

Decoding Doctoral Student Departure: Faculty and Student Perspectives
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PROJECT SUMMARY

Despite growing enrollments in computing programs at all levels of higher education [7], high rates of doctoral attrition [6] compromise efforts to expand and diversify both the computing and technology workforce as well as the faculty pipeline which is currently facing a severe shortage [2]. To understand the mechanisms that threaten and support doctoral student persistence, this study focused on students' consideration of departure. This study first explored explanations of student departure from both the student and faculty perspectives. Then, I examined how computing faculty members conceptualize their role in doctoral student experiences and outcomes. This study explored the following research questions:

1. What are the demographic and background characteristics (e.g., gender, race/ethnicity, citizenship) of students who have considered departure?
2. Among students who have considered departure, what explanations do they give for why they considered leaving? What supports do they attribute to helping them continue in their program? How do these explanations vary by gender and race/ethnicity?
3. What factors predict students' consideration of leaving their doctoral program prior to earning a degree? How does this vary between women and men?
4. How do computing faculty conceptualize reasons for students' consideration of departure in computing doctoral programs?
5. What role do computing faculty believe they have in shaping experiences and outcomes for computing doctoral students?

RESEARCH ACTIVITIES

Drawing from conceptual models of doctoral student degree progress [3] and frameworks of institutional logics [5], this study used a sequential mixed-methods design [1]. Specifically, the quantitative stream of inquiry (RQ 1-3) relied upon doctoral student survey data from the 2018 graduate student Data Buddies Survey administered by the Center for Evaluation the Research Pipeline (CERP) to examine student explanations for why they considered leaving their program, as well as what helped them to continue. Descriptive (i.e., frequencies and crosstabulations) and inferential analyses (i.e., logistic regression) were conducted on the analytic dataset (n=1,335). Next, the qualitative inquiry (RQ 4 & 5) relied upon phenomenological [4] interviews with 10 computer science faculty who provided their own explanations for why students consider departure, and also discussed their role in shaping students' experiences and outcomes.

SUMMARY OF FINDINGS

Findings from the quantitative data reveal that more than one-third of computing doctoral students have seriously considered leaving their program. Significant differences in who considers departure speak to the persistent inequities in computing specifically, and in doctoral education broadly. Results from the student survey highlight that, beyond their demographic characteristics, students' consideration of departure is heavily influenced by their experiences and relationships with others in their department.

On the other hand, faculty primarily attribute students' thoughts of departure to students' interests and their struggles in navigating intellectual and psychosocial challenges in graduate school. While these faculty agreed that they have a great influence on students' experiences, they acknowledged that poor advisor fit can also contribute to students' consideration of departure. Faculty overwhelmingly framed their role as supportive and encouraging, striving to set students up for success in their chosen careers. Three dimensions of faculty influence on students emerged: academic guidance, career guidance, and psychosocial support.

FUTURE DISSEMINATION

Findings from this study will be shared through multiple manuscripts and conference presentations. I plan to share findings at SIGCSE and will publish additional findings in journals targeting faculty and academic administrators who support computing graduate education (e.g., ACM Inroads or ACM Transactions on Computing).

FINANCES

The proposed budget of \$3,500 was spent preparing for the research, collecting data, and conducting analyses. Specifically, the budget was spent on participant incentives and interview transcription (\$1,526), as well as on software, books, and equipment (\$1,974). With these resources, I will be able to conduct additional research analysis in the future with the existing data corpus, in service of both this study and future studies.

CONCLUSION

By focusing on the experiences that threaten or support students' persistence, this study illuminates opportunities to bolster the computing pipeline and has implications for scholars, practitioners, and faculty in doctoral education broadly and in computing. I would like to thank the SIGCSE Board for their generous support of this project.

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