

The Hidden Curriculum of Faculty Careers in Computing

Shomir Wilson
shomir@psu.edu

College of Information Sciences and Technology
Pennsylvania State University
University Park, PA, USA

Abstract

A subset of students in computing Ph.D. programs aspire to become research-active faculty at universities. However, options are typically limited for students to learn about the work of faculty beyond the activities students personally witness. Additionally, while orientations and workshops are available to new faculty, these resources are ephemeral compared to the extended, years-long needs of junior faculty to assimilate professorial knowledge. The norms of independence and self-management distinguish university faculty from other career paths, and they further motivate creating supportive resources. I introduce a set of guides to help aspiring and new computing faculty learn the unwritten norms of the profession. I focus on creating materials to support pre-tenure faculty in positions with significant expectations for research, teaching, and service, motivated by the complexity of balancing those obligations. These materials target faculty in the United States, matching my positionality, although I write them to be as broadly applicable as possible. While similar materials exist, these guides contrast with others through their foci on day-to-day activities, sustainable effort, and understanding the significance of one's work. I describe three guides from the full set, which is available to the public online at <https://shomir.net/advice.html>. These three selections consist of a glossary of faculty terminology, a case study of a faculty member's experiences with grant proposals, and a experiential guide to tenure. Finally, I provide recommendations for others who are interested in creating similar materials to expand the available support for pre-tenure faculty.

CCS Concepts

- Social and professional topics → Computing occupations; Employment issues.

Keywords

academia; academic careers; faculty; professionalism; tenure

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1 Introduction

Tenure-line faculty openings are highly competitive [2], and the duties of the job are complex and multifaceted [3]. Computing education researchers have noted a “hidden curriculum” of academic norms that students are expected to follow [7], and new computing faculty may encounter a similar problem: while orientations and mentoring programs exist [1, 5], these often focus on professional obligations at the expense of understanding underlying norms and encouraging sustainable effort. This paucity is magnified by the limited supervision that tenure-line faculty tend to receive, as they often teach and supervise research separately from their peers.

I present a set of guides that cover typically undocumented knowledge about being pre-tenure faculty (i.e., tenure-line but prior to tenure) in computing. I focus on positions in the United States with strong research expectations; while this does not represent all faculty (and advice at that level of generality would be impractical), some generalizations may be possible.¹ My motivations include helping graduate students understand faculty jobs, helping new faculty meet expectations, and helping the general public understand the complexity of faculty work. These guides are also inspired by the concept of the *flipped classroom* [4], where learners are given materials to study before class, shifting the focus of interactive time to their individualized learning needs. This approach is conducive to making faculty training sessions as efficient as possible, in light of concerns about faculty overwork [6].

In the remainder of this paper I briefly describe three of the guides and provide recommendations for creating similar materials.

2 The Guides

The guides I describe below are a subset of the total, and the larger set covers topics such as the tenure-line job market in computing and writing a narrative statement for promotion and tenure. All guides assume minimal background knowledge about academia, to support a variety of groups: graduate students considering a faculty job search, new faculty acclimating to the role, and members of the general public who have questions about faculty work.

The *Guide to Professorspeak* (<https://shomir.net/professorspeak.html>) is a glossary that defines terminology that faculty often encounter in their work. Figure 1 shows three selected examples. The glossary is written to generalize across US universities as much as possible, for example by including both *RPT* and *PT* and noting that reappointment is a procedure in some institutions but not others. Research administration and finance are a strong focus of this glossary, since graduate students are unlikely to be exposed to the full scope of those topics.

¹This focus also matches the positionality of the author, who wishes to maximize the accuracy of the guides.

Inglorious Proposals (https://shomir.net/proposal_case_studies.html) presents a case study of one pre-tenure professor's experiences with grant proposals. It begins with a diagrammatic overview of all the proposals they submitted during their first five years, showing the variety of possible outcomes. Figure 2 shows an excerpt from this diagram. It continues with three case studies of proposals: one that was funded on the second submission, one that was resubmitted several times and never funded, and one that was funded on the first submission. Disclaimers clarify that the case study is not to be seen as *typical* for pre-tenure faculty, since typicality is poorly defined. Instead, it illustrates a variety of possible scenarios a faculty member may encounter.

Tenure Worth Wanting (https://shomir.net/worth_wanting.html) is a human-centered compilation of advice for pre-tenure faculty, with a focus on encouraging sustainable effort and understanding the significance of one's work. Here, *human-centeredness* refers to attending to topics such as interpersonal skills for leading a lab, distinguishing between academia as a career and as an ideal, recognizing the importance of non-academic staff, and understanding one's location in the landscape of higher education. This guide also includes critical analysis of common advice such as *quality over quantity* and *depth over breadth*, showing how they can be applied practically and when to discard them in favor of other ways to make decisions about one's work.

indirect costs or indirects: Part of a proposal budget devoted to the university's ability to host scholarly activities, but not explicitly attached to the proposal's goals. This includes needs like accounting services and building maintenance.
prep: Time needed to prepare to teach a class; when plural, the number of courses a faculty member must prepare to teach.
principal investigator (PI), lead PI, co-PI: Terms for official leadership roles on grants, indicating that the funding source recognizes a person as a leader of a funded project and responsible for it. A grant may have one PI or several in a hierarchy.

Figure 1: Excerpts from the *Guide to Professorspeak*.

3 Recommendations for Creating Similar Materials

These recommendations are partly based upon those in Wilson [8] for documenting the “hidden curriculum” of student research. I observe broadly that teaching and learning are defining activities for higher education, but teaching and learning about higher education itself receives limited attention.

First, *carefully check any assumptions about audience knowledge*. Jargon that experienced faculty are immersed in, such as *PI* or *indirects*, is off-putting or even misleading for new or aspiring faculty. Even when graduate students are exposed to certain aspects of faculty work, such as research finance or the tenure process, they may not observe enough to learn generalizable, practical knowledge.

Second, *regardless of the target audience, write with the general public in mind*. This reinforces checking assumptions about the reader's knowledge, but it also encourages an approachable, engaging tone. Moreover, faculty guidance may draw a broader audience.

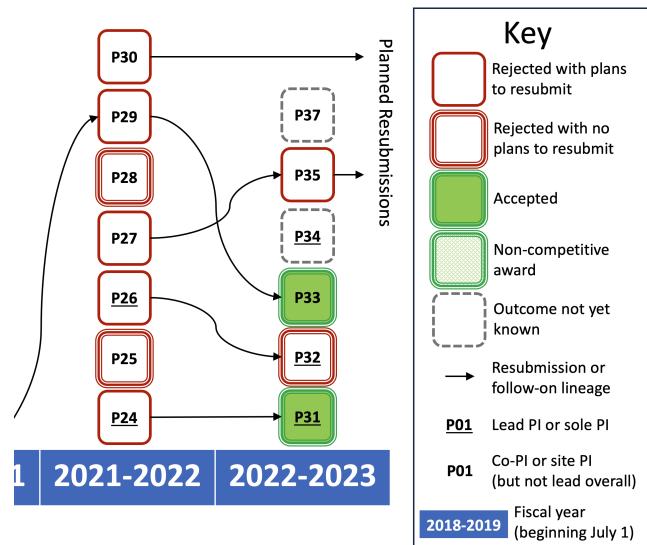


Figure 2: Excerpt from a diagram in *Inglorious Proposals*.

Anecdotally, non-academic staff at my university have reported reading these guides to better understand faculty work.

Third, *eschew the goal of writing comprehensive guidance*. The standard triad of *research, teaching, and service* covers a wide variety of responsibilities toward many groups: the university, units within it, students in courses, research advisees, external collaborators, and the general public. Linking to other resources is a way of acknowledging the limitations of any one resource, and curated references to other resources increase the value of a guide.

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