

Closing Gaps in our Knowledge of PhD Career Pathways: The Importance of Preparation in Grant Writing for PhDs

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Introduction

Since the COVID-19 pandemic, many doctoral programs have faced a dilemma between investing in extracurricular programming and maintaining sustainable budgets. Recent data show that, relative to other skills and attributes, grant writing is a skill that many PhD alumni across fields wish they had had acquired (Mitic & Okahana, 2021). Opportunities, such as grant writing experience, assist with curricular and co-curricular experiences by providing opportunities for additional funding and increasing competence for the workforce (Nerad, 2015). Training in grant writing is beneficial to the education of the PhD as well. According to Conn et al. (2016), grant writing allows PhDs to enhance research intentionality, project articulation, and overall writing skills. Using survey data from the Council of Graduate Schools' (CGS) PhD Career Pathway project, this brief provides insight to how PhD graduates view grant writing professional development opportunities.

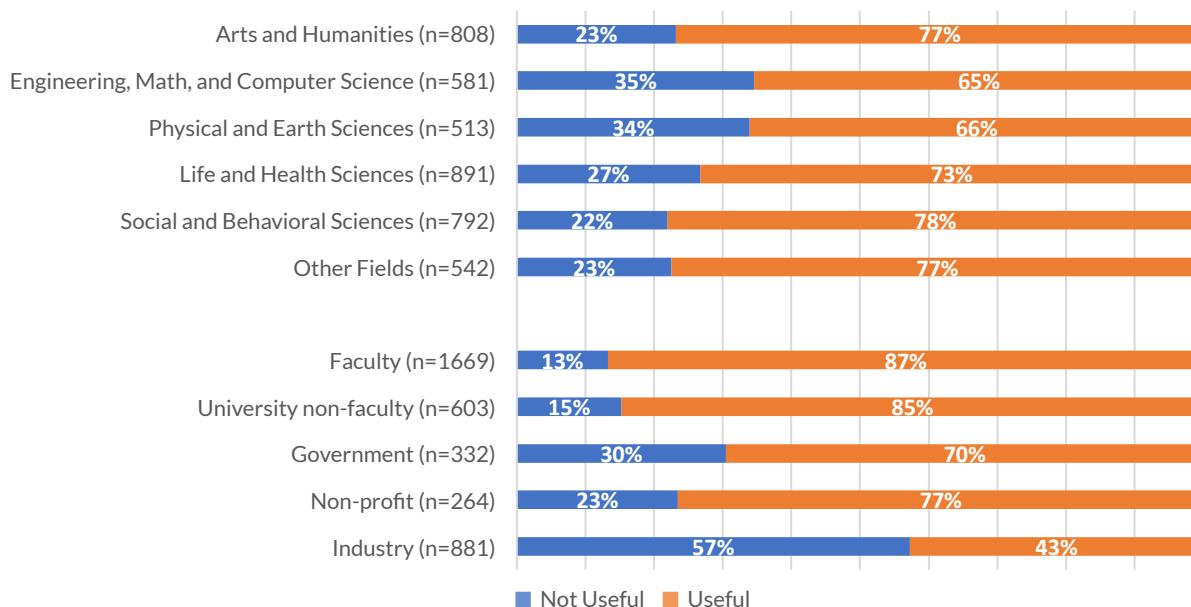
Key Findings:

Usefulness of Grant Writing. Within each broad PhD field of study, most PhD alumni found professional development in grant writing to be useful. Across fields of study and all job sectors, except for industry, the majority of PhDs reported that preparation in grant writing was useful (**Figure 1**). Figure 1 displays the percentage of participants by job type and discipline who indicated that grant writing skills were or were not useful in their current position.

Timing for Grant Writing Preparation. Survey results show that the percentage of PhDs with Engineering, Math, & Computer Science (41%) and Physical & Earth Science (36%) degree fields preferred grant writing preparation to occur during the latter stages of the program (e.g., dissertation process). The remaining fields indicated that this preparation should occur during the midpoint of their degree field (e.g. candidacy and comprehensive exams). Doctoral fellowships and research grant opportunities are typically available for PhD candidates. This interest in grant writing in the middle and later stages of the PhD coincides with students' eligibility to apply for grants and fellowships to fund doctoral studies as well as independent and group research. In addition, by midpoint, PhDs have solidified their research topic. Furthermore, securing funding for research enhances a PhD's opportunity to secure employment in a competitive job market (**Figure 2**).

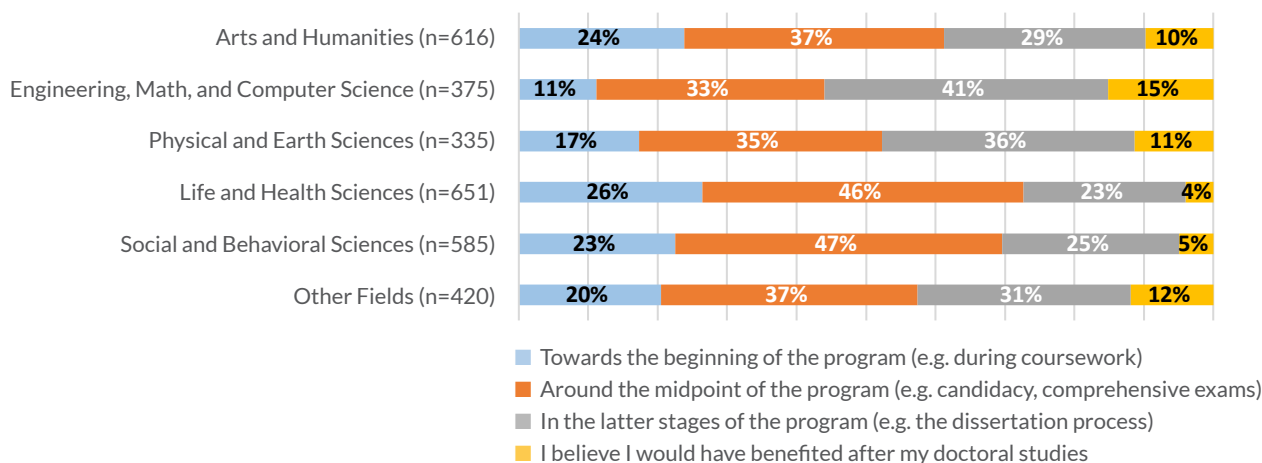


Figure 1. Figure 1. Usefulness of Grant Writing Skills in Current Position



Data Source: Council of Graduate Schools, *Understanding PhD Career Pathways for Program Improvement, Fall 2020 Follow-up Alumni Survey*.

Figure 2. Preferred Timing During PhD Experience for Grant Writing Professional Development



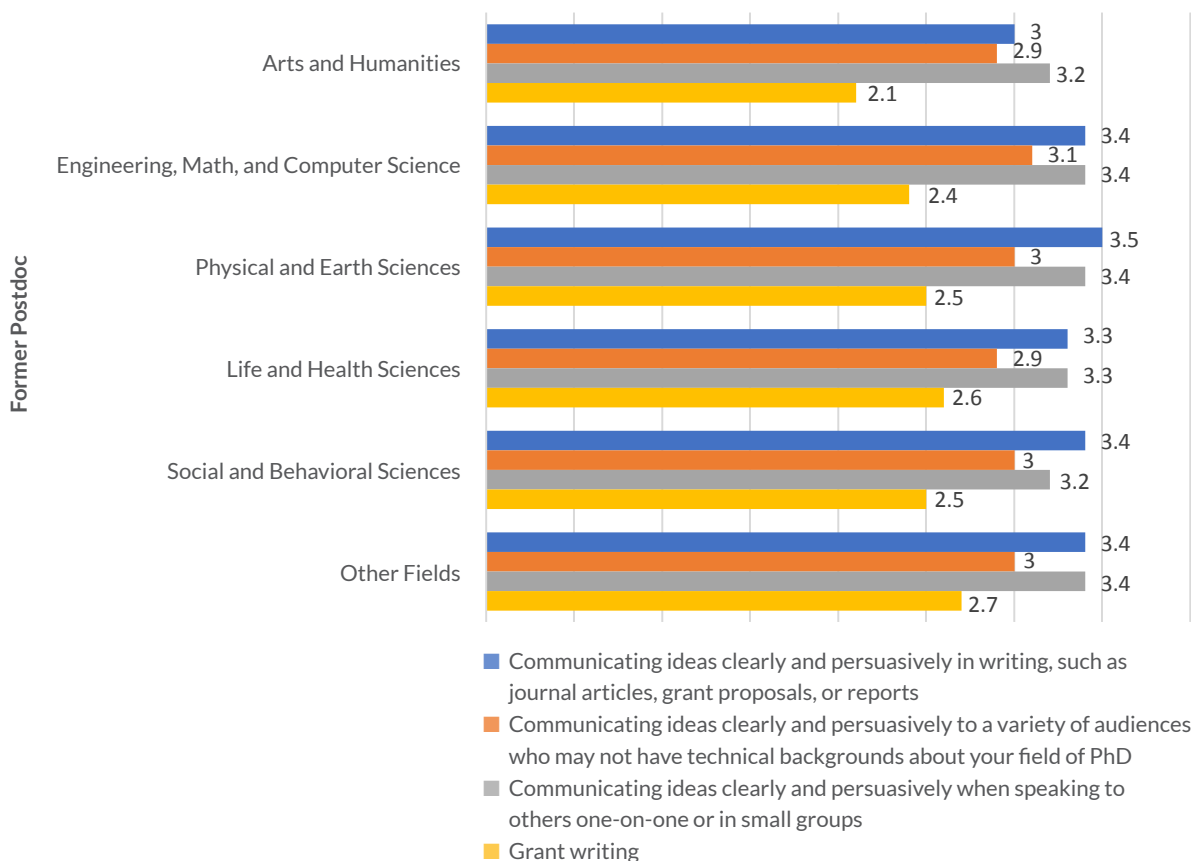
Data Source: Council of Graduate Schools, *Understanding PhD Career Pathways for Program Improvement, Fall 2020 Follow-up Alumni Survey*.

Barriers for Participation. Survey participants selected barriers that precluded them from participating in grant writing professional development opportunities during their degree program. Barriers included “Not Offered or Unaware,” “Competing Priorities,” “Timing,” “Monetary Cost” and “Lack of Interest”. Results were similar across all degree fields. “Not Offered or Unaware” had the highest percentage, at 71%, as one of the barriers to pursuing grant writing. The remaining percentages include 15% for “Competing Priorities,” 6% for “Timing,” 1% for “Monetary Cost,” and 6% for “Lack of Interest.”



Postdoc Preparation for Communication and Grant Writing. Many PhDs choose to further their knowledge and experience in research and writing through postdoctoral work. Participants who had had postdoc experiences were asked how well their postdoctoral experiences prepared them in selected attributes and knowledge on a 5-point scale (1=Poorly to 5=extremely well). Across all fields of study, previous postdocs indicated that they were less prepared for grant writing through their postdoc experiences than they were in skills such as written and oral communication. Specifically, of the communication skills presented, survey respondents with postdoctoral experiences indicated that they felt more prepared by their experiences for written communication skills and small group/interpersonal communication skills than they did for grant writing (**Figure 3**).

Figure 3. Postdoctoral Experience Preparation of Selected Attributes and Knowledge



Data Source: Council of Graduate Schools, *Understanding PhD Career Pathways for Program Improvement, Fall 2020 Follow-up Alumni Survey*.

Promising Practices

Humanities PhDs indicated a significant interest in grant writing preparation. To increase support for humanities PhDs, CGS established *The Humanities Coalition*, a collaborative community for U.S. doctoral-granting institutions to catalyze innovation in the preparation of humanities PhDs for diverse careers. Funded by the Andrew W. Mellon Foundation, the Humanities Coalition will develop and assess initiatives for better support humanities PhD students transitioning from graduate programs into the workforce as well as advocating for program and curricular changes to strengthen their career pathways. One focus area of this project is grant writing and resource development. The project will soon generate promising practices for institutions seeking to develop or augment professional development programs in grant writing.



Takeaway Points

- Grant writing skills are an asset not only for PhDs working in the university setting, but also for those who work in the government and non-profit sectors. The skills of grant writing are applicable to a multitude of fields and community efforts. PhD programs and doctoral granting institutions should consider prioritizing curriculum and professional development opportunities that can sharpen grant writing abilities.
- Increasing the awareness and access to grant writing professional development opportunities will remove the most important barriers to participation. When encouraging preparation in grant writing, universities should be explicit about program learning outcomes and how these can be applied across a variety of careers.
- Due to the relatively small percentage of PhDs who receive explicit training in grant writing during their doctoral programs, preparation in grant writing should be integrated into postdoctoral positions in addition to expanding doctoral student preparation in grant writing. Postdoctoral positions are often seen as a pathway to the faculty and acquiring a grant is often vital to securing tenure. Coordinators of postdoctoral experiences, postdoc advisers, and graduate deans are encouraged to review the intended outcomes of postdoctoral training in addition to acquisition of new research techniques or methodologies and review professional development opportunities with them.
- PhDs should be educated about and acquainted with the research office of their institutions to identify funding sources, locate support structures, and understand the role of the office prior to receiving a grant or fellowship.

Conversation Starters for PhD Program Improvement

We encourage graduate schools to engage in campus conversations about grant writing opportunities and training for PhDs. Culture change happens incrementally and requires active participation of students, faculty, and administrators. A good first step is understanding how your campus community communicates about professional development for PhDs. Some of the questions that you may want to begin asking your campus colleagues (e.g. graduate school staff, college deans, graduate program directors, postdoc office, etc.) and others include:

- What kind of professional development opportunities in grant writing does your institution provide to your PhD students?
- What is the frequency, duration, and timing of professional development opportunities in grant writing?
- Are there opportunities to expand grant writing programs, such as online workshops, instead of in-person instruction, recurring opportunities in fall, spring, and summer semesters? Does the timing of these programs make it possible for part-time students or students with competing responsibilities (such as caregiving)?
- How strongly are students encouraged to participate in grant writing? Are the benefits of grant writing skills communicated? Are PhDs aware of the versatility of grants and their applicability in various job sectors and education fields?
- At what point, if at all, are PhDs introduced to the research office at your institution? How is the function of this office incorporated into their orientation of grant writing and research?
- What are the grant writing responsibilities of postdocs? Are postdocs given opportunities to participate in professional development or grant writing opportunities?

References

- Conn, G. L., Corbett, A. H., Pavlath, G. K., & Kahn, R. A. (2016). Use of a grant writing class in training PhD students. *Traffic*, 17(7), 803-814.
- Mitic, R. R., & Okahana, H. (2021). PhD professional development: Value, timing, and participation. Council of Graduate Schools.
- Nerad, M. (2015). Professional development for doctoral students: What is it? Why now? Who does it? *Nagoya Journal of Higher Education*, 15, 285-318.



Additional Resources

CGS Resources for Graduate Student Professional Development: CGS has led a series of Best Practices projects in the professional development domain, including the Next-Gen PhD Consortium and the Humanities Coalition. Project reports and resulting resources for graduate schools are available on the [CGS website](#).

CGS Communications Guide for Career Diversity: CGS has developed a communications resource that is designed to help university partners advocate for greater transparency about PhD careers and to support career diversity. The tool includes tips for supporting career diversity in campus social media as well as guidance on communicating the value of diverse careers. For example, [the guide](#) encourages the shift in some of the skills discussed in this brief (e.g. communication, diversity/multicultural competency) towards the label “essential skills” rather than “soft skills” to put them on equal footing with more traditional academic skillsets.

Individual Development Plans (IDP): With increased focus on career planning in doctoral education, several disciplinary societies and academic institutions have created resources meant for doctoral students and postdoctoral associates. These resources can be used iteratively by early career academics and their mentors to assess career options and set goals. Learn more about IDPs from the [American Psychological Association](#) and the [University of California, Berkeley](#).

Graduate Career Consortium (GCC): Since 1987, the Graduate Career Consortium is a 400+ member organization of higher education professionals who work with graduate students and postdoctoral associates on issues related to career and professional development. Learn more about the [Graduate Career Consortium](#).

About the Data Source

The CGS PhD Career Pathways Project Alumni Follow-Up Survey was distributed in summer 2020 to doctoral degree recipients that were three, eight, or fifteen years out of their PhD in selected programs at participating institutions when they previously completed a baseline survey between 2017-2019. This brief is based upon this aggregated data set, which includes 4,370 doctoral degree recipients from 58 institutions.

The CGS PhD Career Pathways Coalition

CGS PhD Career Pathways is a coalition of 75 doctoral institutions working to better understand and support PhD careers across all broad fields of study. Over the course of the project, universities will continue collecting data from current PhD students and alumni using surveys that were developed by CGS in consultation with senior university leaders, funding agencies, disciplinary societies, researchers, and PhD students and alumni. The resulting data are allowing universities to analyze PhD career preferences and outcomes at the program level and help faculty and university leaders strengthen career services, professional development opportunities, and mentoring.

About CGS

For over 60 years, the Council of Graduate Schools has been the only national organization dedicated solely to advancing master’s and doctoral education and research. CGS members award 86.9% of all U.S. doctoral degrees and 59.8% of all U.S. master’s degrees. CGS accomplishes its mission through advocacy, the development and dissemination of best practices, and innovative research.

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