and administering doctoral education programs.
* The project compiled a list of [recommendations for doctoral education](http://depts.washington.edu/envision/project_resources/national_recommend.html), based on a review of more than a dozen national studies on doctoral education.
* A [bibliography on doctoral education](http://depts.washington.edu/envision/project_resources/select_biblio.html) was assembled and made available online.
* A Re-envisioning the Ph.D. conference was held in 2000. [Materials from this conference](http://depts.washington.edu/envision/project_resources/2000_conf_materials.html) are available online.

See also “Re-envisioning the Ph.D.: A Challenge for the Twenty-First Century” by Jody D. Nyquist, Bettina J. Woodford, and Diane L. Rogers in [Paths to the Professoriate: Strategies for Enriching the Preparation of Future Faculty](https://wp0.vanderbilt.edu/cft/guides-sub-pages/graduate-education/#paths) for results from this project relevant to preparing future faculty.

**[The Responsive Ph.D. Initiative](http://woodrow.org/news/publications/responsive-phd/" \t "_blank)**

The Responsive Ph.D. Initiative, a project sponsored by the Woodrow Wilson National Fellowship Foundation, was begun with the goal of transforming the findings of national studies of doctoral education and projects like Re-envisioning the Ph.D. (see above) into recommendations for change. The initiative identified the following four principles “to support genuine change in doctoral education”:

* Stronger, centralized graduate schools are required for improving graduate education.
* Doctoral education must interact more regularly with the “worlds beyond academia” to “engage social challenges.”
* In the interests of both “equity and efficacy,” doctoral education must attract and develop more Ph.D.’s of color.
* Doctoral education must take seriously the need for assessment and evaluation.

The initiative has released two major reports of its findings.

* [The Responsive Ph.D.: Innovations in U.S. Doctoral Education](http://woodrow.org/news/publications/responsive-phd/) This report describes the four principles listed above in greater detail. It also provides case studies of 41 effective doctoral education practices under the themes of forming new partnerships, crafting new paradigms, exploring new practices, recruiting and retaining new people, and connecting resources to outcomes. The report also identifies an agenda for further research and action.
* [Diversity and the Ph.D.: A Review of Efforts to Broaden Race and Ethnicity in U.S. Doctoral Education.](http://www.uky.edu/ie/sites/www.uky.edu.ie/files/uploads/Diversity%20%26%20the%20PhD%20A%20Review%20of%20Efforts%20to%20Broaden%20Race%20%26%20Ethnicity%20.%20.%20..pdf) This report begins by summarizing the “context and need” for diversity in doctoral education. It features profiles and analysis of 14 national initiatives aimed at increasing diversity in Ph.D. programs and presents seven recommendations for continuing efforts at improving diversity based on its findings.

See also “Toward a Responsive Ph.D.: New Partnerships, Paradigms, Practices, and People” by Robert Weisbuch in [Paths to the Professoriate: Strategies for Enriching the Preparation of Future Faculty](https://wp0.vanderbilt.edu/cft/guides-sub-pages/graduate-education/#paths) for results from this project relevant to preparing future faculty.

**[Carnegie Initiative on the Doctorate](http://www.carnegiefoundation.org/previous-work/professional-graduate-education" \t "_blank)**

The Carnegie Initiative on the Doctorate, sponsored by the Carnegie Foundation for the Advancement of Teaching, is an organized effort by dozens of doctoral programs in six disciplines (chemistry, education, English, history, mathematics, and neurosciences) to analyze and improve the education of their doctoral students.

The initiative focuses on the preparation of doctoral students as “stewards of the discipline.” Such stewards should be capable of generating new knowledge in the discipline, conserving important ideas and findings in the discipline, and transforming this new and past knowledge into “powerful pedagogies of engagement, understanding, and application.”

The three major components of the project are the following.

* Defining stewardship in a disciplinary context through the publication of essays collected in Envisioning the Future of Doctoral Education: Preparing Stewards of the Discipline – Carnegie Essays on the Doctorate, edited by Chris Golde and George Walker (Jossey-Bass, 2006). The [introduction](http://media.wiley.com/product_data/excerpt/50/07879823/0787982350.pdf) and [table of contents](http://media.wiley.com/product_data/excerpt/50/07879823/0787982350-1.pdf) are available online, and the book is available at the Center for Teaching library in Calhoun Hall 116. See its [ACORN record](http://acorn.library.vanderbilt.edu/cgi-bin/isbn-search/0787982350) for call number and availability.
* Implementing programs in multiple departments as “design experiments” in doctoral education.
* Studying the experiments and facilitating the broad adoption of successful models.

*See also “The Carnegie Initiative on the Doctorate: Creating Stewards of the Discipline” by George E. Walker in* [*Paths to the Professoriate: Strategies for Enriching the Preparation of Future Faculty*](https://wp0.vanderbilt.edu/cft/guides-sub-pages/graduate-education/#paths) *for results from this project relevant to preparing future faculty.*

**[The Ph.D. Completion Project](http://www.phdcompletion.org/index.asp" \t "_blank)**

This three-year project, coordinated by the [Council of Graduate Schools](http://www.cgsnet.org/), involves over 40 North American doctoral-granting institutions that are designing, implementing, and assessing interventions intended to improve Ph.D. completion rates. These interventions are in the areas of selection, mentoring, financial support, program environment, research mode of the field, and processes and procedures.

Results have not been released (as of July 2006), but the project has made available a number of [tools and templates](http://www.phdcompletion.org/tools/index.asp) for

* tracking completion and attrition data,
* conducting exit interviews with graduate students completing or leaving programs, and
* assessing the effectiveness of current programs and policies.

The project also had a [bibliography on doctoral program attrition](http://www.phdcompletion.org/resources/index.asp).

**[Preparing Future Faculty](http://www.preparing-faculty.org/" \t "_blank)**

The Preparing Future Faculty (PFF) program is a national program with the goal of “transforming the way aspiring faculty members are prepared for their careers.” The national program has helped develop and fund PFF programs at more than 45 doctoral degree-granting institutions in the United States. These local programs have three core features.

* PFF programs help doctoral students to understand and prepare for faculty duties in each of the three traditional categories of faculty roles–teaching, research, and service.
* Doctoral students participating in PFF programs have multiple mentors and receive feedback from those mentors on their research, teaching, and service activities.
* PFF programs expose participants to the roles and responsibilities of faculty members at a variety of institutions. Typically this is accomplished through partnerships between the doctoral institution and nearby institutions of other types, including liberal arts colleges, community colleges, and master’s universities.

The national PFF program has summarized the experiences of institutions in creating local PFF programs in two manuals.

* Preparing Future Faculty in the Sciences and Mathematics. The [entire manual](http://www.preparing-faculty.org/PFFWeb.PFF3Manual.htm) and an [executive summary](http://www.preparing-faculty.org/PFFWeb.PFF3_ExSum.pdf) are available online as PDFs. The manual is also available at the Center for Teaching library in Calhoun Hall 116. See its [ACORN record](http://acorn.library.vanderbilt.edu/cgi-bin/isbn-search/0970268017) for call number and availability.
* Preparing Future Faculty in the Humanities and Social Sciences The [entire manual](http://www.preparing-faculty.org/PFFWeb.PFF4Manual.htm) and an [executive summary](http://www.preparing-faculty.org/PFFWeb.PFF4_ExSum.pdf) are available online as PDFs. The manual is also available at the Center for Teaching library in Calhoun Hall 116. See its [ACORN record](http://acorn.library.vanderbilt.edu/cgi-bin/isbn-search/097026805X) for call number and availability.

*See also “Preparing Future Faculty: Changing the Culture of Doctoral Education” by Anne S. Pruitt-Logan and Jerry G. Gaff in* [*Paths to the Professoriate: Strategies for Enriching the Preparation of Future Faculty*](https://wp0.vanderbilt.edu/cft/guides-sub-pages/graduate-education/#paths) *for more details.*

**Books on Graduate Education**

[***Envisioning the Future of Doctoral Education: Preparing Stewards of the Discipline***](https://www.wiley.com/en-us/search?pq=Envisioning+the+Future+of+doctors+Education%3A+Preparing+stewart+of+the+Discipline%7Crelevance)

This book, edited by Chris M. Golde and George E. Walker (Jossey-Bass, 2006), collects sixteen essays on the doctorate commissioned by the [Carnegie Initiative on the Doctorate](http://www.carnegiefoundation.org/previous-work/professional-graduate-education). These essays address the role of doctoral education in preparing “[stewards of the discipline](http://www.carnegiefoundation.org/publications/envisioning-future-doctoral-education-preparing-stewards-discipline-carnegie-essays-doc)” capable of generating new knowledge in the discipline, conserving important ideas and findings in the discipline, and transforming this new and past knowledge into “powerful pedagogies of engagement, understanding, and application.” The essays address doctoral education in mathematics, chemistry, neuroscience, education, history, and English, answering the question, “If you could start de novo [over again], what would be the best way to structure doctoral education in your field?”

The [introduction](http://media.wiley.com/product_data/excerpt/50/07879823/0787982350.pdf) and [table of contents](http://media.wiley.com/product_data/excerpt/50/07879823/0787982350-1.pdf) are available online, and the book is available at the Center for Teaching library. See its [ACORN record](http://acorn.library.vanderbilt.edu/cgi-bin/isbn-search/0787982350) for call number and availability.

***[Paths to the Professoriate: Strategies for Enriching the Preparation of Future Faculty](https://www.wiley.com/en-us/search?pq=Paths+to+the+Professoriate%3A+Strategies+for+Enriching+the+Preparation+of+Future+Faculty%7Crelevance)***

This book, edited by Donald H. Wulff and Ann E. Austin and published by Jossey-Bass (2004), features a summary of research and initiatives, including many of the sources listed on this page, aimed at understanding and improving the preparation of doctoral students interested in academic careers. In the concluding chapter, the editors identify the following five major conclusions that emerge from the preceding chapters.

* “Students need help getting started in graduate school in ways that promote success.”
* “Key to the success of doctoral students is the extent to which they connect with the people and cultures of their departments.”
* “Doctoral students need preparation for a broader conception of the faculty role.”
* “Doctoral students need ample career-planning information and opportunities.”
* “Carefully constructed advising and mentoring relationships are important to the success of graduate students.”

The editors also suggest specific steps that doctoral programs can take to address these issues.

This book is available at the Center for Teaching library. See its [ACORN record](http://acorn.library.vanderbilt.edu/cgi-bin/isbn-search/0787966347) for call number and availability.

[***The Experience of Being in Graduate School: An Exploration***](https://www.wiley.com/en-us/The+Experience+of+Being+in+Graduate+School%3A+An+Exploration%3A+New+Directions+for+Higher+Education%2C+Number+101-p-9780787942472)

Volume 101 of New Directions for Higher Education (Jossey-Bass, 1998), edited by Melissa S. Anderson, “addresses the graduate experience from the standpoint of the students themselves” through studies on graduate students as well as reports of those involved in graduate education. A few of the sources listed on this page were drawn from this volume.

This book is available online via the link above and in the Peabody library. See its [ACORN record](http://acorn.library.vanderbilt.edu/cgi-bin/isbn-search/0787942472) for call number and availability.

**Vanderbilt Resources**

* [Our Best Minds and Efforts: Graduate Education at Vanderbilt](http://www.vanderbilt.edu/facultysenate/files/GradEdFinal.pdf) (PDF) – In the fall of 2002, Vanderbilt Provost Nick Zeppos and Vice Chancellor for Health Affairs Harry Jacobson created a Graduate Education Task Force to examine the state of graduate education at Vanderbilt and make recommendations to improve graduate education over the next five to ten years. Our Best Minds and Efforts presents the task force’s findings and recommendations.
* [Graduate Development Network (GDN) Collaborative](https://gradschool.vanderbilt.edu/about/gdn.php) – This network of faculty, administrators, and students at Vanderbilt seeks to facilitate the awareness and use of the many programs at Vanderbilt that can help graduate students become productive and well-rounded scholars. The GDN web site lists services and resources offered by the members of the collaborative as well as events and conferences and funding opportunities.
* [Vanderbilt Institutional Research Group (VIRG)](http://virg.vanderbilt.edu/) – VIRG coordinates institutional research at Vanderbilt, including research on graduate students and graduate programs. The VIRG web site features the University Factbook, which includes high-level information on admissions, enrollment, and graduation rates. The web site also provides access to other administrative data relevant to graduate education (login required).
* Center for Teaching [Mentoring Graduate Students](http://www.vanderbilt.edu/cft/resources/teaching_resources/interactions/mentoring_grad.htm) – This teaching guide provides information and resources on many aspects of the faculty-graduate student mentoring relationship.
* The [Professional Development for Future Faculty teaching guide](http://wp0.vanderbilt.edu/cft/teaching-guides/audiences/future-faculty/) offers a self-directed professional development plan designed to introduce three areas of focus: teaching and learning, professional development, and the world of the university.
* Center for Teaching [Certificate in College Teaching Program](https://wp0.vanderbilt.edu/cft/certificate-in-college-teaching/) – Graduate students planning faculty careers should also see the Center for Teaching’s Teaching Certificate Program, a program designed to help its participants develop and refine skills for their current and future teaching through three cycles of teaching activities, each consisting of inquiry, experimentation, and reflection phases. Participants who complete the program receive a Teaching Certificate from the Graduate School and the Center for Teaching.
* [Center for the Integration of Research, Teaching, and Learning](http://www.cirtl.net/) – The Center for the Integration of Research, Teaching, and Learning (CIRTL) is a National Science Foundation-funded network of universities intended to “promote the development of a national faculty in science, technology, engineering, and mathematics (STEM) committed to implementing and advancing effective teaching practices for diverse student audiences as part of their professional careers.”In the spring of 2006, Vanderbilt joined the CIRTL Network, and has begun exploring ways of collaborating with the network institutions to fulfill CIRTL’s mission locally by building on and interconnecting Vanderbilt’s current strengths in STEM education and professional development.

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