It is with much pleasure that I publish the second issue of *Programmatic Perspectives* of 2018. In June of 2018, we published the terrific special issue about the Service Course, guest edited by Joanna Schreiber, Melissa Carrion, and Jessica Lauer, which brought much-needed research and commentary on the mainstay of our academic existence. The guest editors and I were surprised by the number of manuscript proposals received and the level of interest generated by that special issue. It is my sincere hope that members of our field continue to investigate teaching practices, ideologies, and histories of the service course, as well as for other staples of technical and professional communication. Moreover, I would love to see more special issues, as calls for manuscripts about specific topics seemingly motivates insightful commentary and sound research among scholars.

Following that special edition, this issue also addresses some foundational concepts of our field. First, Chris Dayley and Rebecca Walton explore the intricacies of recruiting students of marginalized backgrounds into technical communication programs. To do so, they start by examining program locations and titles, in hopes of “simulat[ing] the experience a student might have when searching for a technical and professional communication academic program” (p. 12). They note that the ambiguity of titles and the variety of a programmatic academic homes leads many students, including those students of color, to overlook many available technical and professional communication programs. They argue that to increase our recruitment of students of color into our programs, we must do more
to name and shape our programs in ways that are recognizable and memorable to potential students. Second, they report on the results of their large (across US and Canada) survey of students’ motivations for choosing technical and professional communication degree programs. Such motivations include a wide range of answers, including having had a great technical communication class, accepting the encouragement of a faculty member, seeing good potential for job growth, and identifying one’s skills in writing and editing. The results of their survey, while not generalizable to all technical communication programs, are certainly comprehensive enough to give readers information about the demographics of the population of potential students and about how potential students find a good technical communication program. Moreover, their study, while extensive and exciting, generates avenues for future research into the perceptions of potential students and ways to market our programs to increase greater student diversity.

While Dayley and Walton’s study gives an excellent overview of a wide range of technical communication programs, the next article, Thomas Ballard’s study, delves more deeply into understanding faculty perceptions of the service course at his previous institution, Iowa State University. In his study, Ballard interviewed five STEM faculty members in order to gain input and insight from the departments most likely served by the service course and most likely to seek some buy-in to the service course. His in-depth qualitative study reveals several key points from these faculty, including their perceptions of the need for teaching multimodality, transferability of skills learned, and disciplinary knowledge. While Ballard recognizes the lack of generalizability of his study and he makes no claims as to the value of his results for other institutions, his study does more than simply provide a snapshot of a few faculty’s perceptions at a single institution. His research, while primarily conducted so as to provide some context for curricular redesign of the service course at his institution, also gives some insight into how other similarly minded technical communication scholars can consider redeveloping their own institutions’ service courses and how to gather buy-in for the course from faculty members external to the department in which the service course is housed.

Following Ballard’s study of faculty perceptions of the service course, Therese Pennell, Erin Frost, and Giuseppe Getto also conduct a qualitative study of the practices and processes by which graduate students are professionalized. They interviewed 16 recently hired faculty to ask about the practices that they found helpful in their quest
for academic positions. Their findings show that recently minted PhDs appreciated and benefitted from practices external to their PhD programs as much as those professionalization practices officially sponsored through the PhD program. The study offers important processes that many PhD programs could consider implementing so as to help their PhD candidates enter academic careers.

The final article, that of Elisabeth Kramer-Simpson, investigates the responsibilities and challenges faced by faculty charged with coordinating and supervising internship opportunities for technical communication students. In her interviews of eight such internship coordinators, she notes the plethora of job duties given to internship coordinators, duties which include recruiting students, networking with community leaders, identifying appropriate positions, and clarifying appropriate intern duties for employers. Kramer-Simpson’s interview respondents also describe a number of institutional challenges that they face, not the least of which is a lack of recognition among departmental colleagues and a frequent work overload assigned to them by institutional administrators. This study fills an important gap in what we know concerning the intensity of work for the coordination of internships. Most of us have long suspected that the responsibilities of internship coordinator are intense and extensive; this study helps to prove that felt sense.

Finally, readers will find ample coverage of three recently published books in technical communication in the book reviews. Dawn Armfield’s review of Mark Ward’s study of Holocaust documents, *Deadly documents: Technical Communication, Organizational Discourse, and the Holocaust*, notes the potential of this book for a range of technical communication courses: students in courses such as “research methods, documentation/document design, ethics, and genre studies would benefit from the incorporation of this book into the curriculum.” She notes that this book will “help students connect theoretical foundations within genre, history, ethics, and documentation.” Next, Janine Butler reviews Dirk Remley’s book *How the Brain Processes Multimodal Technical Instructions*, offering to us a carefully unpacks this ambitious text. She argues that Remley’s book can benefit scholars and teachers of technical communication in three ways: coming to appreciate “the multisensory process through which individuals learn tasks,” through incorporating his “model into their assessment practices . . . [to] better evaluate how students effectively arrange modes to inform audiences,” and finally by sharing Remley’s multimodal neurocognitive “model with students in order to clarify the need for finding the appropriate combinations that facilitate
learning.” The final book review, by Sherena Huntman, concisely and clearly describes Russell Willerton’s book, Plain Language and Ethical Action: A Dialogic Approach to Technical Content in the Twenty-First Century. His book, like Ward’s, also encourages ethical analysis and understanding of documents, first by examining the history of the plain language movement, then through a survey of plain language advocates and users, and finally through analyses of several documents and websites. Huntsman notes that Willerton’s book, while not a textbook and without practical guidelines for teaching plain language practices, is well suited for pedagogical purposes as each chapter ends with critical reading questions designed to encourage class discussions.

While I would like to continue praising the authors of the research articles and books reviews included in this issue, I feel compelled to write a few words about my work as editor of this journal. When I took over the position from Lee-Ann Kastman Breuch and Tori Sadler, who were guest editing the 2016 issue after Tracy Bridgeford stepped aside, I also started a new academic position. I was excited about both new roles, but I was also very overwhelmed with the newness of both positions. It was a long, slow learning curve for me. I often begged patience from the authors published in this issue and from the authors lined up for the next two issues. For all the patience that they and the members of CPTSC have shown to me and to this journal, I am deeply and sincerely grateful. I am pleased with the quality of research and commentary of the articles herein and am humbled that I can play a small yet essential part in bringing them to the readers of Programmatic Perspectives. I look forward to working on more articles in future volumes.
Abstract. Unlike those of many other fields, academic programs in technical and professional communication lack a unifying name, definition, and location within the academy. This inconsistency can make our programs challenging for prospective students to discover. Unawareness and misconceptions of our field are barriers with implications not only for recruiting students in general but particularly for increasing student diversity—a recognized weakness of technical and professional communication academic programs. In this article, we present findings from an online survey designed to discover why students in technical and professional communication selected their major and implications regarding how the field can use this information to attract a more diverse group of students into our programs. Recommendations from this study include extending research questions about the current state of diversity in technical and professional communication programs, providing better opportunities for students who are members of underrepresented groups to learn about technical and professional communication through outreach to local high schools, developing better recruitment materials, and working with student influencers such as high school teachers and counselors, family members, and college admission offices.

Keywords. diversity, inclusion, mentoring, social justice, teaching/learning/pedagogy
Academic programs in technical and professional communication can be difficult to find. Unlike many other fields, programs in technical and professional communication lack a unifying name, definition, and location within the academy. This inconsistency can make our programs challenging for prospective students to discover. Historically, technical and professional communication is a field that scholars have found difficult to define (Allen, 2004; Dobrin, 1983; Durack, 1997; Rude, 2009). The lack of an unanimously accepted definition of technical communication has contributed to a field that is so broad that future attempts to define it universally would prove problematic (Allen, 2004). Having matured relatively recently as a scholarly discipline, technical and professional communication still struggles to gain legitimacy in its effort to secure a solid place in the academy. One way researchers have tried to gain legitimacy is by mapping the direction of scholarly research (Blakeslee & Spilka, 2004; Rude, 2009). “Agreement about research questions can strengthen disciplinary identity and give direction to a field that is still maturing” (Rude, 2009, p. 174). If agreement about research questions can strengthen identity and give direction to technical and professional communication, then the same might be said for the way we name and describe our academic programs. Degree offerings, department locations, and program names are manifestations of how we define the field in the academy. Technical and professional communication programs are influenced by the priorities of a department home, and curricular decisions are influenced by the implied definition of a program name and what students should be learning in that program.

Unawareness and misconceptions of our field are barriers with implications not only for recruiting students in general but particularly for increasing student diversity—a recognized weakness of technical and professional communication academic programs (Savage & Mattson, 2011). Many students from underrepresented groups already find the process of applying for, being admitted to, and paying for college difficult and confusing. When it comes time for these students to choose a major, our field’s lack of consistency in name, location in the academy, and definition can decrease our visibility among students not already familiar with the field.

Yet some students do find our programs and choose to study technical and professional communication, of course. How do students find our programs, and what motivates them to study technical and professional communication? How did current students learn about the field, and how did their background influence their decision to become a technical communicator? In addition to mapping the technical and
professional communication programs offered at colleges and universities, looking closely at our current students can help provide a clearer picture of who we are, where our field is headed, and how students discover our programs. Examining our student population will not only help us to define who we currently are as a discipline, but it will also help us to identify where we might be lacking in terms of attracting students from underrepresented backgrounds. Although scholars have argued that we need to increase diversity in our academic programs (Savage & Mattson, 2011), currently there is no comprehensive study which shows the extent of homogeneity or diversity among university students in technical and professional communication programs. The present study represents the beginning of an effort to determine the extent of student homogeneity as an early step towards attracting a more diverse group of students into our programs.

Presently there is no clear, comprehensive, and up-to-date picture of our programs and why they appeal to current students. Several studies have investigated the state of technical communication programs by examining curriculum (Harner & Rich, 2005; Meloncon & Henchel, 2013; Meloncon, 2012). Complementing that scholarship, this article reports findings from a study of technical and professional communication academic program names and locations alongside a subset of findings from a national survey of student perspectives and motivations to study technical and professional communication. A careful examination of our academic programs and current student population can help us understand how prospective students may perceive our programs. Also, discovering student motivations to study technical and professional communication can inform changes at the disciplinary and programmatic levels to attract and support a more diverse group of technical communicators who can bring new ideas and perspectives to shape the field. By asking current students about their experiences in discovering technical and professional communication, we can begin to identify patterns regarding how they discovered technical and professional communication and why they chose it as a field of study. Bifurcating this data allows us to compare the experiences of students from underrepresented backgrounds with those from the majority, allowing us to examine any unique challenges prospective students with minority backgrounds may face. Thus, our intention in this article is to present findings to inform a big-picture understanding that can guide technical and professional communication program recruiting to increase diversity.

We start by discussing the field’s identity within the academy and the growing interest by technical and professional communication re-
searchers in issues of social justice. Next, we describe how we conducted our study, including how we gathered program information and how we conducted our student survey. Then, we discuss our findings regarding technical and professional communication program names, department homes, and degree offerings, as well as the results of the student survey regarding motivation in choosing technical and professional communication programs. We conclude with recommendations for future studies regarding diversity and technical and professional communication academic programs and how program administrators can begin to address diversity issues through outreach to potential students and student influencers.

**Literature Review: Programmatic Identity**

With its roots in science and engineering, technical and professional communication has evolved from an educational service aimed at teaching better communication of scientific knowledge into a multifaceted discipline dedicated to a wide variety of issues involving human communication. Early teachers faced difficulty in establishing technical and professional communication as a credible academic field. This difficulty was caused in part by the lack of a disciplinary identity and the lack of a consistent administrative home within the academy (Hall, 2015; Staples, 1999). Scholars were arguing well over a decade ago that technical communication has reached disciplinary maturity (Staples, 1999). However, many of the challenges faced by early technical and professional communication scholars persist today, for example, creating a well-recognized and well-defined scholarly discipline (Allen, 2004; Durack, 1997; Rude, 2009) and establishing a place within the colleges (Hall, 2015). Although technical and professional communication has experienced dramatic growth in academic program offerings and research production in recent years (Blakeslee & Spilka, 2004; Meloncon & Henschel, 2013; Rude, 2009; Staples, 1999), the field is still not well-recognized even by departments of English and literature where most technical and professional communication programs are housed (Hall, 2015; Rentz, Debs, & Meloncon, 2010). In fact, current conceptualizations of English as a field often exclude technical and professional communication as a discipline (Hall, 2015; Rentz, Debs, & Meloncon, 2010).

This lack of coherent identity and widespread acceptance makes research regarding the current state of the academic field difficult. Some studies have focused on the question of identity as a way to explore the state of technical and professional communication as an academic discipline. Katherine Staples (1999) argued for disciplinary maturity based on the progress and expansion of technical com-
munication programs, as well as the growth of a body of innovative research. Other studies have examined the development and expansion of technical communication pedagogy as an important part of the academic offerings within higher education institutions, especially in training science and engineering majors (Connors, 2004). However, despite the recognition of technical communicators as a valuable part of the workforce (Pringle & Williams, 2005), our field remains marginalized in the academy. Nick Hall (2015) summarized some of the forms this marginalization has taken such as departments which house technical and professional communication programs hiring fewer or under-qualified technical and professional communication faculty members (Porter & Sullivan, 2007), and qualified technical and professional communication professors being given fewer chances for promotion and less recognition than their colleagues (Adams, 1993; Sides, 1994). As a result, marginalization has negatively affected the number of technical and professional communication courses offered (Hall, 2015; Sides, 1994), and has contributed to a lack of moral and financial support (Hall, 2015; MacNealy & Heaton, 1999).

To complement analyses of curriculum (see Harner & Rich, 2005; Meloncon & Henchel, 2013; Meloncon, 2012), researchers could shift the lens toward degree offerings, department homes, and programs names. Program name and department home are important factors in shaping our discipline and the perceptions of prospective students (Armstrong & Fontaine, 1989). Furthermore, technical and professional communication students themselves provide an ample source for study. Exploring student backgrounds and motives for choosing technical and professional communication programs can shed some light on what does and what does not work in increasing diversity of academic programs in terms of student population.

Student Motivations and Diversity
While examining program naming conventions and department homes can help us understand how students may perceive our programs, examining student motivation also provides significant insight for administrators because this examination can help administrators understand how students perceive higher education and the influential factors at play in their decision to choose not only a particular school, but to attend college at all (Hossler, Braxton, & Coopersmith, 1989; Palardy, 2015; Smith, Pender, & Howell, 2013). Although technical communication programs are growing rapidly (Blakeslee & Spilka, 2004; Meloncon & Henschel, 2013: Rude, 2009; Staples, 1999), technical and professional communication has good reason to be concerned with student motivation. As Susan Popham (2016) asserted, relatively
few students of color study technical and professional communication, and little scholarship explores their perspectives and motivations, despite the potential benefits of doing so: “we can strengthen our programs, can help improve the lives of the potential students, and can enhance the field of professional and technical writing” (p. 73). In discovering student motivations to study technical and professional communication, we can work to increase diversity by identifying, and intentionally cultivating, the factors that influence students in choosing technical and professional communication. This is only one necessary step among many, of course. In addition to attracting a more diverse group of students in the first place, we must also cultivate programmatic environments that are welcoming of the experiences and contributions of students from a diverse range of backgrounds. Technical and professional communication programs should be prepared and committed to the work of transitioning from merely diverse to inclusive (Jones, Moore, & Walton, 2016; Popham, 2016). That is, the goal is not only to bring more diverse groups of people into the field but to welcome the range of expertise, experiences, and insights from underrepresented groups in shifting and shaping the identity of the field itself.

Having a diverse student body is advantageous to students from both underrepresented and dominant groups. Diverse classes have been shown to increase interpersonal understanding and cognitive growth, as well as increase in positive learning outcomes for all parties (Gurin, Dey, Hurtado, & Gurin, 2002; Gurin, Nagda, & Lopex, 2004; Terenzini, Cabrera, Colbeck, Bjorklund, & Parente, 2001). Although these pedagogical benefits are important, we would warn against motivations based purely on efficacy, arguing that those in power have a responsibility to redress wrongs against marginalized and otherwise oppressed people. Although the gap is closing, the proportion of college students who identify as racial and ethnic minorities is far below the proportion in the general population (Haycock, 2001; Jeynes, 2015). This lack of diversity is reflected in technical and professional communication programs (Savage & Mattson, 2011). Previous calls for a dialogue about recruitment efforts and the lack of diversity in technical communication programs, pedagogy, and faculty have pointed out significant deficits in technical communication as a whole in regards to racial and ethnic diversity but have not addressed issues concerning other groups such as persons with disabilities and members of the LGBTQ+ community (Savage & Mattson, 2011; Savage & Matveeva, 2011).

Considerations of social justice abound in the scholarship of
technical and professional communication, such as recognizing marginalized expertise (Haas, 2012), using diverse social pedagogies in technical communication classrooms (Thralls & Blyler, 1993), engaging in fine-grained localization to account for complex contexts (Agboka, 2013), and proposing research questions to drive the future of the field (Walton & Jones, 2013). It is no surprise, then, that the field’s homogeneity has long been recognized as problematic. For example, Gerald Savage and Kyle Mattson (2011) recalled Cynthia Selfe’s challenge to the assembly at the 2003 business meeting of the Council for Programs in Technical and Scientific Communication (CPTSC) “to take up the issue of the lack of diversity in technical communication” (p. 6). In that meeting, several members committed to forming an ad hoc diversity committee, which presented its inaugural diversity report at the 2004 business meeting. This report set three goals, one of which was to “[p]romote diversity within CPTSC as an organization, our undergraduate and graduate programs in tech. [sic] communication and within tech. communication faculty” (Jones, Savage, & Yu, 2014). However, technical communication as both a scholarly and professional field persists in its lack of diversity among students, faculty, and practitioners (Jones, Savage, & Yu, 2014; Popham, 2016; Savage & Mattson, 2011; Savage & Matveeva, 2011).

In her keynote address to the 2004 CPTSC annual conference, Samantha Blackmon pointed out a difficult problem regarding building diversity in our programs: students are drawn to faculty and scholars who look like them and have similar backgrounds and values (Blackmon, 2004). Diversification of faculty is a prevalent theme when discussing the overall diversification of technical communication (Jones, Savage, & Yu, 2014; Savage & Mattson, 2011; Savage & Matveeva, 2011). Another strong theme from technical and professional communication scholars is the need for including diversity issues in our curriculum. We need to not only teach about diversity, but also bring diverse perspectives into our departments. Courses which explicitly address considerations of diversity will help our students to recognize that technical and professional documentation is not neutral and will also signal to students from differing backgrounds that we are accepting of nondominant views (Jones, Savage, & Yu, 2014; Savage & Mattson, 2011; Savage & Matveeva, 2011).

Little exploration has been done concerning the reasons current students chose to study technical and professional communication. In fact, little research has been done regarding techniques to proactively attract students to universities in general. Studies from higher education researchers regarding reasons students attend universities focus
on federal aid (Steinberg, Piraino, & Haveman, 2009), the effects of public policy (Perna, Steele, Woda, & Hibbert, 2005), and the influence of campus climate (Griffin, Muñiz, & Espinosa, 2012). In a recent editorial on the state of diversity in technical and professional communication, Natasha Jones, Gerald Savage, and Han Yu (2014) pointed out many positive actions that have been taken to create awareness and foster diversity in the field. These efforts include reaching out to historically Black colleges as well as tribal colleges and Hispanic-serving institutions; offering more sessions at conferences to address race, class, and social justice issues; and creating a culture of support for scholars interested in these issues. In the few articles that have addressed actions directed at increasing diversity within technical communication programs, each called for future research informing efforts to create a more diverse community. Gerald Savage and Kyle Mattson (2011) have called for technical and professional communication faculty and program administrators to “do a great deal more than most of us have done so far to diversify student and faculty populations in programs…” (p. 43). By examining student motivation, especially that of students from underrepresented groups, we can begin to understand how to increase diversity and inclusion within technical and professional communication academic programs.

**Methods**

To generate a current picture of technical and professional communication programs and the students within them, we engaged in two research methods: 1) identifying technical and professional communication academic programs and 2) conducting an online survey of technical and professional communication students.

**Technical and Professional Communication Program Analysis**

The goal in creating a list of technical and professional communication programs was not to create a comprehensive list of all programs. Rather, we wanted to simulate the experience a student might have when searching for a technical and professional communication academic program. To create a list of technical and professional communication programs, degree offerings, and the universities that house them, we engaged in the following process: First, we consulted the websites of major professional associations: Association of Teachers of Technical Writing (ATTW), Council for Programs in Technical and Scientific Communication (CPTSC), and the Society for Technical Communication (STC). All three sites had a list of universities with academic programs in the field, and ATTW had a second list specifically of PhD programs. Next, we compiled them into a single list of universities and removed
any duplications, resulting in a list of 205 universities, only 10 of which were outside the US and Canada. Then, the institutions outside the US and Canada were removed, as these institutions comprise a very small proportion of the group and are likely to differ in ways relevant to diversity and recruiting.

To verify the list and to collect additional details, we then visited the website of each remaining institution (195), searching for identifying key terms of the field gleaned from the names of the professional organizations. First, we searched from the university homepage for academic programs, degrees, emphases, or certificates containing any of the words technical, professional, or scientific combined with either communication or writing. If we found no results, we then visited the university’s list(s) of undergraduate and graduate degrees, reviewing these lists for any of the words technical, professional, or scientific combined with either communication or writing. If we found no results, the next step was to visit the English, communication, and engineering department websites, seeking academic programs, degrees, emphases, or certificates containing any of the words technical, professional, or scientific combined with either communication or writing. If this produced no results, the institution was removed from the list. This process narrowed our list of institutions with technical and professional communication programs to 140.

Once a program was identified, we recorded in a spreadsheet (see Appendix) the specific name of each program as well as the academic degree(s) (bachelor’s, master’s, doctorate, certificate), the home department, and program contact information (where available). We then grouped program names according to the search terms.

Degree findings were analyzed to identify the total number of universities offering a field-relevant degree at each level: bachelor’s and bachelor’s concentration, master’s and master’s concentration, doctorate, undergraduate certificate, and graduate certificate. We excluded programs which offer only a minor in technical communication because we were seeking insight relevant to recruiting students who identify primarily as technical/professional communicators and are not studying technical and professional communication as a secondary focus to supplement a different profession. For the purpose of this study, all types of bachelor’s degrees (e.g., Bachelor of Science, Bachelor of Arts) were grouped together into the total number of bachelor’s degrees and bachelor’s degree emphases. By “emphases” we refer to degrees in a broader category that allow students to focus on technical and professional communication through a series of classes called an emphasis or concentration (e.g., Bachelor of Arts in English with an
emphasis in Technical Communication). Master’s degrees were similarly categorized into a single group containing master’s degrees and master’s emphases.

The list of departments housing technical and professional communication degree programs were grouped according to similar discipline. For example, departments of literature and writing were grouped together with English departments. All sciences were grouped into one category, and communication, journalism, and media departments were classified jointly in another category.

The resultant spreadsheet not only gave us an excellent snapshot of technical and professional communication academic programs, but also sheds light upon some of our student survey data. This triangulation can identify some of the obstacles students face in becoming a technical and professional communication major.

**Student Survey**
Along with generating a big-picture view of technical and professional communication programs, their names, degree offerings, and department homes, we wanted to learn what motivates students to choose these programs. We were interested in an overall view of what motivates students in general to choose technical and professional communication programs, as well as what specifically motivates students from underrepresented backgrounds to choose our programs. There are many kinds and sources of information that could be relevant to the task of diversifying our field. Our study only looked at one of these sources: the perspectives of current students. We created an online survey, approved by the institutional review board (IRB General Review #7006) to reach as many technical and professional communication students as possible while collecting data in a way that could be easily analyzed.

To recruit survey participants, we emailed the ATTW and CPTSC listservs, asking faculty members to share the survey link with their students. Additionally, for each of the institutions in our spreadsheet that provided program contact information, we emailed the program contact to invite faculty to share our survey link with all technical and professional communication students. When a program contact could not be found, we contacted the department directly, usually by emailing a staff assistant or the department chair’s office. After the initial invitation was distributed, a follow-up email was sent again asking faculty contacts to send the survey link to students. We also asked each university contact to disclose the number of students in their technical and professional communication program. When the program or department contact did not report the number of students, we contacted
the registrar’s office to request the number of technical and professional communication students from the university’s records.

Survey-inclusion criteria included 1) being at least 18 years old and 2) currently studying in a technical and professional communication-related field at the university level. The survey was created in Qualtrics, an online survey generator and data collector. After an initial draft of the survey was created, faculty members were consulted and solicited for advice on question content and construction. The survey was pilot tested with members of Utah State University’s student branch of the Society for Technical Communication. Improvements were made based on faculty and student feedback. The final survey included 29 questions, a subset of which inform this article. Not all questions were visible to every student. Some questions appeared based on how a previous question was answered. For example, Question 4 asks students to choose as many options as apply regarding the factors that influenced them to study technical and professional communication. Each selected option triggered a follow-up question.

After 15 weeks, the survey was closed, having collected responses from a total of 325 students, with 295 completing the survey for a 91% completion rate. Respondents came from a reported 51 institutions. Reports were created to separate the results based on independent variables such as race/ethnicity, gender identity, age, and degree level. Data from each set of independent variables were placed in a frequency distribution table as part of a univariate analysis. Distribution data were compared and analyzed for differences among variables.

In considering the limitations of our study, we recognize that at least two limitations affect its generalizability. The first is the relatively small sample size of our online student survey. It is likely that several thousand students are studying technical and professional communication in the US and Canada. With only 325 respondents, the survey cannot produce results that are statistically representative of the entire population. A survey which is large enough and inclusive enough to produce statistically representative results would prove difficult. However, several smaller surveys, perhaps conducted at the individual program level, may prove valuable and allow our field to create a more comprehensive picture of the motivational factors influencing students to study technical and professional communication. The second limitation of this study is not every academic program that would claim an affinity with the technical and professional communication field is represented in our program analysis. Different selection procedures would likely result in somewhat different lists of academic programs. Creating a truly comprehensive list of technical and profes-
sional communication programs would prove difficult without a shared standard of what is and is not a technical and professional communication program; however, a dedicated project focused on this goal could give us a very valuable resource for future studies regarding technical and professional communication academic programs.

Findings and Discussion
Below we report findings first about academic programs in technical and professional communication followed by findings regarding student motivations to study technical and professional communication. Discussion of these findings is integrated throughout, in light of the goal to increase diversity in our academic programs.

Description of Programs
Academic programs can be described in a variety of ways, including course offerings, research focus, job placement, and many others. Our study focused on program name, degree levels offered, and department home because of these factors’ influence on public perceptions of a discipline (Armstrong & Fontaine, 1989). We found 140 universities with active technical and professional communication programs that grant some form of degree(s) or certificate(s). Technical and professional communication programs on our list are somewhat dispersed geographically with higher concentrations of programs in the Eastern US and around large population centers and with only ten programs based in Canada.

Figure 1. Program Locations of Undergraduate Degrees, Graduate Degrees, and Certificate Programs in Our Field

Some programs treat the terms “technical communication” and “professional writing” as synonyms, while others see them as worthy of distinct
degree programs. Forty-three universities offer a degree with at least two of our key search terms in the title. For example, Arcadia University’s Master’s degree program is titled “Technical and Professional Writing,” and Carnegie Mellon University’s bachelor of science degree programs. For example, Arcadia University’s master’s degree program is called “Technical Writing and Communication.” This suggests that Arcadia University, and institutions with a similar naming convention, do not distinguish among key terms of the discipline. Other programs make distinctions. Fifty-four programs have two separate degrees that include our key search terms, such as Northeastern University, which houses a bachelor’s degree in professional communication and a master’s degree in technical communication. Another example is the University of California, Berkeley, whose extension office offers separate certificate programs in professional writing and technical communication. These distinctions suggest that at certain institutions, professional writing and technical communication are considered different enough to warrant different degree programs.

Program names vary widely, as well. Several combinations of the words “technical,” “professional,” “scientific,” “writing,” and “communication” exist in program titles. When departments use different names for different degree programs relevant to technical and professional communication, this implies that the meaning ascribed to these names is fundamentally different, but when departments use the terms interchangeably, it suggests that the meaning of these terms, in the context of a degree program offering, is basically the same. A future research project could seek to clarify the meaning of these terms by interviewing administrators about the differences in these names, giving researchers and other interested parties a better idea of how technical and professional communication programs could be defined to enhance clarity for prospective students.

**Figure 2. Program Names in the Titles of Academic Programs**
Comparing program names between undergraduate and graduate programs shows no noteworthy difference between the two. Many undergraduate programs share the same program name with a graduate program, and many undergraduate and graduate programs from the same institution have different names. There appears to be no pattern for undergraduate versus graduate program naming; however, the wide variety of program names likely affects undergraduate students more than graduate students as undergraduate students have had much less experience with technical and professional communication and generally, graduate students have already established themselves as technical communicators.

Some program titles include additional terms to further define and describe the program beyond technical/professional/scientific and writing/communication. Common examples include “rhetoric” and “business.” These terms seem to emphasize a specific focus. A program with the word “business” in the title may be trying to distinguish itself as offering a specialty in business writing, while a program with “rhetoric” in the title may be interested in advertising its focus on the more humanistic side of the discipline.

**Figure 3. Secondary Terms in the Titles of Academic Programs**

The 140 universities had a total of 281 technical and professional communication programs, with four institutions housing relevant programs in separate departments. The majority of technical and professional communication programs (100) were in English departments and departments related to English, such as Literature and Writing. Communication departments represented the next highest concentration with 21 programs, followed by humanities departments with 12,
extended studies departments with 10, technical and professional communication departments with nine, engineering, technology, and science departments with four each, business and art departments with three each, and one in a design department.

We see the dominance of English departments as the administrative home for technical and professional communication programs as reflecting the turn from positivism toward a more humanistic discipline (Miller, 1979; Zappen, 1987). The data seems to suggest that expertise critical to the success of professional writers is associated with English departments. This expertise likely includes the ability to write with clarity as well as to engage in critical thinking and employ skillful rhetoric. Supporting this inference, our online survey findings (reported in the next section) indicate that students choose technical and professional communication programs based on the perception that their talents and skills fit well with the field’s necessary expertise. Technical and professional communication programs with administrative homes in English departments offer students with writing skills a place to get in-depth training related to their specific talents and interests.

**Figure 4. Home Departments**

Degree types also show a wide variation. Some institutions offer only a bachelor’s degree, others offer only a master’s degree or certificate, and a few institutions have bachelor’s, master’s, and PhD programs. Bachelor’s degrees are the most numerous degree program. The universities in our spreadsheet offer 100 separate undergraduate degrees in our field. Master’s degrees are found in 67 institutions. Many universities offer technical and professional communication as a concentration or emphasis. For example, an institution may offer a
bachelor’s degree in English with an emphasis in technical writing. In addition to core classes in the broader discipline, a degree program with an emphasis in technical writing consists of a group of classes specifically focused on technical writing skills. Of the 100 bachelor’s degree programs, 49 are a concentration or emphasis. Of the 67 master’s degrees, 24 are an emphasis or concentration.

Fourteen universities on our list offer a relevant PhD, including PhD programs which grant a degree in technical and professional communication specifically, as well as programs which offer technical and professional communication as a research concentration. There are 162 certificate programs on our list. Five universities have continuing/extended studies programs offering a technical and professional communication certificate. The certificate programs housed in continuing/extended studies departments are typically offered to the public as a credential rather than an academic degree and do not require the student to be admitted to the university. The findings of our online survey (reported in the next section) indicate that students who are not of traditional college age enroll in technical and professional communication programs to advance their careers. Certificates can offer great opportunities for students already working full time to earn a credential and gain knowledge that may lead to career advancement.

Figure 5. Types of Degrees and Certificates

<table>
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Note: Degree offerings add up to more than 140 because some institutions offer more than one type of degree or certificate in the field.
We suspect that the inconsistency in program names, as well as the variance in program location, not only makes it difficult to describe and define the field. It can also create a substantial obstacle for prospective students in finding, and choosing to study in, a technical and professional communication program if those students are not already aware of the field. Based on our survey data (reported in the next section), we suspect this obstacle may disproportionally affect students from underrepresented groups such as racial and ethnic minorities. Compared to White students, a smaller percentage of members of racial and ethnic minority groups indicated that they were influenced to study technical and professional communication by their family or by a university staff member (such as an adviser). Students engage with their families and university advisers early in their university careers when they select a major.

Description of Students
In this section, we describe the distribution of survey participants according to gender, age, and race/ethnicity.

Demographic descriptors. Along with investigating academic degree program offerings, names, and department homes, we also sought to discover who our students are and what influenced them to study technical and professional communication. Survey responses were analyzed according to the overall student population and according to various groups of independent variables such as race and ethnicity, gender identity, and age. Seventy-five percent of survey respondents identified as women, 22% as men, and 3% as another identity such as transgender or non-binary. This gender distribution was more heavily female than the national average of about 57% of US
university students (Anderson, 2014).

**Figure 7. Gender Identity**

![Gender Identity Pie Chart]

The majority of respondents were of traditional college age, with 54% in the 18-25 year range. The next-largest age group was 26-35 years with 20%, then 36-45 years with 15%, 46-55 with 9%, and 56 years or older with 2%.

**Figure 8. Age Range**

![Age Range Pie Chart]

The vast majority of students who responded to the survey identified as solely White (84%). Every other racial and ethnic group represented less than 10% of the responding population. In reporting racial/ethnic identity, respondents were able to choose as many racial/ethnic categories with which they identified. Students who identified as
solely Asian and solely African American were the next-largest groups, each with 6% of respondents. The majority of respondents (92%) indicated their country of citizenship as the United States, 4% Canada, and 1% India.

**Figure 9: Racial/Ethnic Identity**

![Racial/Ethnic Identity](image)

Influences to study technical and professional communication. Survey respondents were asked to identify factors that influenced them to study technical and professional communication. The list of choices was based on Dayley’s experience working in college admissions and academic research on student motivation and college choice (Breen & Goldthorpe, 1997; MacLeod, 1987; Morgan, 2008; Sewell, Haller, & Portes 1969). Respondents could select as many choices as applied and write in their own answer. A large majority of respondents (80%) indicated that they chose technical and professional communication because they believed that their talents and interests aligned well with the field. Other popular influential factors included the perception of a favorable job market (47%) and a great technical and professional communication class (20%).

Other influential factors included different types of mentors. The most common of these mentors was a faculty member (31%), followed by a professional in the field (19%), a staff member at their college/university (18%), parents or other family members (14%), other students (11%), and someone at their high school/secondary school (8%). These numbers reflect the influence particular types of people have on students’ decision to study technical and professional communication. Particularly influential are faculty members, who play an important role in decision making for almost a third of survey participants. These findings correspond with other research showing that the influence of mentors plays a very important role in college choice (Breen &
Goldthorpe, 1997; MacLeod, 1987; Morgan, 2008; Sewell, Haller, & Portes 1969). The importance of faculty influence is related to another finding from our survey, which showed that 20% of respondents were influenced to choose technical and professional communication because of a great class they took in the field. This finding is corroborated in higher education research showing that many students select or reject a major based on the quality of the first instructor they have in the discipline (Chambliss & Takacs, 2013).

Eighteen percent of respondents wrote in other factors that influenced their decision to study technical and professional communication. The most common answer was a desire for more education to advance in their career. Similarly, the next most-common reason was that their program relates to their current job. This pattern shows that one important factor in students choosing technical and professional communication is its relevance to their current career. Rather than earning a degree first, many students already work in the field and then seek a relevant degree to increase knowledge or obtain a promotion.

Of the students who chose technical and professional communication because of their personal talents and interests, 91% indicated that they have a talent for writing which they thought would be relevant to a technical and professional communication job, and 82% said they enjoy writing and want it to be a part of their career. Seventy-six percent of respondents believe they have a talent for editing, 69% said they enjoy reading and want it to be a part of their career, and 66% believe that their ability to understand people would be relevant to a technical and professional communication career. From this data, we can see that the perception of talent or ability in written communication is a very important factor in students' decision to study technical and professional communication.

Once students have identified an aptitude for writing, they may be interested in using that talent in a future career. The key is in connecting potential students who have a self-identified knack for writing with technical and professional communication. We need to help students with writing ability to see the relevance of that particular talent to our programs. Although the specific names of our field’s academic programs vary (as described in the previous section), the key terms writing and/or communication are in the name of our field (and therefore also in our professional organizations, academic programs, journals, etc.). This prominence of the terms writing and communication is good news, as it indicates a connection to the number-one influential factor for survey participants: their own propensity for writing and other communication skills. One key, then, to recruiting technical and
Informing Efforts to Increase Diversity

professional communication majors is educating prospective and new college students about the existence of our field. Another key is developing a nuanced understanding of what is required to take advantage of the field’s favorable job prospects. For example, these students must be taught that core writing skills are a good starting point but are not solely sufficient for getting a job in the field (Blythe, Lauer, & Curran, 2014; Lanier, 2009). We need to show students that we can help them gain the skills and expertise necessary to be successful.

Figure 10: Influential Factors

Note: Students could select as many as applied. Some answers triggered a follow-up question.

One of the goals of this study was to examine motivations for students from underrepresented groups to study technical and professional communication, with the intent of increasing diversity in technical and professional communication programs. Because such a small proportion of respondents identified as members of racial and ethnic minorities, we bifurcated the data into, 1) members of racial and ethnic minority groups and 2) respondents who identified as solely White. We explicitly note here that neither of these groups is monolithic, and individuals do not stand in as representatives of the groups with which they identify (i.e., tokenism). However, with so few respondents who identify as racial and ethnic minorities, it was helpful to have a larger data set to compare to the majority group. When comparing motivations for students who identify as racial/ethnic minorities with those who identify as solely White, major influential factors are largely the same. Both groups were motivated to choose a technical and profes-
ational communication major because it fit their skill set (77% minorities and 83% White), and both were influenced by perceived favorable job prospects (48% minorities and 50% White).

However, differences emerged regarding other factors, such as the influence of a university staff member: 20% of White respondents selected this answer, compared to only 6% of students from underrepresented racial/ethnic groups. Other large disparities can be seen in the influence of family and friends, where 12% of White students indicated that friends or other students influenced them to study technical and professional communication, but no students who identified as racial and ethnic minorities did, and 15% of White students indicated being influenced to study technical and professional communication by their parents or guardians while only 3% of respondents from racial and ethnic minority groups indicated the same. This disparity suggests that certain types of mentors and advisers may be less likely to point minority students toward technical and professional communication. We speculate that, in the case of parents and other family members, this pattern may reflect the historic homogeneity of technical and professional communication as an industry and academic field. In other words, White family members may influence students to study technical and professional communication because members of that generation who work in, and are therefore familiar with, technical and professional communication are more likely to be White. We see the disparity in the perceived influence of staff members, such as academic advisers, as both concerning (minority students appear not to be guided toward our field by their advisers) and promising (academic advisers may be an underutilized resource in our efforts to attract a more diverse pool of students). Interestingly, respondents from both White and racial and ethnic minority groups selected faculty members as influential in the decision to choose a technical and professional communication program at about the same percentage (30% and 35% respectively). This may indicate that although the influence of most important relations is inconsistent between dominant and non-dominant groups, the influence of faculty members is consistent for both groups.

Comparing respondents by gender identity showed very little difference in influential factors, with perceived talent, favorable job prospects, and influence by a faculty member being the top three factors for each group.

Examining motivational factors by age group showed that the relevance of technical and professional communication to their talents and interests was the most common answer across every age group. However, for every age group older than 25 years (every group except
the youngest), the write-in answer option was the second or third most-popular choice. Analyzing those responses showed that respondents who chose this option were influenced by advancement at work or were already working in the field and chose a degree option that informed what they were already doing. This pattern suggests that older students are likely to be working professionals whose motivation centers around their current involvement in the field.

**Initial major.** A question with important implications for recruiting strategies is whether students intended to study technical communication before beginning their university program or selected this field later in their academic career. Of course, it is important to separate undergraduate and graduate students when analyzing these responses. In general, students pursuing advanced degrees have already chosen a field of study and do not change that field as often as undergraduates do.

Of undergraduate respondents, 37% indicated they planned to study technical and professional communication before attending college. In contrast, 75% of graduate students indicated that they intended to study technical and professional communication prior to enrolling. This disparity between undergraduate and graduate respondents aligns with our expectations. Many undergraduate students seem to discover technical and professional communication later in their college careers, having never heard of the field previously. Graduate students generally know not just the field in which they want to study but also their preferred major professor. What is surprising about this result is not the contrast between the two groups but that the contrast is not larger. Conventional wisdom may suggest that undergraduate students come to technical and professional communication indirectly after becoming dissatisfied with a different major (e.g., English majors who wanted to be able to “make money” and science/engineering majors who discovered they “didn’t like the math part”). Although our results do suggest that most undergraduate students did not enter college intending to study technical and professional communication, more than a third (37%) did. Respondents who indicated they knew they would study technical and professional communication before even enrolling in college or university (49 respondents) were given a follow-up question regarding whether they chose their college because of its technical and professional communication program. Of these 49 respondents, 25 indicated that they selected their university because of the technical and professional communication program, while 16 said that they knew they would study technical and professional communication but did not choose the school because of the
technical and professional communication program. There were also eight respondents who indicated other reasons for choosing their specific institution. Of those who gave another reason, six stated that they chose their university and then found the technical and professional communication program (indicating that they answered the previous question incorrectly), and two indicated that they chose the university for reasons of convenience. For students who are already interested in the field, the program itself seems to be an important factor in attracting students. We acknowledge that the sample size of this survey is too small to be statistically representative of all technical and professional communication students in the US and Canada. But this pattern among survey participants is encouraging: indicating that about half of students who intended to study technical and professional communication before enrolling in university selected their university for its technical and professional communication program. Like the influence of students’ self-identified talents, this finding also suggests the importance of educating prospective college students about our field and the academic programs that prepare people to enter it.

Of the 85 undergraduate students who indicated they did not intend to study technical and professional communication upon beginning college, 54 indicated that they changed their major from a previous major. These previous majors varied widely, with 13 having transferred from engineering-related majors, seven from English and literature, six from the sciences, four from psychology, four from health-related fields, four from fine arts, three from journalism, three from foreign languages, three from education, two from environmental studies, two from undeclared majors, and one each from business and criminal justice. Anecdotally, technical and professional communication program administrators seem to expect their students to come from other majors. Many students, faculty, and practitioners joke about having “fallen into” technical communication, implying that initially it was not their intended field. It may be beneficial, then, to investigate why this is so when other fields seem to attract students immediately after graduating from high school. Again, we see the potential drawback of inconsistencies in technical and professional communication program names, definitions, and locations within the academy. In other words, even those students whose talents and interests align with the field and who seek favorable job prospects (survey respondents’ top two reasons for studying technical and professional communication), must be aware of the field and able to locate its corresponding academic programs before electing to study technical and professional communication.
The proportion of graduate students choosing technical communication before enrollment was, as expected, higher than that of undergraduates. Of the 30 graduate students who indicated they did not initially choose a technical and professional communication degree program, 13 changed their major to technical and professional communication from another discipline after entering grad school. These disciplines included English literature, English, creative writing, criminal justice, biology, administration, anthropology, and art. Three did not specify a major, and two indicated that they began attending graduate school without a specific major in mind. Fifteen of the 30 graduate students indicated that they studied something other than technical and professional communication as an undergraduate student but were studying technical and professional communication in graduate school. These respondents did not change their major in graduate school but rather made the change after choosing an undergraduate degree.

Of the graduate students who indicated that they did intend to study technical communication before enrollment, 64 (74% of graduate student survey respondents) said that they chose their institution because of the technical and professional communication program while 10 (11% of graduate student survey respondents) said they knew they wanted to study technical and professional communication but did not choose the school because of the program. These responses show that, for graduate students, the program itself was a very important part of what drew the student to a particular college or university.

Survey respondents who identified as racial or ethnic minorities showed a slightly different result. As expected, most graduate students of color knew they would study technical and professional communication before enrolling at their college or university. The percentage was similar to that of the overall population with 22 graduate students of color (76%) indicating they knew they wanted to choose technical and professional communication before enrolling. Undergraduate minority respondents were split with 10 (50%) respondents indicating they knew they would study technical and professional communication before going to college and 10 (50%) saying they did not intend to study technical and professional communication prior to enrolling. With such a small sample size, it is difficult to infer why a higher percentage of survey participants of color knew they were going to study technical and professional communication before enrolling at a higher education institution. Perhaps with a bigger sample size, the results would be closer to that of White students, or perhaps students of color who choose to study technical and professional communication have
done more research regarding careers or majors that fit their interests and therefore enter college more focused on a particular goal rather than waiting to choose a major or discovering this field during college. Our results here point to the need for further study to better clarify these findings.

**Implications for Technical and Professional Communication Programs**

In this section, we present implications of our findings for technical and professional communication programs that aim to improve diversity and strive toward inclusivity.

**Non-Traditional Students**

In higher education, we often speak of students outside of the traditional college-age range as being “non-traditional.” In some ways this label fits well. Our “non-traditional” students are likely coming from the professional world. These students have jobs and are working in industry. Our findings suggest that technical and professional communication attracts older students with a desire to move up in their company or who want to learn more about their current profession. This pattern is reflected in responses from both undergraduate and graduate students. Although these students are motivated by the prospect of a better financial situation, it is in a different way than students attending college directly out of high school. Older technical and professional communication students already have a job and an industry context for their work. We attract these students into our academic programs by showing them how we can supplement or extend their current expertise. Training in design, critical thinking, leadership, and research can greatly enhance one’s attractiveness for promotion. “Non-traditional” students need to see that a degree is worth their time and money.

One way to show the value of a degree in technical and professional communication is by reaching out to local companies and professional organizations such as the Society for Technical Communication (STC) and emphasizing learning opportunities that could enhance professionals’ abilities to move up or secure a more attractive job offer. It is possible that some relevant employees may not identify as professional communicators and may not be aware that ours are degree programs that can aid their professional development. If other non-traditional students can see successful examples in our former students, they may be drawn to the possibilities a degree can create in their own career.
Access and Diversity
Perhaps the most important finding of this study is that, compared to students of color, a higher proportion of White respondents indicated that they were influenced to study technical and professional communication by specific types of mentors within and outside the academy. This finding has significant implications for the racial and ethnic diversity of our programs when considered alongside the relative newness of our field, the inconsistent program names, and variety of program locations in the academy. These characteristics can make our field difficult to discover without a mentor steering students toward technical and professional communication. In other words, if students are not already familiar with our field, and if they are not encouraged by a faculty member, family member, or academic adviser to pursue technical and professional communication, then they may not know about or be able to find our programs. The survey found that the influence of family and friends was rarely identified as an influence for studying technical and professional communication among students of color. Friends, family members, teachers, and others around students can have a large impact on their decision to attend college and on what major they will choose. We need to identify and reach out to student influencers. Teachers and parents, as well as high school counselors and college recruiters, all talk to students about college and career choices. Educating these influencers about technical and professional communication may be one useful strategy for attracting a wider diversity of prospective students whose talents and interests are relevant to the field.

In examining student motivation, we not only aim to discover why students choose to study technical and professional communication but particularly to aid technical and professional communication programs in attracting a more diverse group of students. The survey suggests that most undergraduate students discover the field after enrolling in college and leaving their original major. Many graduate students discover the major after finding a need for more education in their quest for promotion. One obvious requirement for attracting students to our field is to make sure they know that technical and professional communication exists. More consistent program names could aid potential students in recognizing the relation of academic program to its corresponding professional field. A program name can have a large impact on the perception students have about that program: “in the academy, the names we choose, [...] are understood to represent the true nature of what we have named, and in that sense, they ‘create’ the course, program, or job” (Armstrong & Fontaine, 1989, p. 8).
recognize that coming to a field-wide consensus on academic program names is likely unfeasible. After all, program names serve as unique identifiers and may represent the specific focus of a particular program or department. Therefore, realistic implications of these findings suggest the importance of conveying connections that may not be clear to prospective students but are certainly relevant to their interests, such as those between the broader field of technical and professional communication and our own particular programs, the field of technical and professional communication and its range of career opportunities, and the range of technical and professional communication career opportunities and corresponding communication skills and strategies.

If we were to move forward as a field toward more consistent program names, one tempting strategy may be looking at relevant jobs for patterns among career opportunities. For example, we might perform an analysis similar to that of Eva Brumberger and Claire Lauer (2015), analyzing field-relevant job ads for key words to inform a consistent program name. Similarly, we could survey technical and professional communication alumni for patterns in their career trajectories and job titles, using those patterns as inspiration for a consistent program name. Matching program name to industry may aid in name recognition and help students connect a career field with our degree offerings. That said, a significant drawback of these industry-inspired strategies is their suitability for replicating past outcomes and privileging dominant paths, rather than inspiring new future directions, such as those explicitly linking one’s values and career. As Natasha Jones, Gerald Savage, and Han Yu (2014) assert, “new directions for technical communication can be highly attractive to students and even to many current scholars and practitioners for whom issues of peace, social justice, equal rights, and environmental justice represent higher values and the potential for more satisfying careers than are offered in traditional sites of practice for technical communicators” (p. 147). Thus, the more realistic suggestion above—of making clear connections across the technical and professional communication field, its potential career paths, relevant communication skills and strategies, and academic programs—may well be the better option.

Previous calls for a dialogue about recruitment efforts and the lack of diversity in technical communication programs, pedagogy, and faculty have pointed out significant deficits in technical communication as a whole in regards to racial and ethnic diversity (Savage & Mattson, 2011; Savage & Matveeva, 2011). Mentor influence is important in the decision-making process for prospective students. Our current students are a key group of future mentors. If our current group of
students is not diverse, then we must be all-the-more proactive in our efforts to develop a diverse group of future mentors who can help influence future students, researchers, and industry professionals. One proactive strategy would be to visit high schools, college-recruiting fairs, and college-admissions workshops (such as College Horizons; see http://www.collegehorizons.org/about) with large populations of underrepresented groups. Outreach initiatives to prospective college students could begin with the existence of technical and professional communication and its relevance to particular talents and interests. Across survey respondents regardless of demographics, the most commonly identified influence to study technical and professional communication was discovering that relevance. When students find that they are good at writing and editing, and that these skills are integral to a field with good job prospects, they may not only pursue technical and professional communication but also select their university for its technical and professional communication program. We suspect that outreach to secondary schools, and the teachers at those schools, could go a long way to educate prospective students about what the discipline is and what it can offer.

**Conclusion**

More research is necessary on the needs and perceptions of technical and professional communication students, especially those from various underrepresented groups. Scholars should extend questions about the current state of diversity in our programs with research-based strategies to increase that diversity. What other factors are affecting student choice? How do students perceive technical and professional communication as a field? What influence does program naming conventions have on a student’s decision to choose a technical and professional communication academic program? Does the homogeneity of the field deter students from choosing it? How diverse is technical communication compared to other academic fields? What type of recruitment materials are we using, are they effective, and with whom? What are some prevalent recruitment techniques technical and professional communication programs are using to attract students? What type of outreach programs can be effective in spreading the word about technical and professional communication as a field, particularly with prospective college students who are members of underrepresented groups? These are only a few questions researchers can begin to explore as we make it a priority to attract and support a diverse body of students in our programs.

Attracting university students from underrepresented back-
grounds is a much larger goal than can be achieved directly and solely by technical and professional communication program administrators. Technical and professional communication programs can be arduous to find without the influence of a mentor or someone with insider knowledge. If students from underrepresented groups are less likely to be influenced toward our field by such mentors, they may have an especially difficult time discovering our programs. And yet, earning a degree in technical and professional communication could be very appealing to prospective students with an aptitude for writing and for working professionals who could benefit from advanced training and the prestige that comes with a college degree. Although some effort can be made on college campuses themselves, we cannot limit our search to within the academy walls. Undergraduate programs are limited to the students brought in by admissions offices, and graduate programs are limited to people who have already earned undergraduate degrees. If the admissions office does not bring in a diverse student body, then our programs will reflect this limitation as well. To attract a more diverse group of students into technical and professional communication programs, we need to provide better opportunities for students from underrepresented backgrounds to learn about our field in the first place. If we are serious about creating diverse classes, we as a field need to become more involved in student recruitment, earlier in students’ academic careers.

Attracting a more diverse body of students is just one early step. We must also make our programs welcoming spaces for students from a wide range of backgrounds; we must be willing not only to shape but to be shaped by those who will become the next generation of industry practitioners and faculty members. Thus, we should seek out student perceptions regarding diversity and inclusion in our programs, and we need to seek collaborative opportunities with admission offices and other departments on our campuses to explore ways in which we can make college more accessible to students of all backgrounds. We need to identify and reach out to student influencers such as high school teachers, parents, and administrators. By educating these influencers about technical and professional communication, we can begin to help prospective students identify the field early, encouraging these prospective students to enrich not only their own future careers but also the field at large by bringing their diverse perspectives, backgrounds, and expertise to our field.
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Savage, Gerald, & Matveeva, Natalia. (2011). Toward racial and ethnic


## Technical and Professional Communication Programs

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<td>Wright State University</td>
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</table>
Author Information

**Chris Dayley** is a PhD candidate at Utah State University. His primary research interests include issues of social justice, diversity and inclusion, and retention in technical and professional communication academic programs. He has presented his research at several academic conferences including SIGDOC, IEEE ProComm, and the CPTSC Annual Meeting.

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Abstract. This study seeks further understanding of how faculty members from various disciplines view the technical communication service course and its role as part of undergraduate students' curriculum in their respective fields. The author interviewed five participants from the fields of Agriculture and Biosystems Engineering, Biological and Chemical Engineering, Industrial and Manufacturing Systems Engineering, Materials Science and Engineering, and Natural Resources and Ecology Management. The interview transcripts were analyzed qualitatively from a phenomenological perspective. Takeaways regarding specific genres and concepts in technical communication are considered.

Keywords. Collaboration, Curriculum Development, Interdisciplinary Studies, Service Course, STEM, Teaching/Learning/Pedagogy

The disciplines of science, technology, engineering, and math (STEM) are natural allies of technical communication as a field and have been since the earliest beginnings of technical communication in US higher education at the turn of the 19th century, when it was called “engineering writing” and was focused on helping engineers communicate better in their professions (Connors, 1982; Kynell, 1999). The parties involved in technical communication have expanded well beyond engineering over the years, and specialists from a variety of disciplines take part in and benefit from the ongoing discussion about technical communication and its implications for society. Faculty from STEM disciplines in particular have reason to be invested in how their students approach and learn technical...
communication proficiencies, as communication continues to be a primary learning outcome that STEM students are not achieving as well as employers and other stakeholders might like (Lattuca, Terenzini, & Volkwein, 2006; Reave, 2004; Wolfe, 2009).

Technical communication, in turn, has a long history at schools that emphasize engineering, such as land-grant universities and technical institutes. Departments of English (or, sometimes, dedicated departments of Rhetoric and/or Writing Studies) frequently offer technical communication service courses to help STEM students master the concepts and genres of technical communication at such institutions. Yet, controversy surrounds the technical communication service course in our literature, as Joanna Wolfe (2009) and Julie D. Ford (2004) both question how effective the stand-alone technical communication course offered through the English department can be. English teachers are not disciplinary specialists, and as such, they are ill-equipped to understand the discipline-specific communication needs of STEM students. When STEM faculty are invested in the success of the technical communication service course, however, English faculty can receive better guidance on how to tailor the course to disciplinary needs. Jon A. Leydens and Jen Schneider (2009) suggest that the stand-alone technical communication service course is not the ideal scenario for achieving cross-disciplinary faculty involvement; in fact, it ranks fourth on their list of best methods for faculty buy-in (p. 267). Yet, the technical communication service course remains, for better or worse, a reality and a necessity at many institutions. And as long as English faculty are charged with administering and teaching such courses, the need to more directly and effectively address discipline-specific goals for the technical communication service course, in turn, presents a need for collaboration with STEM faculty.

In recent years, faculty in the English department at Iowa State University, where the study discussed in this article took place, have recognized a need to create more uniformity across sections of the undergraduate technical communication service course that we offer for majors of engineering, science, and other non-English departments. Because our technical communication service course is well established and fulfills the need to educate STEM students in technical communication in a way few other courses currently can at our institution, the next course of action that we recently identified was to pilot a more unified curriculum that will help meet the needs of our various institutional interests and stakeholders.

The current study involved interviews with STEM faculty at Iowa State University to gain “input from technical faculty on learning goals
and objectives,” as Leydens and Schneider suggest curriculum planners should (p. 267), as part of our effort to better understand STEM faculty members’ expectations for the stand-alone, upper-division technical communication course. Insights gained from these interviews inform technical communication service course pedagogy and how the service course might better serve the needs of STEM students and faculty in the future. Topics of note included multimodality, transferring learning, and the importance of disciplinary scholarship. It is hoped that the implications of this study may assist readers who find themselves as technical communication faculty involved in the ongoing process of curricular assessment and redesign. And, even as we face the reality of English-department-hosted technical communication courses outside of students’ disciplines, we must strive for faculty and student buy-in and disciplinary relevance. The nature of the technical communication service course is discussed next to better situate such a consideration of its perception by STEM faculty.

**Review of Literature:**

**WAC/WID and the Technical Communication Service Course**

Several studies have identified the desire most engineering faculty have for their students to communicate better (Reave, 2004). In fact, much of this identified need for better communication from engineering students come through feedback from industry professionals (Lattuca, Terenzini, & Volkwein, 2006). The exigency for finding better ways to educate STEM students in technical communication is clear. What is less clear is the best course of action for providing such education. Often the debate centers around what place stand-alone service courses in communication should have in the university, including first-year composition (FYC); science, technical, and business communication; and proposal writing.

Ford (2004) discovered that many students do not transfer abstract or higher-level rhetorical strategies from technical communication courses into their discipline-specific engineering courses. As identified in her study, such rhetorical strategies are better developed via co-operators or internships. J. Paul Johnson and Ethan Krase (2012) similarly found that students from certain disciplines transfer knowledge from FYC courses more easily than do students from other disciplines. This was especially true for more objective or empirically based disciplines (such as STEM fields). STEM fields and the humanities approach learning in ways that are different enough that transferring rhetorical strategies from general writing courses into STEM disciplines continues to pose significant challenges. It follows that stand-alone courses taught
within humanities departments are less-than-ideal for STEM students.

Two fields of scholarship, Writing Across the Curriculum (WAC) and Writing in the Disciplines (WID), have sought to address the issues involved with teaching communication in non-localized contexts, such as stand-alone service courses. Scholarship in these WAC and WID areas has provided powerful insights for technical communication (Craig, Lerner, & Pope, 2008; Johnson-Sheehan & Paine, 2004; Russell, 2013; Zawacki & Rogers, 2012). Even where embedding communication instruction within disciplines has proven difficult, as it has at Iowa State University, studies in WAC and WID can help inform ways of better integrating service courses with disciplines.

Multimodal communication plays a vital role in many WAC and WID programs (Anson, Dannels, & St. Clair, 2005). While WAC and WID are perhaps in danger of being semantically replaced by “Communication across the Curriculum” (CAC or CXC) and “Communication in the Disciplines” (CID) as more writing programs adopt multimodal pedagogical components, as has been advocated by Anne F. Wysocki, Johndan Johnson-Eilola, Cynthia L. Selfe, and Geoffrey Sirc (2004); Andrew Bourelle, Tiffany Bourelle, and Natasha N. Jones (2015); and others, there are still differences worth noting between CAC and CXC vs. WAC and WID, as outlined by Denise Ann Vrchota and David R. Russell (2013). For the sake of simplicity, this article will use the term WID to refer to all four fields of research, with an acknowledgment that research in WID does not always focus on multimodality. Thinking of technical communication in terms of multimodality proved fruitful in interpreting cross-disciplinary faculty’s insights, however, as will be demonstrated below. For insights into business professionals’ expectations for students’ multimodal communication abilities, see Tina A. Coffelt, Matthew J. Baker, and Robert C. Corey (2016).

Cary Moskovitz (2014) articulated an ideal scenario for WID, in which disciplinary specialists from outside the university read STEM students’ writing and respond to them. This approach not only bypasses the difficulties faculty members face in assessing student writing due to faculty members’ lack of rhetorical situatedness within a “real-life” situation, but also provides students with a perspective within their field yet outside of the academy. Moskovitz’s study yielded compelling results, suggesting that socializing students into their disciplines requires a multilayered and varied approach. Since many programs lack such ready access to volunteer experts, however, the abstracted principles of his study rather than the actual program may be all that can be implemented in many situations. The value of situated writing scenarios, such as can be achieved through service learning in
many contexts (Bowdon & Scott, 2003; Matthews & Zimmerman, 1999; Turnley, 2007), is certainly worth bearing in mind for programmatic assessment and curricular design.

Kyle P. Vealey and Charlotte Hyde (2015) discussed the benefits and risks associated with engaging various stakeholders in conducting programmatic and course-level assessment, inside and outside of the academy. Of particular interest to the current study is their discussion regarding engaging STEM faculty: “STEM representatives can provide us with disciplinary insight into particular genre conventions and distinctive rhetorical situations that comprise STEM-related writing tasks” (p. 12), they suggest. However, ensuring a fair, balanced set of multiple perspectives can be surprisingly difficult: “The very large and diverse nature of the STEM disciplines themselves raises questions of how to work with those disciplines without privileging one discipline over the other (for example, privileging engineering over biology).” Any input from STEM specialists is likely to be unbalanced, because “[i]ncluding every stakeholder in a participatory program assessment is impossible” (p. 13) due to the numerous varieties of interests invested in technical communication instruction. So, while the benefits of conducting this kind of outreach to disciplinary faculty can be significant, the risks involved with potentially leaving stakeholders out are also considerable. For this reason (among others), linking STEM disciplines to the technical communication service course through institutional programs, such as learning communities, can be a valuable method for promoting disciplinary engagement.

STEM faculty at Iowa State University have a history of involvement in the English department’s service courses through learning communities (Dinkelman, Aune, & Nonnecke, 2010). By linking service courses with disciplinary faculty and their learning objectives, learning community connections are a powerful step toward incorporating discipline-focused materials and outcomes that can help encourage students’ investment in the communication service course. As it happened, each participant interviewed for the current study had some measure of involvement in these learning communities, and this additional investment showed in their responses. So despite the challenges faced by the one-size-fits-all service course in technical communication, linking the stand-alone service course to a specific program or department, with faculty buy-in, can yield a much more productive course.

Despite Vealey and Hyde’s (2015) warnings, STEM faculty are in a powerful position to provide insights into how technical communication curriculum design can best meet the needs identified by potential
employers and alumni, given their various industry and professional contacts. While a more ideal situation may be for those same faculty to teach communication intensive (CI) courses, or better yet, for volunteer expert readers outside of the academy to assess students’ writing, the technical communication service course remains a mainstay on many campuses. Therefore, soliciting input from STEM faculty on the technical communication service course’s curriculum is a next-best step.

**Method**

The present study’s design and enactment, described in this section, attempts to answer the questions of how input from STEM faculty can impact a service course.

**Participants**

Eleven faculty members involved in curricular planning representing nine STEM departments at Iowa State University were contacted for interviews, and five participants agreed to participate. Each interview participant was from a unique department.

Kate, from Materials Science and Engineering (MSE), was the first participant and had a large stake in technical communication. She had worked with the English department in the past in setting up learning communities and other communication-focused efforts. She strived to emphasize the importance of communication in her own courses as well.

Susan, the participant from Chemical and Biological Engineering (CBE), had a more academic perspective on technical communication than the other four participants. In defining technical communication, she said, “[I]n some ways...as...a faculty member, I feel like almost every communication I write is technical in nature in that I need to be precise and I need to be clear.” Even the placement of an “or” in a curricular plan or syllabus can throw off the whole meaning of a document, Susan said, so her perspective as a curriculum planner included an emphasis on accurate wording. This perspective suggests that we as technical communication curriculum planners ought to apply technical communication principles to our own work.

Bill, the participant from Agriculture and Biosystems Engineering (ABE), came across as the most engaged of the participants in teaching his students communication skills, and the courses he teaches tend to be communication intensive (CI). Bill has frequent contact with industry professionals, and his perspectives were heavily influenced by the feedback he had received from employers and alumni.

The interview with Walter (the participant from Industrial and Manufacturing Systems Engineering, or IMSE) was the shortest, enact-
ing the value he placed on conciseness. Although we did not speak very long, he emphasized a few key characteristics of communication within IMSE, such as the importance of emails for communication and the value of informative charts and other graphics.

James from Natural Resources and Ecology Management (NREM) was the only participant from a science discipline and the only participant outside of the College of Engineering. The writing program had worked with him in the past in trying to set up a CI course within the NREM department, and our interview came in part through our efforts as curriculum planners to set up a section of our technical communication service course linked to NREM in place of the CI course, which had failed to materialize. James discussed some departmental focuses that make NREM unique among the disciplines included in this study, such as using Geographic Information Systems (GIS) mapping more often than charts or graphs for visual communication; a desire that students be able to conduct research beyond using Google and to write research articles in Introduction, Methods, Results, and Discussion (IMRAD) format; and the ability to communicate with government, private, and public audiences.

This variety of perspectives helped facilitate the goal of having a heterogeneous group for phenomenological analysis, which is discussed below. It also resulted in quite a few idiosyncratic views on technical communication, as demonstrated by the principles taken from the themes of the study as described below. The disproportionate weighting of engineering disciplines reflects the relatively high number of engineering undergraduates who enroll in the undergraduate technical communication service course, albeit at the risk of failing to represent other stakeholder voices as mentioned by Vealey and Hyde (2015).

**Interviews**

The interviews varied in length from about 7.5 minutes to about 32 minutes and were audio recorded. There were seven interview questions, although question number five asked about seven genres, for a total of 14 questions (see the Appendix for a list of the interview questions). Interviews were semi-structured with variations to the questions asked occurring throughout, especially regarding the genres taught in the technical communication service course. The interviews were conducted over a seven-month period. All recruitment and interview procedures complied with the university’s institutional review board (IRB) policies and standards for ethical research and received IRB approval. Only pseudonyms are used in this report to maintain participants’ confidentiality.
Analysis
The five interviews were transcribed and analyzed for recurring themes. To determine appropriate themes, a spectrum of “prefigured” and “emergent” codes was employed, as suggested by Benjamin F. Crabtree and William L. Miller (1992, p. 151). That is, the interview questions largely drove the themes that emerged, and coding for these questions occurred naturally as the topics discussed under each interview question largely corresponded to the subjects at hand. However, there were a number of emergent topics, as indicated by the asterisks in Tables 1 and 2, that arose during the interviews without being directly solicited by the questions. These emergent topics are of particular note, as they indicate subjects important to the participants since they came up during our discussion of technical communication without any explicit prompting.

To evaluate how important each topic was to the respective participants, the author searched for value judgments ascribed by the participants, such as indications of why technical communication matters in the participant’s discipline or salient genres worth focusing on in the technical communication service course. Such value judgments and other indications of importance (such as the number of times a topic was mentioned or described differently) were used to determine the level of importance each topic held for the individual faculty member, as demonstrated in Tables 1 and 2.

The analysis was conducted qualitatively through the lens of the phenomenological approach, which seeks to understand the lived experiences of participants. John W. Creswell (2012) defines the phenomenon explored via phenomenology as “a single concept or idea” and suggests that a heterogeneous group of as few as three or four individuals should be sufficient (p. 78). While the subject matter of this study is not necessarily focused on the faculty members’ professional lives, each participant’s perceptions of technical communication’s role in his or her respective discipline is a measure of that participant’s lived experience with technical communication, and this lived experience constitutes a single concept or phenomenon. Each participant discussed experiences with students that shaped the participant’s perceptions of technical communication. Programmatic, departmental, and university-wide initiatives also factored into each interviewee’s discussion of the phenomenon of helping students acquire proficiency in technical communication. The variety of disciplines represented by the participants constitutes a heterogeneous group, which is another of Creswell’s criteria for phenomenological studies. Thomas R. Lindlof and Bryan C. Taylor (2011) also describe how phenomenology can
help us gain new insight into shared values and perceptions: “Through a series of bracketing exercises, phenomenologists can understand how common objects of perception are meaningfully constituted” (p. 37). The phenomenological approach thus offered the best qualitative lens available for interpreting the data collected in this study, as faculty members’ lived experiences with technical communication instruction and practice within their respective disciplines can only be truly understood from the unique classroom-, professional-, and research-based phenomena experienced by each individual.

Results

The themes that emerged from the interviews fall into two general categories: technical communication concepts and genres of technical communication as used in specific disciplines. All participants acknowledged the value of technical communication in their respective fields and offered situations where mastery over certain genres would be valuable. Tables 1 and 2 provide a summary of generalized findings from this study, broken down by discipline in keeping with the phenomenological goal of accounting for lived experiences of individuals. Table 1 addresses general concepts for technical communication service program assessment. Asterisks indicate programmatic (interdepartmental) rather than curricular (within the technical communication program) considerations.

Table 1. Importance of Topics Among Disciplines

<table>
<thead>
<tr>
<th>Topic</th>
<th>Kate (MSE)</th>
<th>Susan (GBE)</th>
<th>Bill (ABE)</th>
<th>Waller (IMSE)</th>
<th>James (NREEM)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Accuracy</td>
<td>H</td>
<td>H</td>
<td>L</td>
<td>M</td>
<td>H</td>
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<tr>
<td>Addressing the Appropriate Audience</td>
<td>H</td>
<td>M</td>
<td>H</td>
<td>H</td>
<td>H</td>
</tr>
<tr>
<td>Articulating Value to Other Fields</td>
<td>H</td>
<td>M</td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>Avoiding Jargon</td>
<td></td>
<td></td>
<td></td>
<td>H</td>
<td></td>
</tr>
<tr>
<td>Consciousness</td>
<td>H</td>
<td>H</td>
<td>H</td>
<td>H</td>
<td>H</td>
</tr>
<tr>
<td>*Creating a Course Link Between English and STEM Field</td>
<td>M</td>
<td>H</td>
<td>H</td>
<td>M</td>
<td>H</td>
</tr>
<tr>
<td>*Making English Service Course Relevant for STEM Students</td>
<td>H</td>
<td>H</td>
<td>M</td>
<td>H</td>
<td>H</td>
</tr>
<tr>
<td>Reading Disciplinary Literature</td>
<td>H</td>
<td>H</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Using Consistent Terms</td>
<td>M</td>
<td>H</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

H=High Importance; M=Moderate Importance; L=Low Importance; Blank=Not mentioned **Topics at the program level**
Table 2 addresses specific genres that technical communication service courses might address. Genres without asterisks were asked about as part of the interview questions; genres with asterisks came from the participants themselves. The level of importance of a particular concept or genre to each participant was determined by assessing the value statements provided by participants, the level of interest implied in their tone of voice while discussing the topic, the number of times a topic was mentioned, and the length of time that a participant spent on a topic. Note the gaps, especially in Table 2; some participants seemed more inclined to discuss genres that they thought pertinent to their disciplines than those addressed by the interview questions.

Table 2. Importance of Genres

<table>
<thead>
<tr>
<th>Genre</th>
<th>Kate (MSE)</th>
<th>Susan (CBE)</th>
<th>Bill (ABE)</th>
<th>Walter (IMSE)</th>
<th>James (NREM)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Graphs</td>
<td>L</td>
<td>L</td>
<td>H</td>
<td>H</td>
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</tr>
<tr>
<td>Instructions</td>
<td>H (SOPs)</td>
<td>H (SOPs)</td>
<td>H</td>
<td>H (SOPs)</td>
<td>M</td>
</tr>
<tr>
<td>*Maps (GIS)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>H</td>
</tr>
<tr>
<td>Memos</td>
<td>M</td>
<td>L</td>
<td>L</td>
<td>M</td>
<td></td>
</tr>
<tr>
<td>*Oral Summaries</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>M</td>
</tr>
<tr>
<td>*Poster Presentations</td>
<td>H</td>
<td></td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>Professional Emails</td>
<td>H</td>
<td>H</td>
<td>H</td>
<td>H</td>
<td>H</td>
</tr>
<tr>
<td>Proposals</td>
<td>L</td>
<td>For graduate students</td>
<td>For graduate students</td>
<td>M</td>
<td>L</td>
</tr>
<tr>
<td>Reports</td>
<td>M</td>
<td>M</td>
<td>H (short ones)</td>
<td>L</td>
<td>M (mixed)</td>
</tr>
<tr>
<td>*Research (IMRAD)</td>
<td></td>
<td></td>
<td></td>
<td>M</td>
<td>H</td>
</tr>
<tr>
<td>Articles</td>
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<td></td>
<td></td>
</tr>
<tr>
<td>*Standard Operating Procedures (SOPs)</td>
<td>H</td>
<td>H</td>
<td>H</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Tables</td>
<td>L</td>
<td>H</td>
<td>H</td>
<td>H</td>
<td></td>
</tr>
<tr>
<td>Technical Descriptions</td>
<td></td>
<td></td>
<td></td>
<td>M</td>
<td>M</td>
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<td>Technical Glossaries</td>
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<td>Technical Specifications</td>
<td>L</td>
<td>L</td>
<td></td>
<td></td>
<td>H</td>
</tr>
</tbody>
</table>

H=High Importance M=Moderate Importance L=Low Importance Blank=Not mentioned *Not part of interview questions
The interviews were enlightening both for our own service course’s curricular design and for the larger discussion of what role the technical communication service course should play in WID initiatives within institutions of higher education. Many of these themes are directly related to the interview questions in the Appendix. Such themes include 1) the perceived value of communication in the participant’s field, 2) a focus on specific communication abilities students should acquire through the technical communication service course (such as conciseness and clarity), and 3) making the technical communication service course more relevant for students. A few themes were somewhat more discipline specific, discussed by only two or three of the participants, and represented the faculty members’ disciplinary perspectives on technical communication; these include 1) becoming familiar with literature in the field, 2) providing brief written and oral summaries, 3) the variety of available careers in the participant’s field, and 4) working with specific technologies. Some topics were only mentioned by individual participants, as described below.

Generalizing from qualitative studies is seldom recommended, and generalizing from this study, with its low participation rate and emphasis on engineering faculty, is especially not recommended. The phenomenological nature of this study allowed the author to delve into each participant’s individual perspectives, but this created some difficulty for extrapolating general principles, due to a desire to avoid reductionism. Nevertheless, salient ideas did emerge from the interviews that are worth bearing in mind as part of technical communication program development.

Discussion

While each participant approached technical communication differently, as revealed through the phenomenological analysis, they shared some common insights as discussed below.

Programmatic Planning

Two major program-level themes emerged from the interviews: 1) The technical communication service course fulfills vital needs for students, yet 2) the service course should hold clear value for students’ individual disciplines.

The importance of the technical communication service course. Kate, Bill, and James spoke particularly to why the technical communication service course holds value in each of their respective disciplines. In Kate’s words, “Every year, in our evaluations that we do of graduates—of student employees that are out in the workforce at co-ops and internships and so on—communication is always what
employers cite as lacking.” Materials scientists and engineers (MSEs) have relatively few problems with acquiring technical skills as they go through their program, but they and their employers discover once they enter the workforce that their communication abilities are not up to par. The importance of developing an aptitude for technical communication in Materials Science is especially strong due to the interdisciplinary nature of the field, according to Kate:

Material Science is an interdisciplinary field…any given organization…just has a few material scientists…. [T]hey’re constantly having to describe why what they bring to the table is important, and…they’re talking to people who don’t have the same background or vocabulary, and so their communication skills are even more important than maybe a team of twelve mechanical engineers all working together. So, yeah, I think we have a special need from that perspective. In addition to that, Material Science is a little different in that we are at the interface between the basic sciences—chemistry and physics—and engineering. And so, by that too, we have a different language that we speak, and a different perspective, which of course I believe is valuable to have, but also, then, it sort of falls on us to explain.

This “special need” to explain disciplinary value to others within an organization is something professional technical communicators can relate to (Wilson & Ford, 2003). MSEs continually need to demonstrate what they bring to the table, just as technical writers do.

Bill expressed the increasing value that technical communication has for ABEs early on in their academic careers as interns are sent out earlier and expected to do more than used to be the case. In his words, “[W]hat used to be required at graduation is now required at internships.” Students are often expected to manage their own projects and communicate with a variety of personnel at their internships, right after their sophomore year. Bill continued, “I mean, the students I’ve heard from lately say, ‘The content in [the technical communication service course] is great, um, I wish I would have had it before my internship.’” This desire presents a unique challenge for technical communication programs and their service courses, many of which are restricted to being offered only to upper-division students (as ours is). Some technical communication faculty members have the opposite problem, wishing they could offer technical communication courses further into STEM students’ academic careers yet being forced to offer technical communication at the freshman and sophomore levels. Programs must work with institutions to sort out disciplinary requirements and expectations and should strive to provide the technical
communication service course at an appropriate time in students’ careers. Perhaps exceptions ought to be made for certain majors.

James stressed the interdisciplinary nature of his department, suggesting that graduates from NREM will pursue careers in a variety of fields from zookeeping to forestry to advocacy with nonprofits to federal land management to private timber management. The wide swath of potential careers in NREM alone speaks to one of the significant challenges WID faces: the extreme difficulty of addressing each individual student’s future communication situations. James had a positive perspective on this difficulty, however:

I think the challenge with students in any event is helping them understand the context of why you’re doing something. And they don’t always get it, even if you lay it out there, but I mean, if you say, “Okay, we’re going to do instructions for a paper airplane. It’s not about the paper airplane, it’s about the process, the tool for you to be able to develop instructions for anything that you need to teach.” And maybe you give them some examples, you know? “You’re gonna teach a…newbie at the zoo how to care for this particular animal, all the way from, you know, feeding them and keeping their space clean and watching for disease….[W] e’re trying to teach you skills that you can use beyond this class. It’s not just about getting this assignment done and goofing off.” {Laughter} Technical communication is something they’re going to use throughout their professional life in some way, shape, or form. And it’s important for them to dig into this now and try to do a good job and learn the lessons that are being presented, and try to make the connection that “This lesson here I could use on A, B, C, D down the road.

This inspiring perspective drives at the heart of what the technical communication service course strives to do: provide de-contextualized communication principles that students can apply to future situations. It would be optimistic thinking indeed to suppose that the service course model works in all cases for all students. Yet providing contextualized, “real-life” communication situations for every student for their future careers is not just unlikely; given the variety of potential careers and job-specific genres our students face, true verisimilitude in communication courses is virtually impossible, despite the great efforts made by Moskowitz (2014) and others. The service course and its assignments therefore remain as bulwarks in college education, and from James’s perspective, that’s not necessarily such a bad thing.

**Making the technical communication service course engaging for students.** As mentioned earlier, each participant was involved
with the learning community links that had been formed with English department service courses in some way. Susan and Kate spoke to the importance of these links especially. Susan discussed the Chemical and Biological Engineering (CBE) learning community that had been established with the technical communication service course prior to the interview, and how the English instructor of the course had taken it upon herself to become familiar with the CBE lab reports and was working with the instructor of the CBE lab to create an interdisciplinary curricular framework. Susan praised this action of linking an English course with a CBE course, and expressed her hope that other disciplines would adopt the model. This feedback regarding our learning community links is valuable, and further demonstrates the value (or at least perceived value) that making the technical communication service course more localized to a specific discipline can have. Because the English instructor is able to spend more time familiarizing herself with the discipline that her service course is linked to, she can become a powerful bridge between the two disciplines, providing both communication knowledge and CBE engagement.

Kate said that she and her colleagues strive to reinforce what students learn in the technical communication service course. She said, with a hint of frustration, “You don’t have as much of a voice on your side of campus...we need to reinforce it over here, and we do, but they [the students] don’t believe us.” The perception that the technical communication service course is just another English class is real, and finding more effective ways of engaging MSE (and all STEM) students is an ongoing need worth pursuing.

Communication Genres Worth Emphasizing
Next, the participants also identified specific communication genres that they felt should be emphasized as part of the technical communication service course (discussed in alphabetic order).

**Emails.** Among the participants, there was a general concern with informality in students’ emails. In fact, 4 of the 5 participants specifically called out using the word “Hey” in emails to professors as a concern. Bill and Walter particularly discussed how emails have largely replaced formal memos and proposals. Perhaps emphasizing well-crafted emails would be worthwhile in technical communication service courses, given the genre’s emphasis in the interviews.

**Lab reports.** Kate stressed the importance of being able to write a document such as a lab report in a variety of formats for a variety of audiences. Susan mentioned appreciatively that the learning community-linked technical communication course taught CBEs about lab reports. More experimentally driven disciplines would likely benefit
Cross-Disciplinary Perspectives in Technical Communication

Standard operating procedures. Kate, Susan, and Walter emphasized the importance of standard operating procedures (SOPs) over what technical communicators frequently term “instructions.” For Kate, SOPs represent a way for those in the field of Materials Science and Engineering (MSE) to document the part their discipline plays within a process. This idea of communicating value within an organization via documentation has similarity to Saul Carliner’s (1998) call to articulate business objectives for technical communication projects. MSE accordingly has a clear rationale for including education on technical documentation as part of MSEs’ professional development. When Walter was asked about the value of instructions, he described them as standard operating procedures. Interns and new hires in Industrial and Manufacturing Systems Engineering (IMSE) will frequently write or update procedures for industrial processes, and knowing how to navigate and write such documents is highly valuable for IMSEs. SOPs are worth teaching MSE, CBE, and IMSE students as a mode of the instructions assignments that frequent technical communication courses, and accordingly, sections of technical communication courses specific to such disciplines would do well to include an SOP option.

Rhetorical Abilities Worth Emphasizing
Each participant had general concerns with students’ abilities to communicate effectively, particularly as related to certain rhetorical aptitudes. The value of such rhetorical skills (though not always termed as such by the participants) presents a welcome opportunity for an epideictic moment. Many of the topics discussed and the particular areas of communication that the participants found valuable corroborate with many of the principles discussed in our technical communication literature. The importance of accuracy, conciseness, addressing audiences appropriately, and communicating professionally discussed in the interviews could have come straight from a technical communication textbook. So, despite Joanna Wolfe’s (2009) criticism that most technical communication textbooks fail to address discipline-specific communication needs in STEM fields, the current study found that STEM faculty tend to agree with several of the principles that are heavily emphasized in such textbooks. A skeptical view could hold that STEM faculty simply tend to agree with what they themselves were taught in school by educators from the humanities, yet most of the participants in this study were informed directly from their interactions with industry professionals. The validation of technical communication as a discipline, and rhetoric specifically, found through this study has been a welcome finding.
Ability to summarize. Several themes arose during the interview with Bill, the most prominent being the importance of being able to summarize projects and actions orally. He said:

[W]e survey our students and we interview our students like on their internships, and for those that are...in full-time employment, and most of the communication, technical communication, tends to be more through email and less...long reports that they used to have.

Emails and brief oral reports have become more standard modes of communication in Agriculture and Biosystems Engineering (ABE) in recent years. The S.T.A.R. (Situation, Task, Action, Result) model is important for ABEs in producing these brief, oral progress reports; reminding supervisors of the situation that initiated a project, explaining the task assigned to the ABE, describing the action that the ABE has taken to fulfill the task, and projecting the intended result (or describing a completed result) of the action are all valuable steps for providing a status update. ABEs are under a unique amount of pressure to perform orally, according to Bill. Caterpillar, a national company that hires many interns and graduates of the ABE department, will shut down an interview after five minutes if the candidate cannot communicate well. The emphasis on oral communication in many WID programs is well placed, as far as Bill was concerned. His perspective on oral communication’s value also corroborates with the findings of Coffelt, Baker, and Corey (2016).

Bill’s extensive experience in teaching communication concepts to students and his work with employers, interns, and alumni provided him with an authoritative voice as he spoke of the importance of brief summaries in both the oral and written modes. He clearly valued visual communication as well, as he commented on the importance of producing clear graphs that should be able to tell a story on their own. His unique insight into the importance of connecting communication hardware also demonstrates a need for continued electronic communication instruction. Through each of his insights, Bill came across as a strong proponent of multimodal technical communication.

Like Bill, Walter suggested that IMSEs might need to communicate technical content by email more often than via a long, formal report. Walter also emphasized the value of effective visuals:

[When] communicating via graphs and figures—this is actually one of my pet peeves...because they’re such a valuable way of communicating technical information, and that figure or graph should be able to stand all alone and tell a story. And so, if I’m reading a paper...I’ll scan through and look at the figures, be-
cause I can get the story real quickly, then start reading it. I may not even read the whole article…. [Y]ou can get the information out of the figures. And so, that’s the most powerful piece of technical communication there probably is.

**Ability to tell stories.** Walter expressed his desire that IMSEs will tell a story through their technical communication. The term “story” is so often associated with the humanities that a STEM faculty member using it to describe work in his field was refreshing. “Why does this matter?” is a driving question for technical communication instruction in Walter’s mind, and if technical communication artifacts can tell a compelling “story,” then the “why” will be more fully addressed.

**Identifying audience and purpose.** Kate valued attentiveness to any given rhetorical situation and an ability to apply technical communication knowledge to unique scenarios, as well as awareness of standards and conventions. The ability to analyze a given rhetorical situation and to know at what level MSEs should explain the specifics of their discipline to coworkers is surely invaluable. A thorough understanding of how to account for audience and purpose is therefore worth emphasizing for MSE majors in the technical communication service course. James similarly thought that being able to address government, industry, and public audiences in a manner appropriate to each context and situation is greatly valued among NREM majors.

**Reading disciplinary scholarship.** Kate and Susan both emphasized the importance of reading scholarly literature in a student’s field. To learn proper writing styles for the discipline of CBE, Susan said, “I just know from graduate school, [what] really helped shape my writing was I would read articles, and I started to just, you know, model what worked for me when I was reading—model that in my own writing—and avoid things that I saw in other people’s writing that wasn’t working very well.” This approach to acquiring genre knowledge reflects investigations of generic moves in technical and scientific writing made by systemic functional linguists and English for Specific Purposes (ESP) genre researchers such as John M. Swales (2004). Reading scholarship in the field was important to Susan, as it was to Kate, largely for the purpose of helping students become more socialized into their respective disciplines. This apprenticeship model through scholarly texts is widely used in graduate programs in all disciplines. Susan and Kate would agree that the technical communication service course is another appropriate venue for such disciplinary socialization via the journals in the student’s field.

**Style.** While style has become a less popular topic in writing studies over the past couple decades, the value of precise wording came
up multiple times during Susan’s interview as well as other interviews. Technical communication instruction is an excellent place to emphasize such a principle, and it can be coupled with more rhetorically rich learning objectives, such as emphasizing why a certain word should be used in a certain way within the context of a given rhetorical situation.

**Technical know-how related to communicating.** A unique yet intriguing insight that Bill offered was a concern that many students do not know how to plug a laptop into a projector for an oral presentation. While such a hardware-focused skill is often outside of the purview of technical communication curricula, the value of such knowledge is undeniable. As Bill said,

[W]e surveyed students that were on internships, and said, ‘Tell us about your communication. What’s communication look like in the workplace?’ And it’s amazing how many said, ‘You’ve got to teach these students how to hook up a computer to a projector!’ He also shared an anecdote of waiting several minutes while an IT person showed up to fix a problem with a projector, and suggested that students should know to check out a presentation location beforehand to avoid such mishaps.

**Using clear definitions.** Susan also emphasized the value of using clear definitions for terms, suggesting that CBEs should define terms up front in a document, especially if those definitions differ from the standard definitions in the field, and CBEs should use terms consistently throughout a document. She used “boiling point” as an example: It has a lay definition, a CBE definition, and then it might have a different or more specific definition depending on a particular situation. CBEs need to have the rhetorical awareness to know when to use which definition and when, including when is an appropriate moment to define the term differently and when the standard definition should be implicit.

**Takeaways for the Author’s Program**
The findings of this study revealed certain aspects of our technical communication service course that we had not considered before. Standard operating procedures seem to be more important than we as curriculum planners had originally anticipated, for instance. The ability to write reports, specifically lab reports, was another learning outcome that was emphasized in the interviews that we hadn’t fully anticipated. While these two specific genres do not currently figure into our service course’s curriculum, their perceived value by Kate, Susan, and Walter suggests that these should be included, possibly as optional assignments. Again, learning community links offer a potential solution to the need for certain genres identified by certain disciplines. Technical
communication programs should continue developing learning communities and similar methods to link service courses to disciplines and promote disciplinary engagement at the programmatic level.

**Limitations of This Study**
Because these interviews were conducted with just a few select individuals involved with curricular design, their views are not generalizable to faculty across departments and colleges. The low level of participation and the neglected voices present other challenges. A large-scale, multi-institutional study would likely yield a powerful follow-up to this article. Perhaps this study can serve as preliminary validation for developing a quantitative survey instrument, much as Carol S. Johnson (2006) used a qualitative Delphi study to create a quantitative measure.

**Conclusion**
Each university has a unique situation and, accordingly, curricular decisions regarding the technical communication service course should be assessed based upon the institution's available resources and needs. Understanding what the STEM faculty at an individual's institution would like to see in the technical communication service course is a valuable step toward designing curricula that meet with disciplinary expectations. While this article's findings may not be generalizable to readers' individual situations, it is hoped that the principles and genres discussed by the faculty herein will pertain to curricular decisions or to future research studies at readers' institutions.

We must continue to investigate ways to improve communication across the curriculum for technical specialists, and such improvement will almost always require collaboration between writing-specialist faculty and discipline-specialist faculty. The result of such collaboration is often an amorphous curricular agenda that may change frequently as new learning objectives and priorities are identified. The prospect of ongoing change should not deter writing faculty from engaging with discipline specialists but should rather encourage it, even if such efforts may occasionally appear cumbersome. STEM faculty who understand the value of technical communication are often willing partners in our efforts to improve technical communication program curricular design. Continuing to work with, collaborate with, and listen to STEM stakeholders may help to improve service-course curriculum in the future.
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Appendix: Interview Questions

1. What are some of the defining characteristics of communication within your field?
2. How do you define “technical communication”?
3. What communication proficiencies do you expect juniors in your department to be capable of?
4. What learning outcomes for students do you think that English 314: Technical Communication should provide?
5. We are piloting a version of English 314 in the fall that covers the following genres/concepts. How important are these to your field? (Prioritize any genres and concepts that have already come up at this point in the interview)
   - Reports (feasibility and progress)
   - Technical specifications, descriptions, and glossaries
   - Proposals
   - Instructions
   - Data visualizations (e.g., graphs, tables)
   - Emails
   - Memos
6. In what one way would you like your students to be able to communicate better?
7. What can English 314 instructors do to make the education of students in your department/program more productive or more complete?

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Abstract. This article reports on a study of professionalization practices utilized by recent graduates of programs in technical and professional communication who have attained tenure-track positions in this field. It discusses the professionalization practices of successful job candidates, makes recommendations about professionalization experiences that programs should make available to graduate students, and complicates how professionalization practices differ based on graduate students’ individual identities. Our findings are grounded in contra-professionalization, that is, “initiatives that offer or promote professional services outside of parts of or the entire infrastructure, sometimes circumventing it completely” (Carliner, 2012). We argue that personal identity must be recognized in thinking about professionalization, and therefore contra-professionalization practices (which more effectively deal with identity) will always be an important part of job market preparation.

Keywords. contra-professionalization, embodiment, job preparation, professionalization

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This article reports on a study of professionalization practices utilized by recent graduates of programs in technical and professional communication who have attained tenure-track positions in this field. As part of this study, we sought to answer the following research questions:

- What does professionalization look like for successful job candidates in technical and professional communication?
- What are professionalization experiences that all programs in technical and professional communication should make available to their graduate students?
- What are key differences in professionalization experiences for job candidates who landed tenure-track jobs at a variety of different types of institutions (e.g. research-intensive, PhD-granting, Master’s-granting, four-year institutions, etc.)?

In order to gain insight on these questions, we recruited and interviewed 16 assistant professors. All assistant professors had taken tenure-track jobs in technical and professional communication within the last four to five years since completing graduate school. We interviewed the assistant professors in an effort to learn how they have approached professionalization and what has been productive for them. Although many of our interview questions focused on professionalization related to procuring a tenure-track job, we also operated under a broad definition of professionalization as the process whereby a person becomes a participant in conversations within and about a defined discipline, in this case, technical and professional communication. The discussion surrounding professionalization practices often returned to the recurring theme of the three-pronged nature of academic work: research, teaching, and service.

This work has many implications for technical and professional communication programs. Learning about successful professionalization practices can aid how we shape curriculum development, faculty development, and assessment and maintenance of our graduate programs. It can help us to think about recruitment and retention practices relevant to both faculty and students. It can benefit how we approach cross-cultural, diversity, and globalization issues from new perspectives. Perhaps most of all, this work can help to guide our thinking about relationship-building across institutions with programmatic commitments to technical and professional communication. We are also hopeful that such questions can help generate best practices for improving professionalization within programs looking to place students at a variety of different kinds of institutions. Such programs
Valuing Contra-Professionalization can help to ensure that up-and-coming professionals receive the support they need to navigate the job market and land in positions that best fit their needs as scholars, teachers, and community members.

**Literature Review**

**What Does Professionalization Look Like in Technical and Professional Communication?**

Such questions as those we set out to answer are not new, though the answers to them are constantly evolving. These questions remain especially relevant to a field like technical and professional communication, a field tethered to constantly shifting institutional and professional realities that include the status of the broader economy and higher education funding. Within such a field, research into how we professionalize our students stands to improve our programs, and successful job placements support exchange and collaboration between institutions (Council, 2011). Throughout this article, we assume that successful job placement is most often a result of productive professionalization practices—an assumption that might well encounter exceptions in a large-scale study and which we explain in more detail below.

Most research on professionalization to date has been disciplinary in focus, by which we mean it has been about the ways in which technical and professional communication and related fields make knowledge via a variety of professional locations: curricular, institutional, and organizational. Two special issues of *Technical Communication* responded to Gerald J. Savage’s (1999) call to open a conversation on disciplinary/organizational professionalization, especially in its purpose of moving technical and professional communication towards greater visibility and legitimacy within academic institutions (Coppola 2011; Coppola, 2012). We have also seen some work on professionalization at the more individualized level. While this work largely focuses on undergraduate contexts and preparation for industry jobs, ideally the concepts should transfer to the sorts of graduate professionalization we are interested in. Sally Henschel and Lisa K. Meloncon (2014), for instance, identified five conceptual skills for technical and professional communication graduates: rhetorical proficiency, abstraction, social proficiency, experimentation, and critical system thinking (p. 8). Technical communication must also prepare students for academic as well as industry and other non-academic job markets; Robert R. Johnson (2009) addressed the ways in which technical and professional communication prepares students and attempted to problematize this binary with a reflection on knowing vs. making (p. 56). In a 2003 survey of ATTW members, David Dayton and Stephen Bernhardt queried
research topics for future issues of *Technical Communication Quarterly*, among other disciplinary questions (e.g. member participation, appraisal of benefits, etc.) which included graduate curriculum among other pertinent ideas to professionalization. That same year, Carolyn Rude and Kelli Cargile Cook (2004) discussed the imbalance between the demand for technical and professional communication faculty and the available supply.

The research specific to professionalization practices in graduate programs includes work on how technical and professional communication programs can address their multifaceted purposes. Johndan Johnson-Eilola and Stuart A. Selber (2001), for example, present the interdisciplinary nature of technical and professional communication and discuss the different frameworks established by previous authors on which professionalization activities for technical and professional communication courses, practice, and programs can develop. The authors then describe a framework specific for technical and professional communication graduate programs. The framework uses a three-dimensional space of “thinking, doing, and teaching” (p. 405) or theory, practice, and teaching (teaching which moves between the two binaries of thinking and doing). Other works highlight the importance of practice (McNabb et. al., 2002; Eble & Gaillet, 2004) in technical and professional communication graduate programs. Richard McNabb et. al. (2002), for example, highlight the importance of service work. Service through administrative work, McNabb et. al. note, “makes visible the very immediate ways in which all institutional work—not only administrative but also scholarly work—is political in nature” (p. 68). They further note how new faculty are often ill-equipped to deal with institutional politics and make the claim that administrative work as a professionalization practice for graduate students is important for future job placement.

Our study takes on a new topic related to professionalization in technical and professional communication: the situation of recently-employed tenure-track faculty in technical and professional communication. Specifically, using Saul Carliner’s (2012) approach, we claim below that the tenure-track faculty we interviewed relied most heavily on what he calls *contra-professionalization*, which he defines as “initiatives that offer or promote professional services outside of parts of or the entire infrastructure, sometimes circumventing it completely” (p. 49). The vast majority of our participants (15 of 16, or 93.75%), in other words, reported drawing on professionalization practices that were completely outside established conventions, programmatic requirements, and resources available within participants’ specific institutions.
Though many participants also reported benefiting from existing professionalization infrastructure, our participants pointed to several gaps in our field’s existing professionalization practices for tenure-track faculty in technical and professional communication, especially concerning the maintenance of relationships with mentors after a successful job search has been completed.

This project further builds upon work that supports careful and conscious approaches to the job market. Previous research has shown that appropriate professionalization support is vital to job market success (Ballif, Davis, & Mountford, 2008; Ball, 2008; Eble & Gaillet, 2008). Further, as Henschel and Meloncon (2014) noted, “programs should be embracing common conceptual and practical skill sets that will prepare students to become successful professionals” and not just successful job hunters (p. 22). We designed this study based on the belief that most professionalization practices that are productive in terms of job market success are also productive in terms of longer-term professional success. The success of technical and professional communication academic professionals is the case in part because the job market in technical and professional communication remains strong. We want to be clear that our research is specific to technical and professional communication and may not be applicable to academic disciplines with fewer ties to industry or where fewer job openings are available. In other words, the strong job market in technical and professional communication means that professionalization work in our field is less about competition and more about working to find a good fit for graduates of our programs in order to build a stronger, more collaborative field. Our study’s findings, however, are applicable to professionalization practices in technical and professional communication whether the field has a strong job market or whether the job market is more competitive.

Furthermore, we see our inquiry as part of a much larger conversation about the struggle for professionalization in technical and professional communication. As articulated by Savage (2003), this struggle is complex, because it draws on not only the goal of disciplinary competency, but also on the priorities a field sets for certain competencies over others:

The problem of professional identity goes beyond identifying characteristic skills and knowledge of the field. It also involves prioritizing such competencies. The arguments about the importance of instrumental skills—knowledge of particular tools—for defining our practice are well known, although apparently not settled. Prioritizing kinds of knowledge and skills involves defin-
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We attempt below to tease out the existing priorities of the field through the lens of the experiences of several tenure-track faculty, who occupy a space that is key to the development of technical and professional communication as a field. At the same time, we are careful to acknowledge that contra-professionalism often exists outside formalized structures for a reason. It is not our goal to direct the field toward subsuming the contra-professionalist practices we uncovered into formalized policies for mentoring graduate students in their quest to become tenure-track faculty members.

As Carliner (2012) points out, contra-professionals often resist the formalization of their practices into policies, because they feel that this move will limit opportunities (p. 61). Creating a lock-step model for the professionalization of tenure-track faculty in technical and professional communication might diminish the impact of contra-professional activities, or at least change their meaningfulness for members of technical and professional communication who wish to seek them. Rather, our primary goal is simply to describe the contra-professional practices that were reported to us by participants in hopes that our field is made aware of these practices and can better support them in informal ways. These practices show promise for expanding our disciplinary influence as well as making the transition from PhD-to-first-job smoother for new tenure-stream faculty.

Where Contra-Professionalization Meets Identity

A wealth of literature spanning rhetoric, cultural studies, critical race studies, disability studies, feminisms, and queer studies argues that standard or normal practices have historically been geared toward privileging straight, white, able-bodied men and that those who occupy marginalized subject positions are left to adjust to the expected norm using their own resources and time. Indeed, many technical communication scholars have taken up this work and contributed to understandings of institutionalized injustices (see, for example, Bernhardt, 1992; Brasseur, 2005; Durack, 1997; Flynn, Savage, Penti, Brown, & Watke, 1991; Haas, 2012; Popham; 2016; Savage & Matveeva, 2010; Williams & Pimental, 2014). The topic of professionalization—the very process of gaining legitimacy in the eyes of one’s superiors and peers—is deeply implicated in raced, gendered, abled disciplinary his-
Valuing Contra-Professionalization

tories and modern academic practices. For example, Gabriella Gutiérrez y Muhs, Yolanda Flores Niemann, Carmen G. González, and Angela P. Harris (2012) recently published an entire collection demonstrating how the academy’s institutional constraints work to delegitimize scholars who possess bodies of color, female bodies, and bodies with indicators of working class backgrounds. It is utterly unsurprising, then, that our study found that professionalization practices are heavily dependent upon participants’ individual identities.

Furthermore, as Chandra Mohanty (1988) has shown, we cannot assume that a person who occupies a particular subject position in regard to gender, ethnicity, and class will necessarily have the same experiences or worldview as someone with similar gender, ethnic, and class identifications (see also Crenshaw, 1991). In other words, the solution to this problem is not as simple as finding a particular formula or direction for professionalization that is more conducive to a certain type of body. Thus, the state of professionalization in technical and professional communication requires urgent attention and individualized care from all faculty who participate in the professionalization of graduate students.

Research Methods

This section includes a discussion of our study methods: participant recruitment, interview collection tool, and analysis of data. Our study was approved by the Institutional Review Board of East Carolina University, study #14-001564. It was worth noting that the methods and methodological approaches for this project were developed collaboratively and were informed in large part by the experiences and questions of Therese Pennell, the first author on this project. Her perspective as a soon-to-graduate PhD student worked well in combination with Erin Frost and Guiseppe Getto’s perspectives as new assistant professors in generating valuable approaches and especially with drafting interview questions.

In order to answer the research questions, we sought to interview technical and professional communication scholars who had recently accepted tenure-track jobs. Ideal participants for this research were tenure-track assistant professors who graduated from a technical and professional communication-focused program and are employed at a technical and professional communication-focused program. Participants needed to have been hired into a technical and professional communication job recently—within the past four to five years. This population included participants transitioning from one tenure-track job to another. To recruit potential candidates, we initially shared the call-for-participation via the CPTSC listserv and sent some individual
invitations to colleagues who qualified as participants. We scheduled interviews as individuals agreed to participate.

In order to learn about participants’ experiences of professionalization practices at both their PhD-granting institutions and at their current employment institutions, we generated a list of 14 open-ended questions. Interview questions ranged from asking about participants’ scholarly focus, jobs group participation at their PhD-granting institution, and professionalization practices in former or current employment institutions (See Appendix: Interview Script). We then conducted semi-structured interviews (Wengraf, 2001, pp. 51-9; Galletta, 2013, pp. 45-9) via Skype or Google Hangouts, which we recorded using TechSmith’s Camtasia Studio. All data collection occurred between September 2014 and January 2015, and interview duration averaged between 40 and 60 minutes.

After an initial round of data collection, we reviewed our participant list and made directed efforts to recruit more participants in such a way as to ensure representative sampling across institution types (based on the Carnegie Classification of Institutions of Higher Education system). During this second round of the call-for-participation, which occurred in late Fall 2014, we sent emails to individuals from institutions that were not represented in our initial data set. Specifically, we sought to fill in gaps at medium and small master’s-granting institutions, and we also worked to secure representation from historically black colleges and universities (HBCUs).

We researched faculty pages from target institutions’ websites to find eligible participants, then contacted them based on the provided email addresses. As a result of this effort, we recruited three more eligible volunteers. This brought our total participant population to sixteen. Ultimately, we secured representation from five of the seven types of institutions that typically employ tenure-track technical and professional communication professionals. We initially had hoped to interview participants from the following sub-groups: research universities with very high research activity (RU/VH), research universities with high research activity (RU/H), doctoral/research universities (DRU), master’s colleges and universities with large programs (ML), master’s colleges and universities with medium programs (MM), master’s colleges and universities with small programs (MS), and special focus institutions (SPEC). Early in our research, we elected to eliminate special focus institutions from our participant pool in part because of a lack of available participants and in part because we felt that professionalization practices might differ significantly between candidates for positions at generalist and specialist institutions; a future study of
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professionalization practices by faculty at specialist institutions could be useful for comparative purposes. Additionally, we did not secure representation from a DRU, but we did interview multiple participants from our other five target areas (Table 1).

**Table 1. Distribution of Participants Across Five Carnegie Classifications**

<table>
<thead>
<tr>
<th>Carnegie Classification</th>
<th>Explanation</th>
<th>Number of participants</th>
</tr>
</thead>
<tbody>
<tr>
<td>RU/VH</td>
<td>Doctorate-granting universities with very high research activity</td>
<td>4</td>
</tr>
<tr>
<td>RU/H</td>
<td>Doctorate-granting universities with high research activity</td>
<td>3</td>
</tr>
<tr>
<td>ML</td>
<td>Masters-granting institutions that award at least 200 Masters degrees annually</td>
<td>5</td>
</tr>
<tr>
<td>MM</td>
<td>Masters-granting institutions that award at least 100 Masters degrees annually</td>
<td>2</td>
</tr>
<tr>
<td>MS</td>
<td>Masters-granting institutions that award at least 50 Masters degrees annually</td>
<td>2</td>
</tr>
</tbody>
</table>

After completing data collection, we used emergent coding (Thayer et al., 2007) to analyze the responses we collected, and we collaboratively developed a coding scheme based on keywords emanating from main concerns in participants’ responses (see list below for categories we used while employing emergent coding).

**Coding Scheme**

- Explicit vs implicit professionalization: what was I taught to do, what did I learn on my own
- Key experiences from graduate work: general activities completed by participant through her/his institution
- Professionalization that is particular to this participant’s experience/graduate school: activities specific institutions mandated
- Participant’s background: professional experience including industry experience
- Professionalization drawn from industry/field experience: for participants with industry experience, the professionalization practices they acquired from such experience
Limitations
Our study includes some important limitations. As mentioned above, we did not interview participants from specialist institutions. While this was in part because we felt professionalization practices for people who landed at specialist institutions might be significantly different from those at generalist institutions, we have no data on which to base this assertion. Further, we are unable to theorize whether the lack of available participants at specialist institutions may be the result of specific trends in our field’s professionalization practices. In addition, our participant pool was necessarily the result of self-selection and it is possible that those who would agree to participate in a study on professionalization have specific experiences—either positive or negative—with professionalization practices. It is also likely that those who self-select for studies like ours share other characteristics—such as dedication to disciplinary service work, valuing of studies with methods that rely on reporting experience, or ability/willingness to make time for such an interview—that could produce trends in views on professionalization that may not actually be representative of the field at large. Related to the aforementioned effects of self-selection, we note that our participant pool was predominantly female and white. As it has been documented that people experience professionalization differently depending on identity characteristics (see below), this undoubtedly influences our findings. Finally, the effects of researcher bias cannot be discounted. While all three authors were professionalized in different doctoral programs, we also all have some ideological similarities and may have overlooked or emphasized particular trends as a result. This study, in other words, is limited in the same ways that any other reflection on the field would be—by the perspectives and epistemologies of those who choose to participate in the disciplinary conversations that influence the practices of our field.

Results
The study revealed, unsurprisingly, that professionalization practices vary widely. However, tenure-stream professors do consistently tend to conceptualize professionalization in a way that corresponds to the tra-
ditional three pillars of academic life: teaching, research, and service. Participants consistently framed contra-professionalization practices as at least as important as formalized professionalization practices. We learned that emphasis on explicit professionalization in research increased over time; this held true across types of institutions. Finally, the differences in type of institution during the transition from graduate school to employer were more important than the type of employer itself in determining how professionalization functioned for participants, and experience in industry and identity characteristics both had major effects on professionalization practices and their effectiveness.

We learned from the interview process that scholars in our field have a fairly common sense of the goals of professionalization. In the words of Participant 12, professionalization is the “process of joining your field as an equal ... the process of becoming involved and becoming an expert in your area but also broadly in the field. It’s learning the patterns of behaviors and the practices.” However, the means of achieving this goal—the way professionalization practices actually look in daily life (Research Question #1)—vary widely across scholars in our field.

Three factors at the core of professionalization challenges for participants were the balancing of research, teaching, and service. A number of participants described their graduate programs’ professionalization practices using the research, teaching, and service framework, and academic institutions assess tenure-stream professors using this framework as well. Participant 9 intuitively described it as the three-pronged approach to professionalization, and Participant 6 explained: “being able to balance service, teaching, and research” prepared her for her tenure-track roles. Whether as PhD candidates trying to make the argument of fit on the job market or else as newly employed tenure-track professors trying to make an argument for tenure, participants noted how these three areas guided their professionalization process. Participant 15 explained this challenge, while transitioning from her graduate program to the academic workplace:

[It's a] shift in time management...going from focus on scholarship and being given space to do that...psychological support of being around other people who are doing that work... to a place where your time is taken from you...lots of committees, lots of teaching, lots of contact hours with students.
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What higher education institutions attempt to do to prepare scholars—first to secure jobs and transition into the profession and then to help transition into tenured positions—includes a set of complex processes that differ from program to program. From our data, participants revealed a number of professionalization practices experienced at their graduate institution and, then, their employer institution. More telling are the practices mandated by the institutions that participants are required or highly recommended to complete as juxtaposed with practices that participants developed outside the mandated institutional practices. These latter practices we found correlated with what Carliner (2012) describes as contra-professionalization practices. The list in Table 2 represents some of the professionalization practices experienced at the graduate institutions as described by participants.

Table 2. Examples of Professionalization Practices of Participants in Graduate School

<table>
<thead>
<tr>
<th>Institutionally mandated practices</th>
<th>Contra-professionalization practices</th>
</tr>
</thead>
<tbody>
<tr>
<td>• administrative and teaching posts assigned through assistantships</td>
<td>• working closely on their own, with peers or with faculty to navigate the publication process</td>
</tr>
<tr>
<td>• working closely with faculty members who groomed participant in publication process</td>
<td>• working closely with mentors and dissertation committee members for the job market</td>
</tr>
<tr>
<td>• graduate research networks</td>
<td>• seeking mentors outside of graduate institution</td>
</tr>
<tr>
<td>• professionalization courses scheduled after course work was completed</td>
<td>• revising job applications, cover letters, CV, and other job application documents with or without the guidance of PhD faculty member (in the instances outside of institutional credit)</td>
</tr>
<tr>
<td>• working closely with mentors and dissertation committee members for the job market</td>
<td>• peer-mentoring with fellow PhD colleagues in dissertation work or alums who recently landed tenure-track jobs outside of institution’s mandated mentoring</td>
</tr>
<tr>
<td>• professionalization workshops that included revising job applications, cover letters, curriculum vitae, and other job application documents under the guidance of PhD faculty member (whether in technical and professional communication focus or</td>
<td></td>
</tr>
</tbody>
</table>
### Institutionally mandated practices

- English Department in general
- Professionalization workshops preparing for job interview and the job issues
- Peer-mentoring with fellow PhD colleagues in dissertation work and with alums who recently landed tenure-track jobs that were institutionally mandated mentoring

### Contra-professionalization practices

- Using professionalizing resources based on personal research

The contra-professionalization practices were heavily referenced by participants: for example, of our 16 participants, six participated in a formal jobs group late in their program. Of these six, five reported that the jobs group was useful; one participant explicitly stated that the jobs group was narrowly and specifically oriented toward landing a job at a research-intensive institution and thus was unhelpful, since this was not the participant’s goal. All six participants in jobs groups stated that contra-professionalization practices were equally or more important than the formalized structure of the jobs group. The valuing of contra-professionalization practices was the case even across different iterations of jobs groups. (One participant described the group as a “studio” focused on peer critique; another said her department had separate jobs groups for particular disciplines.) Participation in a jobs group did not seem to have an effect on the type of institution a participant is currently employed by. The six participants whose institutions offered jobs groups represented all of the five institutions types interviewees came from in this project (see Table 1); one is employed at an RU/VH, one is employed at an RU/H, two are employed at MLs, one is employed at an MM, and one is employed at an MS.

Professionalization experiences that were articulated as helpful and that programs in technical and professional communication may want to consider (Research Question #2) are detailed in Table 2 and in Table 4. We have made an effort to divide explicit, official professionalization practices from contra-professionalization practices, though this does introduce some complications. For example, should mention of conference attendance as a key experience count
as an explicit practice or a contra-professionalization practice? Since we are focusing here on what programs offer to students in support of professionalization, we counted something as an explicit, official practice only if it was in some way sponsored or supported by a participant’s program. That is, if a program required a participant to attend a conference or provided explicit support for conference attendance, it would count as an explicit practice; if it was something the participant did on her or his own, we counted it under contra-professionalization. Likewise, we counted mentoring in different categories depending upon the context supplied by the participant.

In relation to research, publication proved to be a challenge in both the graduate programs and as tenure-track professors for some participants; for those for whom it was not a challenge, having mentorship in the publication process early on in their graduate career was crucial. These types of mentorship included collaborative or co-authoring publications with faculty and then with peers. As new tenure-track faculty, participants with established publication proved more confident in “dealing with office politics… [not] having to fear because of a strong case for tenure. I have 20+ publications” (Participant 1). Participant 6 also noted that she was able to become more selective “once I was published and got my name out.” At least three of these participants had strong cases in research requirements for tenure even before they landed jobs, while other participants struggled with publication in environments where participants did not have these research opportunities in their graduate programs and where it is not fostered at their employment institutions.

In relation to teaching, graduate assistantships helped participants to be competitive on the market in this respect. For one participant in particular, becoming a better teacher required extracurricular activities: Participant 5 said that “doing things outside the academy allowed me to figure what professional focus to take, made me a better teacher.” According to this same participant, given opportunities to design courses “from the bottom up” were crucial. Some participants received a variety of teaching opportunities: writing across the curriculum, first-year composition, engineering, business, science, or technical writing. They also approached teaching in various ways: as adjuncts at other institutions and in different departments at their institutions. Once in the tenure-stream, however, the ways participants talked about their teaching varied more widely. Participant 2 warned that “student evaluation of teaching is a measure of whether I am rehired,” while Participant 8 highly valued
the “teaching aspect” of her work. Not a single participant explicitly talked about professionalization practices used to negotiate their teaching experiences at employer institutions.

Graduate assistantships also were crucial for participants in attaining service experience, especially in administrative posts. Professionalization practices related to service tended to begin early in most participants’ graduate careers. In graduate school, Participant 5 explained that she was given chances to sit on committees and do administrative work. However, this proved a double-edged sword for Participant 5, who observed that “some of my senior colleagues were comfortable to come to me [for help in my role as administrator] but others were not.” Our interviews showed evidence of struggle by participants with balancing teaching, research, and especially service once in pre-tenure positions. While some participants realized early on that service as pre-tenure faculty was important, many struggled with finding a balance and “learning to say no” (Participant 6) to service work in the form of administrative duties. Participant 16 was quick to point out that pre-tenure faculty must “always say ‘yes’ to service opportunities, say yes and figure it out later. ‘No’ is for end of career.”

Participants resorted to professionalization practices that were extra-curricular, solitary or organic, in both their graduate programs and on tenure-track. Table 3 describes some of the professionalization practices participants referenced in the explicit and implicit practices once on tenure track.

Table 3. Examples of Professionalization Practices at Employer Institutions

<table>
<thead>
<tr>
<th>Established professionalization practices</th>
<th>Contra-professionalization practices</th>
</tr>
</thead>
<tbody>
<tr>
<td>- an appointed mentor in the English department to help with tenureship</td>
<td>- (outside of an appointed mentors) networking with faculty within the department</td>
</tr>
<tr>
<td>- an appointed mentor in technical and professional communication to help acclimatizing with issues in the specific institution (in some cases participants had both types of these appointed mentors)</td>
<td>- (outside of an appointed mentor) networking with faculty outside of the department, in some cases where the research focus was outside of English</td>
</tr>
</tbody>
</table>
The diversity in professionalization practices shows up most explicitly in the responses of participants regarding institutional versus contra-professionalization practices. When asked what the process of professionalizing looked like for them as they prepared to enter the field, participants often responded by asking for clarification about whether we were studying explicit, official professionalization practices sponsored by their departments or programs (job groups, mock interviews, application materials workshops, etc.) or implicit professionalization practices—that is, contra-professionalization practices (Carliner, 2012)—done in more organic, solitary, or extra-institutional fashion. Upon learning that we were interested in whatever sorts of practices were useful for the interviewee, most participants emphasized the importance of contra-professionalization practices quite heavily.

Overall, we spent more time analyzing contra-professionalization practices because these were the practices that most participants focused on. For example, Participant 14 noted that “off-the-grid professional development has been the most useful to me.” We also believe a confluence of practices is important and so we have made an effort (in Table 4 and the discussion that follows) to show relationships between professionalization practices. As Participant 16 puts it, “triangulated responses” from a variety of formal and information spaces were important.
Table 4. Contra-professionalization Practices Participants Focused on as Key to Success

<table>
<thead>
<tr>
<th>Participant</th>
<th>Employer institution type</th>
<th>Explicit, official professionalization practices articulated as key experiences</th>
<th>Contra-professionalization practices articulated as key experiences</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>RU/H</td>
<td>Watching professors model behaviors</td>
<td></td>
</tr>
<tr>
<td>2</td>
<td>Masters L</td>
<td>Work with undergraduate students in a research center</td>
<td>Cohorts went over materials together (with faculty guidance)</td>
</tr>
<tr>
<td>3</td>
<td>RU/VH</td>
<td>Jobs group</td>
<td>Mentorship by specific professors; attending conferences; publishing as a graduate student; talking with peers</td>
</tr>
<tr>
<td>4</td>
<td>Masters L</td>
<td>Faculty explicitly taught students how to dress, how to review job application documents, and how to interview</td>
<td></td>
</tr>
<tr>
<td>5</td>
<td>Masters L</td>
<td>Jobs group; connections made (with the help of professors) through an academy-industry publishing program</td>
<td>Working closely with faculty and peers</td>
</tr>
<tr>
<td>Participant</td>
<td>Employer institution type</td>
<td>Explicit, official professionalization practices articulated as key experiences</td>
<td>Contra-professionalization practices articulated as key experiences</td>
</tr>
<tr>
<td>-------------</td>
<td>---------------------------</td>
<td>-----------------------------------------------------------------------------</td>
<td>---------------------------------------------------------------</td>
</tr>
<tr>
<td>6</td>
<td>RU/VH</td>
<td>professors setting meetings for things like mock interviews</td>
<td>publishing as a graduate student; practice at maintaining a research-teaching-service balance; connecting with people on social media</td>
</tr>
<tr>
<td>7</td>
<td>RU/H</td>
<td></td>
<td>informal jobs group; mentoring of peers; mentoring of women faculty</td>
</tr>
<tr>
<td>8</td>
<td>Masters L</td>
<td></td>
<td>local mentors; selective advice from faculty</td>
</tr>
<tr>
<td>9</td>
<td>RU/H</td>
<td>jobs group; professionalization courses; mock interviews</td>
<td>mentoring by dissertation committee, especially the chair; book by Kit Hume “Surviving the Academic Job Hunt”</td>
</tr>
<tr>
<td>10</td>
<td>Masters L</td>
<td></td>
<td>strong relationship with mentor from a different department; attending conferences</td>
</tr>
<tr>
<td>11</td>
<td>RU/VH</td>
<td></td>
<td>mentoring by dissertation chair and other faculty; attending conferences</td>
</tr>
<tr>
<td>12</td>
<td>RU/VH</td>
<td>some formal preparation, more of it in a post-doc position than in participant’s PhD program</td>
<td>learning through action, use of Chronicle, trial and error</td>
</tr>
</tbody>
</table>
Valuing Contra-Professionalization

<table>
<thead>
<tr>
<th>Participant</th>
<th>Employer institution type</th>
<th>Explicit, official professionalization practices articulated as key experiences</th>
<th>Contra-professionalization practices articulated as key experiences</th>
</tr>
</thead>
<tbody>
<tr>
<td>13</td>
<td>Masters M</td>
<td></td>
<td>mentoring by faculty; peers who were in jobs already; working in industry</td>
</tr>
<tr>
<td>14</td>
<td>Masters S</td>
<td>Administrative posts in graduate program, mock job talk, mock interview</td>
<td>mentoring by faculty; writing groups for sharing application materials; working in industry</td>
</tr>
<tr>
<td>15</td>
<td>Masters M</td>
<td>jobs group</td>
<td>attending conferences</td>
</tr>
<tr>
<td>16</td>
<td>Masters S</td>
<td>jobs group</td>
<td>peer community</td>
</tr>
</tbody>
</table>

The challenges faced by participants in professionalizing depended to some degree on the institutions where participants were placed—specifically making the transition from their graduate programs to the institutions where they were hired. We set out to look, finally, for differences in professionalization practices relating to the type of institution a participant is employed at (Research Question #3). However, we discovered that professionalization practices actually varied more predictably according to a participant’s experience in industry and identity characteristics (race, gender), which we discuss more closely in the following section.

**Discussion**

One of the central goals of this study is to help members of technical and professional communication envision what job market success—beyond the obvious criterion of attaining a job—looks and feels like in our field. As we discuss below, however, one of our central findings is that successful professionalization does not look or feel the same for all individual professionals. Though there were many similarities across our 16 participants, there were many differences which we have done our best to represent in this article. Also important is the spectrum from what Carliner calls “formal professionalization” to contra-professionalization. There is a tension between not only individual needs and planned programmatic activities, in other words, but also between planned programmatic activities and their usefulness to specific individuals (see Figure 1).
Professionalization practices were diverse in our study and represented tensions and relationships between these four poles. Most participants found at least some of their formal professionalization during their PhD program useful, but all also experienced difficulties transitioning from their PhD program to life as a faculty member. Most participants also engaged in at least one form of what would be classified as contra-professionalization: they went completely outside of all formal training to learn skill sets that they considered important to their job search. Finally, there was also a strong diversity within our sample of new technical and professional communication faculty regarding what forms of professionalization they individually found to be useful.

Participants’ identity characteristics defined the type and number of contra-professionalization practices they enacted significantly. For example, five of the 16 participants explicitly and without prompting talked about the particular experiences of being a female in technical communication. Four of those participants talked about how important it was to them—or would have been to them—to have a mentor who could understand the challenges of non-dominant identity, specifically in relation to gender and race, in this field. Three participants mentioned the mentoring work done by senior women in the field, including mentoring organizations they are part of, as being important
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to professionalization: “We have a lot of supportive people in our field, especially the women.” One participant directly addressed professionalization practices that vary by gender: “Tech comm needs to be more supportive of women academics.” For example, “Since women undersell themselves and considering the wage gap, negotiating offers should be taught to female students.” One participant said age was a significant factor in her professionalization practices.

In addition to this, participants with significant industry experience heavily emphasized the importance of those experiences to their professionalization. “I find it invaluable, the connections you make in industry,” said Participant 14, before arguing for more emphasis on working as a professional and staying current with industry in today’s technical and professional communication programs. Likewise, Participant 13 stated that “Part of my professionalization process was working in industry. … I learned a lot about what it was to be a confident human walking around in the world, which is a lot of what it is to be a professional.”

While variances in professionalization practices often correlate to scholars’ individual identities and institutional affiliations, they are by no means static or predictable. This is unsurprising, given the definition offered by Participant 13: “Professionalization is about becoming who you are and being comfortable with who you are in an intellectual, professional setting. It’s about, for all of your limitations or flaws, just accepting and understanding your strengths and working on your weaknesses.” If scholars arrive in graduate school with different identities, different strengths and weaknesses, then it follows that their paths to professionalization would be equally diverse.

A number of participants also discussed struggling with confidence issues. Participant 6 said that “Trying to act like one knew what one was doing when one didn’t” was a professionalization experience, and several participants mentioned lack of confidence as a problem or mentioned imposter syndrome (Gravois, 2007). John Gravois notes that imposter syndrome was first discovered as a phenomenon exclusive to women but later identified as symptomatic across genders and academic roles: students, instructors, assistant, associate, and full professors. It is no surprise then that Participant 13 explained that, “We all think we’re imposters the first year on the job.” Participant 15 described the major dilemma of graduate school as directly related to (lack of) confidence; she said “perpetual insecurity” is one of the symptoms of graduate students and that she “was indoctrinated” into this perpetual insecurity, but that she ultimately learned to “stop acting like a graduate student” and instead act like a colleague.
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Many participants mentioned relationships with faculty mentors as critical to their success. These relationships were most often characterized as personal relationships that relied more on shared traits and personality than on programmatic support or intentionality. Participant 10, for example, said that his assigned mentor did not work out, but he found an excellent mentor on his own in another department, “Personality seems to matter a lot in a good mentorship relationship.” Participant 11 was careful to characterize mentorship as a human relationship rather than an institutional structure: “Key to my success were people that cared about me…mentors who really wanted to make apparent and visible to me the inner workings of academia. Like, this is how you publish. This is how you position yourself. This is how you do a job talk.” Participant 13 said she “got a ton of informal [advice and mentoring] from my mentor and other people I worked with closely.” She also clearly defined these relationships as extra-institutional: “My PhD advisor and committee saw it as a lifelong relationship, and I wasn’t aware of that until now. This is a relationship that definitely extends beyond the PhD years, if you have a good one.” Other participants discussed the importance of having professors model behaviors because, as Participant 1 put it, “that’s stuff you don’t inherently know” how to do.

Just one participant described relationships with faculty in more antagonistic terms, saying that faculty “grilled” the third-year students and “shot” questions at cohorts in preparation for the job market. Another participant said that local mentors are far more valuable for professionalizing to a university, rather than to the larger field. Several participants mentioned listening to the advice of multiple mentors and selectively choosing advice that was the best fit based on personality.

The issue of personality and how it relates to an individual’s professional life has been discussed in other fields. The correlation is made apparent in Timothy A. Judge, Daniel Heller, and Michael K. Mount’s study (2002) of personality and job satisfaction. Judge, Heller, and Mount (2002) find that cognitive personality traits influence “how individuals interpret characteristics of their jobs” and then affectively “these traits might affect job satisfaction” (p. 536). Behaviorally individuals will be happy at their place of work and more likely to achieve (p. 536). What Judge, Heller, and Mount (2002) show, then, is that one’s personality and personal identity is inextricably tied with how he or she performs professionally. The participants who engaged in contra-professionalization practices used the practices as their means of meeting professional goals.

Many participants also mentioned that the mentorship of peers
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has been critical. Participant 7 noted that classmates were the best resources, at least until they were competing for the same jobs. Others pointed to the importance of having connections to peers who are a year or two ahead: “I relied a lot on a colleague of mine. She graduated the year before me and landed a good job,” said Participant 11. “She helped me think through how do I craft a good job letter or a solid job talk. That was the most helpful because... she was really close to the process. She had just done it.” Participant 13 also reached out to people who had recently gotten academic jobs. “They were so supportive and sent me all their application materials. My peers who were just a little bit ahead of me were incredibly helpful.” Finally, one participant noted that relationships with peers were important but secondary to relationships with faculty: “[C]ollaboration with the faculty members was so important because otherwise grad students don’t really know what to expect or what [the publication process] looks like.”

Implications

Our findings show that contra-professionalization practices are most important for graduate students looking to become tenure-track faculty members. Activities such as engaging in informal networking at conferences, within departments, and outside of departments; connecting with like-minded researchers over social media; and working closely with colleagues at different institutions were some of the tactics that our participants employed during their professionalization process. Time and again, these activities were the ones cited by participants as the most important in their journey to become academic professionals.

Such a finding would appear to call for the incorporation of practices like these into official mentoring activities within PhD programs. Yet, we cannot call for institutionalization of such practices for fear they would lose the very elements that make them valuable. Thus, we instead call for increased recognition and support of the faculty who provide contra-professionalization practices. These “off-the-grid” practices are the ones that are most formative for graduate students and thus should more often be recognized (but not institutionalized) as important for the profession.

Furthermore, the professionalization opportunities that participants were offered and the eventual practices that they used varied based on their industry experience and even more so on their identity characteristics, especially race and gender. Additionally, identity and personality played key roles in what professionalization practices were useful. The study reveals that in order to effectively professionalize
technical and professional communication graduate students, professionalization practices must be individualized. Our data suggests that the most effective way to do this is to create infrastructures that make space for and recognize the importance of contra-professionalization practices.

Such infrastructure might look like explicit attention to professionalization (perhaps through informal groups that meets semi-regularly) for PhD students early in their academic careers. This attention would help students understand the three-pronged academic approach of research, service, and teaching and might help them more quickly understand and seek the support they most need. Another method for valuing and making space for off-the-grid professionalization practices would be to host or model social gatherings; this gives students space to develop a program culture as well as a model for what such gathering might look like when designed by students themselves. Institutions might also make funding pools available for contra-professionalization practices. For example, a pool of money that students can apply to travel to meet important scholars in their field would be supportive of individualized, contra-professionalization practices. Finally, explicit valuing of the work done by individual mentors in one-on-one situations has shown to be vital for participants.

Similar infrastructure for new tenure-stream assistant professors could look like an informal mentoring group for first-year and second-year faculty that creates space to meet tenured colleagues without forcing formal relationships. In other words, we advise that technical and professional communication programs create temporary and informal opportunities for networking, organically giving rise to more contra-style professionalization and mentoring practices. Simultaneously, we suggest the work of faculty mentors who provide the extensive labor for graduate-student and early-career mentoring be acknowledged as part of those mentors’ own teaching or service duties.

Our findings also point to a need for future research on professionalization practices of tenure-track faculty. Our research questions could transfer directly to a variety of other, similar contexts. Studies on the tenure practices of different institutions, the transition from assistant to associate and associate to full professor, and the role of professionalization in preparing graduate students for positions at specialist institutions are all areas in need of further study as we learn more about professionalization in the scholarly arenas of technical and professional communication. In addition, future studies might address how professionalization practices cross-pollinate with industry—what practices transfer, what do not, and why. Such studies could aid our programs in professionalizing academics to teach future industry professionals.
Valuing Contra-Professionalization

References


Galletta, Anne. (2013). Mastering the semi-structured interview and

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Appendix: Interview Script

1. How long did it take you to complete your PhD program?
2. Was there a formal or informal jobs group in your PhD program, and if so: did you participate in it? What were the primary activities associated with this jobs group?
3. What is the current institution you are employed at?
4. How would you describe your current institution (e.g. research-intensive, research-comprehensive, teaching-focused, PhD-granting, masters-granting, 4-year, etc.)? And, how would you describe the institution(s) where you did your graduate studies?
5. Tell us the story of how you came to be a successful job candidate, starting with your first experience in your graduate work that started you down that path.
6. What experiences were most impactful in this professionalization process?
7. Were there obstacles you had to overcome in your process of professionalization, and if so, what were they?
8. How did you discover what type of institution you wanted to get placed at?
9. How did you fashion a professional identity that was a good fit with that type of institution?
10. What was your approach to submitting job applications? Did you apply only to jobs that seemed a perfect fit, or did you take a wider approach?
11. Is there anything you wish you had done differently in your path to this job, and if so, what is that?
12. What resources were most important to your professionalization process? Are there any additional resources you wish you’d had access to, and if so, what are they?
13. How prepared did you feel for the job market? Why do you think this was the case?
14. If you had one piece of advice for future job candidates in our field, what would it be?
Acknowledgements
We thank CPTSC for its support of this project through a 2014 General Programmatic Research Grant. We also want to acknowledge the support and guidance of Lisa K. Meloncon and Kirk St.Amant. Thanks to Joshua Vaughn for his design work on Figure 1. Finally and most importantly, we gratefully acknowledge the time and effort of the tenure-track faculty who participated in our study. We are greatly indebted to you all.

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Abstract. Internships can offer valuable workplace experience to technical communication students, but in order to ensure a learning experience, much attention must be paid to the fit of the student with the internship opportunity. In order to explore in depth these contextual factors, a qualitative, semi-structured interview approach was used to discuss internship coordinating with eight internship coordinators in the US in technical communication or similar programs. The findings indicate that career counseling and confidence-boosting are integral to the process of matching students with internship opportunities. Also, professionalism is an important component of both student preparation and vetting internship opportunities. Finally, contextual factors such as institution location or coordinator experience may impact the internship coordinating.

Keywords. experiential learning, internships, placement, professionalism, technical communication programs
lined the roles of each involved party, the intern, the coordinator and the industry partner. However, he gives only four pages in his article to discuss the duties of the internship coordinator and the strategies for balancing this complex job, and relies completely on Munger’s own experience as coordinator in a particular institutional context. Susan Katz (2015) expands on Munger’s work by surveying internship coordinators at peer institutions to her own, and offers more suggestions and discussion of the coordinator’s role in securing internships. However, the programs she surveyed all fall into a similar category as her own—a part of the study design—and thus less attention is placed on smaller programs, particularly at rural institutions.

As an internship coordinator at a small rural institution, I aim to address more of the contextual factors involved in matching students with internships. In order to unpack the complexity of the role of internship coordinators, I focus only on the matching of student interns to internship opportunities. I do not focus on the monitoring, evaluation or other aspects of the internship coordinating position though these are all valuable parts of the internship process. My focus stems from conversations at CPTSC (in 2013 and 2015), where other coordinators have reported being challenged to find enough internship opportunities for students, particularly when their institutions are rural, in a downturned economy, where industry employers can barely pay for new employees much less interns.

My findings from eight, 30-minute, qualitative interviews with a variety of internship coordinators show that institution context, student preparedness, internship coordinator experience, and internship duties all influence the effectiveness of strategies such as career counseling students or preparing students with coursework. I highlight these complexities in order to show the rewards and challenges of this job to potential new internship coordinators and interested faculty or administrators.

**Review of Relevant Literature**

Internships are an integral part of many technical communication programs and can give students valuable workplace experience that can help them transition to jobs after graduation. Lisa Meloncon and Sally Henschel (2013) noted that out of the 65 programs in their study, the internship was required in 51% of the programs and elective in 32% of the programs (p. 50). This means that over 80% of programs they surveyed in technical and professional communication had some kind of internship component. Gerald Savage and Marcea Seible (2010) found that 90% of the 91 programs they investigated offered internships (p.
Not only are internships prevalent in the present, but they are a long-standing tradition in technical communication. Deborah Bosley writes of the importance of workplace experiences for technical communication students as early as 1995, and Sherry Burgus Little reports on internship experiences in technical communication as experiential learning in 1993. Sides and Mrvica (2007) devote a whole book to internships and the theory that underpins this important element of the technical communication curriculum. The field of technical communication values training students in professional work environments, and much has been written about internships as sites of student learning (Kramer-Simpson, 2016).

More knowledge is needed about how to set up these rich learning experiences for students, particularly from the internship coordinator’s perspective. In this review of the literature on internships in technical communication programs, I first discuss some of the benefits to internships. I then move to discuss internship coordinators’ roles in this position. Finally I discuss some of the contextual factors raised in the literature that may impact internship coordination, and I call for more research that provides a rich description of these issues.

**Benefits to Internships**

Internships provide complex contextual experiences that are simply not available in the classroom (Kohn, 2015; Bourelle, 2014). Internship mentor feedback and enculturation in the workplace offer students opportunities to engage in professional level work with professional-level expectations. Unlike the classroom, the workplace is structured around tasks for the benefit of the organization and collaboration is even more important in accomplishing these tasks than the more individualized academic curriculum. Even service learning projects, which are designed to offer more real-world experience, are not as immersive as the student entering an organization and participating as a member for a number of hours for a number of weeks. Internships can offer even students enculturated in the workplace a critical view of their experiences (Henze, 2006) and internships give students a chance to reflect on career trajectories that they may want in the future (Bay, 2006). Internships teach students to communicate with complex audiences and to engage in work that could build on their existing skill sets.

Internship host organizations also benefit from student interns. Internships are opportunities for local organizations to scout potential employees (Jennings, 2012; Munger, 2006; Sapp & Zhang, 2009). Students can bring energy and new skills to the internship such as
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computer-based skills (Freedman & Adam, 1996; Sapp & Zhang, 2009) (more recently, managing social media is a popular student intern task). Yet, these benefits can also pose challenges, particularly if the student skill set does not match the expectations of the host organization. For this reason, Janel Bloch (2011) encourages interns to find ways to fit their skills into the needs of the organization. Hosting interns is something practitioners want to do (Jennings, 2012), yet an intermediary internship coordinator is needed to set up and manage the partnerships between students and host organizations. More research is needed to describe how internship coordinators take on this task.

Internship Coordinators’ Roles in the Internship

The internship coordinator plays a role in helping the student communicate with the industry mentor, and vice versa. In fact, Kirk St.Amant (2003) encourages more communication among these three stakeholders in the internship experience. Ann Jennings (2012) reports that one of the reasons practitioners have not offered internships is that they have no connection to the academic community. Internship coordinators often initiate contact with local businesses and nonprofits to inquire about internship opportunities.

The internship coordinator role is more than just finding workplace opportunities and sending students into the workplace. Munger does an excellent job to cover the main tasks of internship coordinators: “The role of an internship coordinator is to identify and help create possible internships, serve as a resource for interns and agency supervisors, and evaluate interns’ efforts” (p. 329). An internship coordinator maintains communication among stakeholders before, during and after the internship. Ultimately, “[c]reating or maintaining an internship program is much more complex than most people realize” (Katz, 2015, p. 43). For example, an internship coordinator may need to determine what “suitable” opportunities exist for students, opportunities that offer professional experience instead of just typing or getting coffee (Munger, 2006; Tovey, 2001).

Another aspect of internship coordinators’ role is that of career counselor. Charles Sides and Ann Mrvica (2007) comment that “exploring students’ wishes for their internship” is an essential part of finding an internship match for students (p. 70). Tiffany Bourelle (2015) commented that she tried to “determine which nonprofits best suited the students’ interests” so that they would have good fits for their internships (p. 412). However, Bloch warns that interest alone is not a sufficient basis to accept an internship: “Before accepting a position within an organization, technical communicators need to determine whether
their individual values and goals mesh with the organizational culture” (p. 317). If an organization is religious, for example, and the student is not, there is a potential for conflicts to arise in the internship. The internship matching process may in fact require much back-and-forth negotiation, as internship coordinators may have a limited list of internships. Munger captures this common problem: “Some students think coordinators have a special file of internships that precisely match a student’s skills, salary requirements, and schedule” (p. 329). Finding the best internship for students may require a fair amount of discussion about what is desired and what is available.

Other roles include those mentioned by Katz: teacher, publicist, and manager. The internship coordinator may teach a class and require reflective writing and/or a portfolio for students completing internships. Internship coordinators may be valuable sources of leads for students finding internships. Also, internship coordinators monitor students once in internships, and help with potential conflicts that arise in the workplace and often evaluate or grade students’ experiences (also noted by Sides & Mrvica, 2007).

**Contextual Factors Influencing Internship Coordination**

Katz found in her survey of technical communication programs that how internship programs are coordinated varies across institutions. This variation may reflect unique constraints of the institution or context in which these internship programs operate. To some degree, the variation is reflected in the internship literature. Jennifer Bay (2006) explains, “Because of our geographical location, we lack the vast network of corporate entities that large cities offer. Thus, most of our internships are unpaid; many are with local not-for-profit organizations and some with affiliated university departments” (p. 136). Bay emphasizes non-profits as these are most plentiful in her particular community and offer good career opportunities for students. Yet, Katz describes a very different community:

I am fortunate to live in a very economically stable area with a great many opportunities for student interns. As an example, in the four weeks prior to the beginning of the fall 2013 academic year, I was contacted by 21 organizations asking for an intern, most of which were organizations I had not worked with previously. (p. 50)

Katz’ description of an “economically stable” community may give her more opportunities for internships. More work that investigates the relationship between context and internship coordination is necessary to understand the impact of rural or urban locations.
Another contextual factor that may influence internship coordination is the academic internship coordinator’s connections to the workplace. In fact, St. Amant notes that, “educators are often limited in the amount of direct exposure they have to corporate organizational structures” (p. 233). To counter this, both St. Amant and Liberty Kohn (2015) advocate more dialogue between academia and industry. Bay (2006) mentions that internship coordinators may use industry connections to secure internships, and this kind of networking poses an important question for further inquiry: how do academics, particularly new faculty with little industry experience, build connections in the community? More work is needed to explore how internship coordinators develop relationships with potential internship hosts.

Finally, the issue of student preparation is an issue of institutional and even individual context. The goal of the internship is, as Janice Tovey (2001) explains, to “enhance their [students’] current skills and help them learn others.” (p. 235). Internships are often placed at the end of the degree curriculum as a capstone or senior requirement so that students have time to build up these skill sets and prepare for the workplace experience. Some institutions implement a minimum GPA requirement as a way to ensure that students can meet professional level expectations in the internship workplace (Katz, 2015). However, not all students, by the time of the internship, have developed professional-level skills. Sides and Mrvica discuss this issue: “There are high-profile, high-stress sites that we use only for our most highly qualified students” (p. 70). They discuss that, for those students not as ready for workplace demands, there may be different, adapted opportunities. Recognizing students’ limitations as well as strengths is an important part of helping students finding an internship that will be a learning experience.

**Methods**

To help describe more of the contextual issues that play a role in internship coordination, and to report strategies from a variety of different contexts, this study used a qualitative, semi-structured interview approach with eight internship coordinators from a variety of institutions. Their responses helped show how strategies and challenges faced in internship coordination were handled by both experienced and inexperienced coordinators. By focusing only on the matching of students to internship opportunities, I am able to give more detail on these approaches. My hope is that this information will help new internship coordinators, and provide some description of the tasks involved in internship coordination for other interested faculty and
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administrators.

For this study of internship coordinators, I received IRB approval from my institution to collect audio recordings of phone interviews with internship coordinators of technical and professional communication internships. I employed a qualitative data collection approach to better represent the contextual constraints at work in internship programs, and I appreciated the detailed responses from the internship coordinators interviewed. Previous literature has explored many different ways of helping connect students to professional learning opportunities in the workplace (Bloch, 2011; Katz, 2015; Munger, 2006), though mostly in the context of the author’s own programs (Bloch, 2011; Katz, 2015; Munger, 2006). These authors provide great suggestions for internship coordinators to try and see which work best. However, with all of these possible approaches, it remains unclear what works in the particular context, or how a similar strategy might look different across different programs or different universities (or even different regions of the US). The empirical data from eight coordinators give a variety of perspectives, yet the data allow me to draw from central themes throughout the conversations. In this study, I focus on two central research questions:

1. What strategies do internship coordinators use for matching students to internships?
2. What challenges do internship coordinators face in matching students to internships?

Participants
The internship coordinators who participated in this study were first contacted through the CPTSC listserv and invited to participate in a focus group discussion at the 2014 conference in Colorado. Three internship coordinators participated in this discussion, and agreed to follow-up interviews. Five other internship coordinators contacted me and agreed to be interviewed though they were not able to attend the focus group discussion, for a total of eight participants. The participants are given pseudonyms for this article particularly for the discussion of challenges, which may be sensitive information. The internship coordinators range from new to experienced, directors of small and large programs. This variety of perspectives helped me abstract fundamental similarities across the diverse programs (see Table 1).
Table 1. Internship Coordinators and Institutional Information

<table>
<thead>
<tr>
<th>Interns per semester</th>
<th>Brad</th>
<th>Donna</th>
<th>Janet</th>
<th>Larry</th>
<th>Mary</th>
<th>Rachel</th>
<th>Robert</th>
<th>Sarah</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>12</td>
<td>11</td>
<td>10–15</td>
<td>4</td>
<td>12</td>
<td>20–30</td>
<td>5</td>
<td>6–8</td>
</tr>
<tr>
<td>Institution size (enrollment)</td>
<td>28,000</td>
<td>8,000</td>
<td>40,000</td>
<td>12,000</td>
<td>28,000</td>
<td>22,000</td>
<td>14,000</td>
<td>27,000</td>
</tr>
<tr>
<td>Institution location</td>
<td>Rural</td>
<td>Rural</td>
<td>Rural</td>
<td>Sub-urban</td>
<td>Urban</td>
<td>Urban</td>
<td>Rural</td>
<td>Urban</td>
</tr>
<tr>
<td>Credits</td>
<td>3</td>
<td>3</td>
<td>3–6</td>
<td>3</td>
<td>3–6</td>
<td>3</td>
<td>3</td>
<td>3</td>
</tr>
<tr>
<td>Work</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Hours</td>
<td>140</td>
<td>150</td>
<td>140–280</td>
<td>100</td>
<td>120–240</td>
<td>180</td>
<td>80</td>
<td>60</td>
</tr>
<tr>
<td>Level</td>
<td>UG</td>
<td>UG</td>
<td>UG</td>
<td>UG</td>
<td>UG</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Data Collection

I received IRB approval and conducted eight, 30-minute interviews via phone and Skype with internship coordinators from other technical and professional communication programs in the US in the Fall of 2014. The interviews followed the protocol attached in Appendix C, though were semi-structured to allow me to follow up on areas of interest in the responses of the participants. I followed Michael Hughes and George Hayhoe’s advice to mix open and close-ended questions, and to “deviate from the protocol” if there are responses that match the research questions if not the anticipated response (2009, p. 84). This particularly happened when I asked participants to discuss challenges of the internships. Specific experiences shared by these coordinators revealed many examples of how they built networks, maintained relationships with host organizations and matched students to internship opportunities. These interviews were transcribed and checked for accuracy. Member checking of concepts was also a part of the review process.

Data Analysis

All of the interviews with the internship students and internship coordinators were transcribed. I first reviewed all of the transcripts with internship coordinators and coded for emergent themes pertaining to
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the interview question “What strategies do internship coordinators use for matching students to internships?” I discovered in my review of the transcripts that, as Munger (2006) has suggested, students may find their own internships but are often guided and helped by the internship coordinator. Initial codes included Preparation, Accommodations, Aids for Finding, Use of Contacts and Paid/Unpaid. Following the advice of Mary Sue MacNealy, that “the purpose of categorization is to reduce data by systematically grouping them into units that enable a researcher to make inferences about the construct of interest” (1999, p. 133), I abstracted these codes to categories and then broke these down into subsections. Career Counseling was broken down into Confidence-boosting and Career Counseling. Aids for Finding was broken down into Students Find and Lists and then recombined into the Placing/Seeking Student Role under the larger category of Strategies. As a unit, Challenges was also broken down into smaller sub-categories of Location, Coordinator Workplace Experience, Student Preparation and Internship Duties. See the Table 2 for examples of codes.

Table 2. Codes and Quotes from Internship Coordinators

<table>
<thead>
<tr>
<th>Code</th>
<th>Quote</th>
</tr>
</thead>
<tbody>
<tr>
<td>Strategies</td>
<td>Strategies</td>
</tr>
<tr>
<td>Confidence</td>
<td>“I basically have to almost talk them [students] up and into thinking of themselves as leaders or as managers.”</td>
</tr>
<tr>
<td>Career Counseling</td>
<td>“I tell them that we all have strengths and weaknesses and that is a contributing factor to why we go into the fields that we go into and the types of work that we go into.”</td>
</tr>
<tr>
<td>Placing Students</td>
<td>“I match them [students] with a client that I have set up”</td>
</tr>
<tr>
<td>Interviewing</td>
<td>“Again, they [students] have to actually apply for these internships”.</td>
</tr>
<tr>
<td>Middle Ground</td>
<td>“We [coordinator and intern] really go back and forth quite a bit about what is realistic to find.”</td>
</tr>
<tr>
<td>Professionalism</td>
<td>“I’ll talk about what it means to be professional”</td>
</tr>
<tr>
<td>Previous Course-work</td>
<td>“I would like them [students] to have at least been in their major for a couple semesters”</td>
</tr>
<tr>
<td>Challenges</td>
<td>Challenges</td>
</tr>
<tr>
<td>Location</td>
<td>“The vast majority of [internships] are unpaid and partially that’s because we live in a rural area”</td>
</tr>
<tr>
<td>-------------------------------------------------------------------------</td>
<td>--------------------------------------------------------------------------------------------------</td>
</tr>
<tr>
<td>Coordinator Workplace Experience</td>
<td>“Where I am at a disadvantage is I’m academic. I don’t have ties in the community that [my predecessor] did”</td>
</tr>
<tr>
<td>Student Preparation</td>
<td>“I’m aware of a couple of places here on campus that will work with students who are more challenging”</td>
</tr>
<tr>
<td>Internship Duties</td>
<td>“[The student] was asked to do running errands kind of things. She worked about 60 hours. I made her come out.”</td>
</tr>
</tbody>
</table>

**Results**

**Role of the Internship Coordinator**

Internship coordinators discussed very different programs tied to the local context and requirements of their programs. Yet, all of the internship coordinators talked about contacting the work site, vetting the tasks the student would complete and helping students develop professionalism to bring to the workplace. All of these activities exceeded the scope of the regular classroom hours, and in Brad’s words, often appeared “invisible” to other department faculty or administrators. Brad in particular discussed the consequences of this transparent workload:

> My chair came to me and said, “We’re not going to give you all of these course releases for internships because my understanding is that even though you’re working a lot with grad students, the undergrad students you’re just sending them out.”

This perception of just sending interns out is a common misperception with some faculty and administrators, and one of the reasons for this article is to raise awareness of the complexities involved in matching students with internships that not only provide workplace experience but prepare students for a career. From the interviews with eight internship coordinators and/or program directors at both small and large universities with technical and professional communication majors (or emphases within the English major), I have seen that these committed academics draw on several common strategies to make the most of these workplace situations as learning opportunities. I follow the discussion of strategies with some common challenges associated with matching students to internship opportunities.
Strategies for Matching Students with Internships

Internship coordinators mentioned several different strategies that they use to match students with internships. All internship coordinators mentioned preparing students through coursework. Most coordinators encouraged students to find their own internship opportunities, though often mentioned that they kept a list of possibilities to help direct the students. Many coordinators mentioned that they do some amount of career counseling to help students find internships that will be the best fit. I include a table below of the strategies and coordinators who mentioned using these techniques. I then discuss these strategies in more detail in the text (see Table 3).

Table 3. Internship coordinator strategies for placing student interns

<table>
<thead>
<tr>
<th></th>
<th>Brad</th>
<th>Donna</th>
<th>Janet</th>
<th>Larry</th>
<th>Mary</th>
<th>Rachel</th>
<th>Robert</th>
<th>Sarah</th>
</tr>
</thead>
<tbody>
<tr>
<td>Preparation through coursework</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
</tr>
<tr>
<td>Resume</td>
<td>X</td>
<td>X</td>
<td></td>
<td></td>
<td>X</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Portfolio</td>
<td></td>
<td>X</td>
<td>X</td>
<td>X</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Confidence boosting</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Career counseling</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Students Find Internship</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
</tr>
<tr>
<td>Department List of opportunities</td>
<td></td>
<td></td>
<td></td>
<td>X</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Minimum GPA</td>
<td></td>
<td>X</td>
<td>X</td>
<td>X</td>
<td></td>
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<td></td>
</tr>
</tbody>
</table>

Confidence-boosting. Part of the role the internship coordinators take in matching students with internship opportunities is that of cheerleader. In this role, they often need to bolster student confidence, and this takes much negotiated conversation. Brad explained, “They [the students] almost always come in saying not “I want to do an internship,” but “I don’t know if I can do an internship.” Brad went on to say that he helped students identify strengths in their lives, not just their academic performance. The students realized they had more experience than they thought. “They [students] get into this position...
and they realize how much it resembles let’s say, helping develop the newsletter at their church for three years of high school.” Brad helped students recognize the talents they bring to the internship experience through much conversation. Janet also identified a confidence-boosting role with her students: “I feel that one of my goals as a teacher in the internship class is to foster a sense of confidence in some of the female students who may need that.” Janet seeks to empower her students to take on challenging workplace experiences. Donna explained that confidence-boosting is also tied to knowing the students well. Donna described that “I know most of the students before they go out on the internship, and so I just generally try and counsel them when they come in as far as what places might be best for them, based on what I know.” She also identified a need for confidence-boosting: “I basically have to almost talk them [students] up and into thinking of themselves as leaders or as managers.”

Transitioning to the workplace may be intimidating for many students, and internship coordinators to some degree play the role of confidence-booster.

Career counseling. In addition to bolstering student confidence, part of the career counseling is helping students identify jobs that they want in the future, or as Janet explained, knowing that they do not want that job in the future: “I tell them that we all have strengths and weaknesses, and that is a contributing factor to why we go into the fields that we go into and the types of work that we go into.” Helping students identify their strengths and weaknesses within the safe confines of a teacher-guided class was identified as an important part of career development. Janet described her philosophy at length:

> My whole philosophy with the internship class is that, if they take my class and they learn they never want to do that kind of work again in that internship, I think they’ve had a successful internship. Part of the reason is, I think it would be horrible to think that you wanted to be a copy editor for your life and then do copy editing and realize you hate it and not know that before you graduate. And so you get into a job where you’re a copy editor and you’re miserable and you can’t get out of it and you don’t know how to make a career change. You have no support. You have no teachers with you.

Janet saw the internship as an opportunity to test out careers, and part of that process was identifying strengths and weaknesses, and interests in future careers. Mary also mentioned that some students find out through internships what they do not want to do. Robert saw internships as a blend of career development and skill building. He explained that students need internships for “when they get into a job,
they can have something to fall back on, remember, some foundation-
al ideas of the process of being in a job, but also experience in terms of
being able to put it on their resume."

**Placing vs. seeking internships.** Internship coordinators varied
widely in their role of helping students find internship opportunities.
Some coordinators tended to place students with internships. Others
required that students apply for opportunities. Others took a middle
ground.

Larry discussed internship opportunities “given” to the depart-
ment, for a good or even the “best” student. Sarah described that she
“match[ed] them [students] with a client that I have set up, who I have
talked with in advance.” Janet described sending specific opportuni-
ties to particular students she thought well-suited for those positions.
To some degree, these coordinators placed students with internship
opportunities.

To help students find internships, Mary, Rachel and Janet described
a list their respective departments kept of internship opportunities
that was disseminated to students. Rachel and Donna mentioned that
they required students to apply for internships. Donna provided sup-
port for that process as she explained:

> They [students] are welcome to always send me their applica-
tion materials, like if they need to include a writing sample. I
help by reviewing their materials for them and giving them
suggestions on how to put together their materials in a more
professional manner, so that when they approach the employ-
ers that they have some solid materials.

However, Donna was careful to explain that students were respon-
sible for securing the internships, and added later in our conversation,
“Again, they [students] have to actually apply for these internships.”

Rachel also required students to interview for internships, and she
worked with students on a portfolio beginning in the sophomore year.
Rachel emphasized that students “cannot go out to interview for their
position, their internship, until that portfolio is fixed” or checked by fac-
culty. Brad took a much more conversational approach and described
his philosophy at length:

> We [coordinator and intern] really go back and forth quite a bit
about what is realistic to find. We [the department] get people
who say, “I’m a creative writer, I want to be in publishing” or
“I’m a tech writer and would love to develop software health
systems for a major company.” Well, there’s just no company like
that around or they’re not really at that point in their develop-
ment where they could tackle a major project like that. A lot of
the conversation that I have with them [students]early on when we're looking for a position becomes finding the sweet spot between what somebody wants to do ultimately and what they're ready to do based on their course work and their prior experience, and trying to figure out what's available, but also where the learning is going to happen for them at that moment.

This comment from Brad unlocked the sheer number of factors at work with matching students with internships: first, what opportunities from local companies may determine internships, then the issue of the student's skills plays a role, then there is the student's career aspiration, and finally the issue of how the student could build on existing skills so that learning may occur. Truly, matching students with optimal internship experiences entails more than simply sending them out into the workplace.

Professionalism. Several internship coordinators mentioned helping students present themselves professionally to internship opportunities. Brad helped students with resumes for internships just as Donna mentioned, “I give them feedback on their resume. I give them guidance on their cover letters.” Mary provided overall professionalism instruction: “I’ll talk about what it means to be professional, how they have to dress, how they have to talk, how they have to email.” Donna also mentioned that she worked on professionalism skills in her classes, like email. This may in fact help ease the transition for students from school to work.

Previous coursework. All of the internship coordinators discussed wanting students to have some experience and skill development through coursework before taking on an internship. Sarah noted that she wanted “students who have had some training in the program” for the internship practicum. Brad commented, “I would like them [students] to have at least been in their major for a couple semesters.” For Robert the internship was the capstone course. Also, Donna identified the internship as the “capstone course” for her students. Donna mentioned “a minimum of four professional writing electives that they have to take” so students have a strong base in the curriculum before their internships. Janet also placed the internship at the end of the professional writing course sequence, but also required a minimum GPA: “They [student interns] also have to have a 3.0 GPA in the major. So they’ve had most of their classes and they have demonstrated that they are some of the top students in the major.” Mary and Larry also mentioned a minimum GPA requirement. Larry mentioned that the whole point of the internship was to “build upon the skills learned in the technical writing classroom.” To ensure that students have devel-
oped basic technical and professional communication skills, Rachel described a portfolio system where students “give samples of their competencies and we have seven categories in the rubric.” The faculty in the program then evaluate students’ portfolios before they enter the workplace. All coordinators use coursework to prepare students to enter the workplace.

**Challenges**

As with most experiential learning, there are challenges to providing internship opportunities in the workplace, and some of the same challenges are mentioned by the coordinators as are reflected in the literature on internships (see Sides & Mrvica, 2007). Two of the most prevalent issues are the challenges of student preparation and internship duties. Internship coordinators mentioned making accommodations for students who were less prepared for workplace experiences. Also, internship coordinators shared some of the stories of internships where the duties did not reflect what Tovey (2001) and Munger (2006) term “suitable.” These coordinators then discussed how they mitigated these experiences. I provide a table of the challenges mentioned (Table 4), and then discuss these in more detail in the text below.

**Table 4. Internship Challenges**

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<th>Brad</th>
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**Location.** The location of the university may pose some challenge to helping students find internships, or more specifically paid internships. Janet discussed her approach as her university is situated in a rural Midwest location: “The vast majority of [internships] are unpaid and partially that’s because we live in a rural area in the Mid-West where we don’t have access to lots of companies and businesses that can pay our interns.” Janet turned this challenge into an opportunity to help local nonprofits. Janet described her philosophy:

- My personal philosophy is that I like to steer students into working with not-for-profit agencies which are not going to be able to offer paid work. I think it’s important for them to explore that avenue of work because not-for-profits are a growing field in this country.
When I asked about internship opportunities at Brad’s university, he also mentioned, “We’re in a sort of rural area. We don’t have a lot of high tech out here, so it’s always been an individual matching game for us.” He spent much time counseling students about the best fit for their skill set in order to work with the internship opportunities that exist.

Robert had the opposite issue in part due to location and the surrounding lack of university programs in technical communication. He reported, “We are one of the very few formal tech writing programs of any kind [in our state], so there’s just a paucity of candidates [for internships]. I have encountered more opportunities than there are people I can place.” Though seemingly an enviable challenge for internship coordinating, it is possible that if potential employers are not able to find interns, they may lose touch with the program.

**Coordinator workplace experience.** The academic’s connection to the community may also pose challenges for finding internships for students. Mary candidly explained: “Where I am at a disadvantage is I’m academic. I don’t have ties in the community that [my predecessor] did, so she was much better at finding companies in [our town] who would be willing to take on interns.” Rachel and Donna conversely commented on how their workplace experience helped them in the position of internship coordinator. Rachel noted “I started with the internships personally, because back in my graduate school days I worked for headhunters.” Her workplace experience facilitated her role as internship coordinator.

**Student preparation.** Student preparation or skills may also challenge internship coordinators to match students with an internship. Some programs had a minimum GPA to ensure that students have some skills. Other programs placed the internship at the capstone of the curriculum or required that students have completed classes in the major or emphasis. Still, not all students who may want internships are prepared for the rigors of the workplace. In my interview with Donna, she mentioned, “I’m aware of a couple of places here on campus that will work with students who are more challenging, or students who may have certain skills that are not quite developed yet.” Robert, Rachel and Donna all mentioned that campus or understanding alumni provide internships for those students who may not be ready for the workplace. Larry discussed a challenging situation that he encountered, when a student lacked experience. He shared this story:

> I think I had, maybe my first student ever, who just had zero experience of anything, outside of college. When we did a resume in class, she said, “Well, I focused on my education.” I found out that she had nothing to talk about, outside of school. It was
like, extra-curriculars? Nothing. Jobs and activities? Nothing. No jobs. She tried to put on singing, and not in choir, just on her own, on her resume.

Many students do not have work experience or extra-curriculars that may help ease the transition to the workplace. For this reason, Donna discussed running many of the pre-internship classes as workplace environments to give students more experience with communication and professionalism.

Once in a while, preparation was not the challenge, but rather a lack of student engagement. Rachel described only one case in her 25 years of directing the internship that presented this challenge:

A couple of years ago I had a couple of students who basically weren’t showing up. One of my students got the nickname Bad News Betty because if she didn’t want to go into work, and it was an internship she chose, she would call in, call in sick, call in with some sort of disaster. I got an earful from the sponsor, this is again, the good thing about the rapport with the sponsor.

Rachel was clear to say that this case was rare and that her rapport with internship organizations was key to keeping students accountable. Rachel emphasized that it was important that industry mentors understand that they worked with students, and that “most of our internship sponsors will understand that, students are not yet professionals; they’re preparing to be professionals.” Finding good matches for internships may include finding ways to ease the transition for less-prepared students.

**Internship duties.** Finally, the caliber of the tasks in the internships may be in fact less professional than desired or agreed upon with the host organization. For example, Donna relayed a cautionary tale of a student interning with a self-published writer. After this experience, she mentioned that her department sat down and decided:

If students are going to intern with self-published writers then the self-published writer has to submit writing samples to us prior to us approving it, because if they’re not good writers then our students are not learning from experts, and then they’re not getting the experience that they need.

This challenge is part of the hidden work of internship coordinators: vetting the work tasks provided by the internship workplace. Other internship coordinators discussed the challenge of finding quality work at the host organization. Mary mentioned that one of her students in the summer “was asked to do running errands kind of things. She worked about 60 hours. I made her come out.” Mary removed the student from the internship because she felt the organization was
only asking for a worker, not an intern. She helped the student find a second internship the following semester. Janet described the process of vetting internship locations:

I ensure that the kinds of sites where they’re working actually have them apprenticing with another professional writing person or supervisor who can do that. I really steer clear, unless it’s a really motivated student and I think that the student can do it, which is rare. I steer clear of internships where a student is the only professional writer or the only person working say for a start-up company where the people who are running the start-up company really don’t know what they want.

Janet emphasized here that it was important to have mentoring in internships and that helped the student maximize the internship experience. Mary did mention one case that the internship duties caused some problems for the intern: “I have a student this semester who is working in a courtroom, a criminal courtroom. When she goes in to some of the holding areas where they have the people who are arrested, they make obscene comments to her.” Mary also mentioned that this behavior stopped after the student complained to her supervisor, showing the importance of having a mentor in the organization to intervene. Robert discussed having to remove interns from an internship, and he did so in the cases “if they’re either just doing clerical work or there’s some sort of dysfunctional relationship with the mentor.” Robert emphasized that he discussed the kinds of work—writing, design, or organization—that he required of students in internships before they entered the workplace in an effort to avoid circumstances where the student is exploited as free labor. He reported, “That’s [exploitation] happened once in the 10 years I’ve been doing it [internship coordinating].” Sarah also weighed in on the issue of internship duties: “a bad internship opportunity is somebody who’s looking for office help but isn’t willing to trust the students to take on challenging tasks.” All of the coordinators interviewed emphasized the need for professional work in the internships.

Discussion

Many of the strategies and challenges mentioned by the internship coordinators have been discussed in the literature on technical communication internships, such as needing both student preparation and professional internship opportunities. Some of the particular findings of this study are that the role of career counselor is particularly important to internship coordinators. Also, professionalism is an important component of the internship. Finally, internship coordinators often
work beyond the bounds of the semester and scheduled course hours, yet this work is often invisible to colleagues or administrators. I discuss these issues in the sections below.

**Career Counseling**

A main finding from this study of internship coordinators is that they play a role of career counselor and at times, cheerleader. This role has been implicitly identified in the literature on internships but not explicitly referenced. Many students may not have much job experience and are intimidated by entering the workplace. Helping students see their strengths, as mentioned by Brad, Donna and Janet, gives students needed confidence to pursue their future careers. Not always, as Brad mentioned and as Munger (2006) mentioned, do students have realistic ideas of internships. Through negotiation, Brad helps students build on their skills with the opportunities that are available. These internship coordinators emphasized that it is not enough to place students in the workplace. Instead, these workplace internships need to offer students skills that will prepare them for careers, or give them opportunities to discover (as Mary and Janet noted) that they do not want a particular career.

One of the challenges, however, with trying to help students build experience toward a career is that it is difficult to find a lot of internship opportunities in rural locations, or at least paid internship opportunities. This issue has been discussed in brief by Bay (2006). Working with nonprofits has been one strategy mentioned by Janet to mitigate this challenge, though Robert’s rural location seems to provide him with more opportunities than he can use.

Another challenge to finding a career path for students is the coordinator experience in the workplace. Coordinators with some workplace or community ties have an advantage connecting students to professional opportunities, as mentioned by Donna and Rachel. However, those who have been coordinating internships for several years mention having developed relationships that yield ample opportunities.

**Professionalism**

Internship coordinators work to make sure there is a balance between students prepared to be professional in the workplace and tasks in the internship of professional quality (Munger, 2006; Tovey 2001). To prepare students, these internship coordinators started with classroom activities during core classes. Then, at the time of the internship, coordinators will often talk to students about professional behavior in the workplace (Donna), and how to create professional job application
materials (Brad and Janet). Though internship coordinators like Rachel comment that students are still in the learning process, Mary found that preparation goes into helping students transition to become the next generation of professionals.

Ensuring that the tasks students complete in internships are of professional caliber is a duty that often falls to the internship coordinator. Munger even provided a table to show what kinds of internship opportunities would be most appropriate. In this study, this group of internship coordinators described in detail some of the impacts of internships with sub-par tasks. There are some internships that coordinators will not renew or new guidelines they implement for workplace tasks after bad experiences. Many coordinators mentioned wanting students to have a richer experience than getting coffee or typing. To ensure professional tasks in the internship, coordinators build strong relationships with the workplace mentors. Janet mentioned that she made sure that students always had a mentor to help them with the tasks, and she was not comfortable with the student being the only writer in the workplace (also see Bloch, 2011). Having students practice professionalism on professional tasks with expert guidance seems to be how internship coordinators prepare technical communication students to leave school and transition to the workplace.

**Invisible Work for Internship Coordinators**

One of the most important findings from these discussions with internship coordinators is that internships require careful planning, management of internship opportunity requests from both students and host organizations, frequent site visits or at least email check-ups, and some negotiation to help students find the best opportunity for 1) students’ skill sets and 2) students’ career interests. All of this coordination takes time and is not easily visible to other faculty or administration. Donna talked about meeting several times with students before the internship. Janet talked about meeting with students individually to discuss the internship options; the meetings with students were in addition to an internship class. Sarah commented that she meets with students outside of office hours. For me, the internship coordination process is year-round even though my students mostly intern in the summer. Many of the more professional opportunities, particularly the paid opportunities, require application in the fall before the summer internship. Often, too, I see students apply for several internships throughout the year, and some just do not find a position. For this reason, I have back-up opportunities that I manage on campus. This back-up plan becomes important for my students because the internship is required for graduation. My internship coordination requires year-round email-
ing, one-on-one counseling, and sometimes site visits.

Brad discussed that he often works overload for his department, and this may not be a unique experience among internship coordinators. This fall, I am working overload for my department as well, and the internship class is a part of this overload. Thankfully, my university recognizes my internship coordinating as part of my university service, but this is not always the case for internship coordinators. It is important, then, to spell-out the complexities and challenges of matching students with internships to raise awareness of this process among faculty and administrators. More recognition will lead to a more balanced workload for coordinators, or perhaps support from other faculty with connections to community opportunities.

I enjoy coordinating the internship, and most internship coordinators I interviewed also found this to be a fulfilling job: helping students become professionals. I am happy that many of my students’ internships have helped them find jobs once they graduate, in careers that they are finding challenging but rewarding. I hope that more internship coordinators will be able to share these findings with their faculty and administration, to help unpack and acknowledge the work they are contributing to their institutions.

**Conclusions and Limitations**

Internship coordination is an important part of helping students in technical communication transition from school to work. By discussing some of the qualitative factors that impact matching students with internships in technical communication, I hope to open conversations about internship opportunities at small rural schools, or for coordinators who are just starting to reach out to the surrounding community for workplace opportunities for students. This study only reports on eight coordinators. Future studies that discuss contextual issues at more institutions across the country may reveal other roles for internship coordinators beyond career counselor, cheerleader or, as Katz mentioned, “publicist” (2015, p. 49). Ultimately, more work discussing the qualitative challenges that internship coordinators face at their particular institutions and how they mitigate these challenges can better inform other internship coordinators when unexpected situations arise in the internships. Finally, it is my hope that this qualitative investigation clarifies some of the complexities of matching student interns with workplace opportunities.
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Tovey, Janice (2001). Building connections between industry and university: Implementing an internship program at a regional university. *Technical Communication Quarterly, 10*(2), 225-238. doi:10.1207/s15427625tcq1002_7
Appendix A: Interview Questions for Academic Internship Coordinators

1. How many hours do you require for the internship? What counts for hours (e.g. meeting with the supervisor, individual work, etc.)?
2. Do you have a class? No class?
3. Is the internship usually paid or unpaid?
4. What supports, if any, do you, the program director, provide for students in internships (for example, courses, discussions, reflective writing, etc.)?
5. What about mentoring? Working under an editor, so some mentoring.
6. Who finds the internship? How do you develop relationships with people on campus?
7. How do you determine, in Tovey (2001)’s terms, a “suitable” work experience for students? Does it change based on the individual student?
8. Do people contact you?
9. What is the student body like? Well-prepared and focused and motivated or needing more support and guidance?
10. How do you balance the outcome or product with the learning experience?
11. How does the internship fit into the technical communication curriculum as a whole? (when do students take the internship?)
12. How do you evaluate students’ performance in the internship?
13. How do these internship experiences meet the goals or outcomes of your program?
14. How have you been influenced by the literature or other programs/directors in the design of internship experiences?
15. What have been some challenges with student internships?
Author Information

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Organizational communication has long been a focus of interdisciplinary study, and Mark Ward’s *Deadly Documents: Technical Communication, Organization Discourse, and the Holocaust* helps to bridge the gap between communication studies and technical communication studies in a vivid, complex manner. Not only does Ward delve into the specifics of documents used during the Holocaust, but he has organized the book in a way that will lead the reader through the research and analysis of those documents to understand how he arrived at his conclusions and why his approach was a valid and useful way of looking at the documents.

This ten chapter manuscript offers program administrators little in terms of programmatic issues, but does inspire the inclusion of ethical concepts and studies at a programmatic level, rather than simply at the course level. By showing how complex ethical issues are woven into documentation and organization in what he labels “boundary objects” (p. 70), Ward implicitly encourages us to think about the communications we do as a part of the social constructs occurring within various environments. As he writes, “the Holocaust is not evidence for the capacity of modern bureaucratic culture to produce either progressive
or destructive ideas, but rather the capacity of progressive or destructive ideas to cohere as social realities through the communications of modern bureaucrats” (p. 17). Weaving ethical and social justice concerns into a program’s curriculum would build on this foundation to ensure students understand the ways technical communicators can be complicit in their employer’s social stances.

Ward’s book is substantial and detailed. For those teaching technical communication, Ward’s manuscript could be useful to an advanced undergraduate or a graduate class to model how an extensive complex topic can be researched and analyzed. The first chapter explores the documentation sampling, methods (including a full-page model of the methodology), and manuscript organization of the research briefly, leading the reader through the functionality of the book to give an overview of what is to come. His theoretical frameworks draw on cultural research, including Bernadette Longo’s 2000 book, Spurious Coin. From cultural foundations, Ward discusses rhetorical, genre, and discourse analysis in terms of archival documentation. The entire design of the book leads the reader through the complex journey of the research, focusing on the literature review, contextualizing the research, showing motivation for the research, analyzing the data, discussing the methodologies, and setting the stage for the connections between rhetoric, technical communication, and history.

This would be a useful text for a program to not only discuss documentation but also how history can, and often does, play a part in the interpretations of the documents and how specific documents can aid us in understanding the value and importance of social movements, injustices, and political upheaval. Chapters 2 covers contextualizing documents within historical events to understand their modern day implications while Chapter 3 delves into organizational culture and how that affects the ways people are connected to the making of events. Chapter 4 moves deeper into the personnel of the organization and what their motivations for documentation could have been. In these chapters, Ward guides us through a complicated and comprehensive historical account of the structure of the Schutzstaffel (SS) and their use of “Nazi gas vans” (p. 15). He situates the documentation in its space and place in order to help us understand from where these documents were derived and how they were used within the organization. His attention to the historical contexts of the documents allows the reader to envision the kairotic space of the discourse. This is not to say he downplays the seriousness or severity of the situation. Far from it. Instead, Ward shows his readers just how horrific and complicit the SS and the Sipo Technical
Matters Group were in creating and instigating the use of the gas vans by showing us the documentation they used to do so.

Up to this point, Ward has introduced us to the actors, environments, and incitements of the documents, laying the historical background carefully so the reader can understand the exigency surrounding the documentation. In Chapter 5, however, Ward leads us directly to the data and helps us understand why it should be analyzed. His argument here is that the documents are boundary objects, that space where the documents go beyond one organizational construct to be used and disseminated in another or others. In this case, the documentation was used by multiple organizational structures and may have been renegotiated throughout those organizations, but to what end? To answer this, Ward draws on three specific analytical tools: rhetorical community (Miller, 1994), the Cycle of Technical Documentation in Large Regulated Industries (Sauer, 2003, 2006), and visual rhetoric (Hills & Helmers, 2004; Kress & van Leeuwen, 1996, etc.). In addition, most useful in this chapter are the examples of documentation, translated into English. In Chapter 6, Ward expands the rhetorical and genre analysis to help the reader understand how the rhetorical community was developed and why the rhetorical community supersedes genre as “the cultural basis of genre” (p. 93). Later in the chapter, genre takes precedence to guide the reader in understanding how genre is a rhetorical resource. In Chapter 7, he uses theoretical grounding to complete organizational analysis through discourse analysis. In this chapter, Ward explores the linguistic variants used throughout the organizations and documentation to understand the meanings of words and how translations can affect the meanings. Throughout these three chapters, Ward introduces the reader to different research methods as well as why each method is accepted or rejected based on its connection to the document analysis.

In his final three chapters, Ward pulls together the various types of analysis to guide the reader in connecting the boundary objects throughout history and throughout the research conducted with these documents by various researchers over time. In Chapter 8, Ward directs the reader to understand the implications of where the documents have been “found,” how they have been analyzed in the past, how they have been translated, and how the historical perspectives of the discourse analysis could imply different ways of approaching the documents than those employed today. In this chapter, he specifically challenges the ways technical communicators have employed Steven Katz’s (1992) Just proposal to think beyond the document itself and
Just proposal to think beyond the document itself and place it within its historical and organizational contexts. Chapter 9 explores the tensions between historical and technical communication research and why this requires an understanding of how the research emphases on documentation shift depending on prevailing theoretical frameworks. Finally, in Chapter 10, Ward connects all previous chapters to discuss ethics and the ethical implications of these documents. In doing so, he charges that researchers must explore our own biases as they related to second, third, and beyond generational understandings of the events, their space, and their language. Ward encourages researchers to think beyond one-dimensional ethically approaches to research and explore ethics from both prescriptive and descriptive viewpoints. Only then we understand the boundaries, restrictions, and flux of the documents we study.

As stated earlier, this book is very dense, but the depth of information is useful especially in understanding interdisciplinary and mixed methods research. This type of research is almost always difficult to convey in simple terms and Ward helps the reader develop their own understanding of the implications of his research throughout by explaining it in detail. Along the way, he also guides us through difficult history, complex analysis, and even more disparate organizational constructs. Several technical communications courses, including research methods, documentation/document design, ethics, and genre studies would benefit from the incorporation of this book into the curriculum in order to help students connect theoretical foundations within genre, history, ethics, and documentation. Not only would this prove useful in helping students see the connections between what are often disparate areas of study, but the book can encourage students to think more broadly and deeply about genre and ethics to understand the impact the smallest works can have in historical contexts—which matters in a world with sound bites, tweets, and text messages.
References

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Why do different combinations of modes—visual, spatial, and so forth—engage multiple senses to facilitate learning processes? The answer may come from merging scholarship in rhetoric with scholarship in cognitive neuroscience since scholars in these fields share an interest in multimodal and multisensory learning. In *How the Brain Processes Multimodal Technical Instructions*, Dirk Remley argues that synthesizing multimodal and multisensory theories and principles from rhetoric and cognitive neuroscience is important particularly for “training/instruction and process improvement” (p. 9). He develops a discourse model that enables an analysis of multimodal and multisensory processing; this model would benefit instructors’ assessment of students’ multimodal instructional projects in technical communication courses and programs. The first four chapters of this book establish the model, the following four chapters apply the model to different case studies, and the last two chapters consider research implications and future directions.

Written to a target audience of technical communication scholars and instructors, this book incorporates simplified neurobiology terminology as part of Remley’s effort to initiate interdisciplinary research on how learners process multiple modes and stimuli. As he
observes twice in the book, rhetorical studies tend to focus more on composition and audience perception of products while neurophysiological studies focus more “on particular neuron behaviors inside the brain based on biomedical technologies” (p. 51; p. 138). In other words, “scholarship in rhetoric tend to focus on the product and its effect, not the process that affects that effect” (p. 8). Technical communication, as a field that actively attends to audience perception of instructions, would benefit from Remley’s attention to why the brain processes multimodal instructional content in different ways. The applications are clear in his assessment of hands-on training and workplace instruction, new media applications, simulators, and other interactive videos.

Borrowing from the language of neurobiology, Remley develops a neurocognitive model of multimodal rhetoric that recognizes the biological characteristics of cognitive processes. The book’s second chapter equips technical communication readers with a review of the literature of cognitive neuroscience and multimodal rhetoric. Remley extends the work begun by Roxana Moreno and Richard Mayer (2000), who proposed a cognitive theory of multimedia learning with six principles of instructional design, as well as Jordynn Jack (2012) and Jordynn Jack and L. Gregory Applebaum (2010), who intensified the connections between rhetoric and neuroscience through their research on neurorhetoric.

Remley carefully introduces readers to the neurological basis for multimodal processing. As he explains, “neural activity affects how different modal combinations may work best for certain purposes and certain audiences or individuals” (p. 21). Put another way, neurons—networks of information-processing paths in the brain (p. 22)—react to sensory stimuli in the form of modes. The activating of these neurons allows an individual to learn new content; within this framework, technical communication instructors and students could better assess how audiences might process their projects. For instance, in a later chapter, Remley applies his model to an analysis of a writing student’s slide show presentation about writing in the workplace and assesses that, among other qualities, “Showing [a specific workplace form on the slide] contributes to cognition because it provides the viewer with specific information she is likely to see in a workplace environment before actually having to engage with it” (p. 88). The model allows the instructor to assess how effectively student projects would instruct audiences.

Through this model, technical communicators can analyze the five attributes of cognitive processing of multimodal messages and multi-
sensory experiences that affect how individuals perceive information (p. 40): intermodal sensory redundancy, visual dominance, temporal synchronicity, prior experience, and attention-modal filtering. To paraphrase these five attributes in order, using more than one sense can reinforce the processing of information; the visual sense can be the most dominant mode in processing information; the timing of modes/sensory stimuli affects the processing of information; previous experience and learning style affects the processing of new information; and learners need to filter some modal information to focus on the most relevant information in a multimodal message (p. 40). Remley assesses these attributes in the student’s slide show presentation about writing in the workplace mentioned in the previous paragraph; for instance, he determines that “the display of a single form helps the viewer to visualize the entire form, while the color coding of the section labels helps with attention-modal filtering” (p. 88). The model enables a specific assessment of how students can design projects that effectively inform or instruct audiences.

In the fourth chapter, Remley considers how a medium affects the rhetorical delivery of a message, particularly the different capabilities or constraints of media that shape the modes that can be used to design and deliver a message for learning. This framing principle “recognizes the media available for designing a message to facilitate cognition for the purposes of learning” (p. 61). As he has argued (Remley, 2010), “different media facilitate different modal combinations and designs” (2015, p. 61), which can make assessment of multimodal projects more complicated. Through his model, in contrast, technical communicators can acknowledge the capabilities and constraints of new media, including slide show programs, video production software, and web editing tools that affect cognitive processing.

To demonstrate how technical communicators can apply the neurorhetorical model to different media and analyze how audiences respond to multimodal information, Remley analyzes various media in Chapters 5 through 7. For example, Remley applies his model to a historical analysis of hands-on training and workplace instruction in a World War II-era workplace. He notes that, after a serious accident, print training documents began to include more visuals. Applying the model to these post-accident documents, he observes how intermodal sensory redundancy and visual dominance, in addition to the other attributes, could facilitate mental mapping of task processes and improve cognition (pp. 80–81). This analysis could be replicated in current technical communication programs and curricula; as an example,
students in document design and related courses could assess instructional products to examine how users might process multimodal information.

Technical communication pedagogies could benefit directly from Chapters 6 and 7, which apply the neurocognitive model to new media applications that are used in education and training: slide shows, simulators, and interactive instructional videos. In lieu of neuron tracking or data-collection methods, Remley limits himself to a theoretical application of the five attributes to these media, as in the following analysis of an instructional video that repeats steps visually and describes them aurally: “This permits the multimodal neurons to act toward integrating redundant information while balancing the limitation of the number of different modes and senses being used to process the information” (p. 111). Technical communication scholars and students can directly consider the role of neurons in processing stimuli when designing and assessing instructional projects.

Instructors may be especially drawn to Chapter 8, in which Remley conducts a comparative neurorhetorical analysis of the same instructional topic being presented through different media (a webpage, a video, and a slide show) to demonstrate “how a medium affects modal capacities in design decisions and consequently, cognition” (p. 127). For instance, in his analysis of an instructional webpage, he writes: “Because visuals appear with each step and the figure is related directly to the step, modal filtering is facilitated too. That is, there is not any extra, irrelevant information that one must filter from the information” (p. 114). This comparative approach reinforces how neural process studies can help rhetorical scholars understand why some multimodal products facilitate learning better than others.

Technical communication administrators and instructors who are not familiar with neurobiological methods could read How the Brain Processes Multimodal Technical Instructions in order to appreciate the multisensory process through which individuals learn tasks. The neurocognitive model and its attributes (intermodal sensory redundancy, visual dominance, temporal synchronicity, prior experience, and attention-modal filtering) can make salient why different modal combinations affect individual learning. Instructors could incorporate this model into their assessment practices so that they can better evaluate how students effectively arrange modes to inform audiences. Instructors should share this model with students in order to clarify the need for finding the appropriate combinations that facilitate learning.

From a programmatic perspective, technical communicators
could apply the model to develop curricular and assessment material for multimodal projects. Remley partly considers the implications for education in his final chapters, explicitly in web-based education and service-learning/internships, in addition to the implications for workplace training. He encourages his audience to contribute to the interdisciplinary study of neurocognitive processing of multimodal instructional material. This collective contribution can begin by always considering how different combinations of modes engage multiple senses to facilitate users’ cognitive processing of multimodal technical information.

References

Author Information

Janine Butler is Assistant Professor at the National Technical Institute for the Deaf, a college of Rochester Institute of Technology, where she teaches writing courses. Her scholarly interests center on accessibility, multimodality, and embodiment. Her writing has appeared in *Kairos, Composition Studies, Rhetoric Review*, and *Composition Forum.*
As the field of technical communication continues to discuss the ethical implications of the work technical communicators perform, Russell Willerton joins the conversation with his book, *Plain Language and Ethical Action: A Dialogic Approach to Technical Communication in the Twenty-First Century*. Willerton offers technical communicators a conversation at the intersection of plain language practices and ethics. The text begins with a chapter defining plain language to help orient the novice reader. Willerton moves into a discussion on ethics through a rhetorical lens, and then connects this broad view of ethics to a discourse specific look at ethics. The heart of the text is a series of industry based examples of plain language use that can be looked at as ethical action. The text discusses plain language as an ethical solution in various technical communication contexts including political, legal, medical, and economical. He introduces the reader to what he defines as the BUROC model, which is a Bureaucratic, Unfamiliar, Rights Oriented, Critical situation. BURAC situations “involve individual rights” and provide “opportunities to assist others” and create a need to consider the use of plain language strategies as ethical action (pp. 15). However, Willerton’s look at plain language use is dependent on the argument that technical communication practitioners see themselves
as advocates for the user. Although Willerton offers little practical knowledge of plain language, his text offers technical communication programs an effective conversation on the responsibility of practitioners to see the impact of their work on civil rights specifically and on basic human rights more generally.

Willerton begins his discussion with the claim that plain language is an ethical consideration when the information being conveyed is necessary for the user's full participation in political and social systems. His rehearsal of technical communication's relationship with ethics and with UX design principles helps to establish plain language within the field of technical communication. The first chapters of the book are dedicated to establishing technical communication's view of ethical practices. He turns specifically to the work of Immanuel Kant in order to illustrate why practitioners should be consciously engaged with the experience of the user. Willerton compellingly uses Kant to argue “the rights of one person define the obligations of another” (p. 23). For Willerton, Kant’s approach obligates technical communicators to see the connection between their work and the individual rights of the user.

The plain language movement specifically intersects with the rights of individuals as many practitioners see the purpose of their work based on the fundamental belief that “people have a right to clear information” (p.23).

Willerton turns to plain language practitioners to expand the reader’s understanding of plain language application as an ethical action. Willerton interviews 24 practitioners who use plain language around the globe. These practitioners hail from diverse situations including non-profit organizations, commercial based companies, and law communities. Although their practices differ, these technical communicators seem to agree they use plain language in their practice to create a better document for the user. Benefitting Willerton’s discussion, most also agree “plain language is a civil right” (p. 63). It is valuable for technical communication programs to see plain language as an ethical consideration. Although, as Willerton explains, plain language is not a universally effective technical communication strategy, the choice to use plain language is based on principles and purpose of technical communication such as user advocacy and user experience. Willerton and the experts he interviews agree that plain language can offer access to vital information to audiences who may not be able to access the same information often found unethically buried in a pile of discourse specific jargon.

In order to see plain language through an ethical lens, Willerton
gives a variety of situations where the use of plain language could be viewed as an ethical action. Seven chapters of the text are dedicated to illustrating the use of plain language in specific situations where the application of plain language is linked to the civil rights of the user. For example, as he discusses the work done by Civic Design to produce instructional materials for county election officials, he observes “the right to vote is one of the great privileges of citizenship,” and voters right to “vote as they choose” is intricately connected to the work of these technical communicators (p. 98). Willerton also examines the work of Common Terms, a Swedish based volunteer group who translate the terms and condition statements used by particular software and service companies into plain language. Consumers are required to agree to these terms and conditions before being granted access to software and services. However, the convoluted language of the documents make the information almost inaccessible to many consumers. Willerton and Common Terms recognize the consumers have the right to understand these legally binding documents and see the use of plain language by Common Terms volunteers as an ethical action.

Throughout these examples, Willerton effectively constructs a consistent and predictable flow of information for his reader. Whether he is discussing the use of plain language by Healthwise, Inc. to construct ease of access to healthcare information or Kleimann Communication Group’s work with mortgage documents, Willerton first establishes the ethos of his source, defines the purpose and practice of the work conducted, discusses the use of plain language, and then finally connects that use to ethical action that involves the user’s right to accurate information. The repeated pattern of information delivery throughout the text helps the reader establish a consistent understanding of plain language’s connection to ethical action amidst the difference of context. Within the multiple contexts Willerton explores, individual readers should be able to find a relatable context. The relatability and diversity of the examples is one of the strengths of the text.

To the benefit of those who wish to use Willerton’s text as part of a technical communication program, he constructs questions at the end of each chapter to enhance the reader’s engagement with the ideas addressed. These questions create learning environments through personal reflection and individualized application. For example, at the end of Chapter 1, readers are asked to review and compare two different definitions for plain language. The question helps readers to establish for themselves a clear understanding of plain language before moving into the complicated discussion of plain language as ethical action.
Although these questions can be used by individual readers, they lend themselves to the establishment of rich classroom discussions.

The drawback to using Willerton's book in a technical communication program is the lack of practical information. It is not a book that should be used as a solitary text. It discusses the ethical application in general terms but does not offer specific guidelines needed to apply plain language principles. The book mentions translation of medical terms, legal terms and convoluted language but gives no examples of the process of translation. Usability studies are mentioned as, but the methodologies of such studies are not exposed. A reader is left to investigate what plain language looks like in the practice of technical communication. The theoretical considerations are well explored, but there Willerton offers no specific instruction on the skills necessary to apply plain language strategies. Technical communication programs could use the text to facilitate ethical explorations into the potential use of language to oppress and exclude populations from interacting in political and social settings, and how plain language could specifically be used as ethical action, but would need further instruction on plain language specific content development, stylistic choice and document design based on a specific user experience.

Willerton's text may not be an exhaustive look at plain language nor the ethical implications of technical communication, but it does offer a compelling look at the intersection of the two issues. His use of diverse practitioner perspectives and diverse contextual examples to illustrate the use of plain language as a potentially ethical action offers a compelling discussion for the novice and the expert technical communicator. Although the book offers little practical knowledge for applying plain language, it does offer a dialog on the impact of the application. In a scientific writing class, this text could be used to illustrate the potential consequences of discourse specific language. In a social justice course the text offers further evidenced of the ethical implications of technical communication and an individual's right to information that directly affects them. Willerton's text could also benefit courses in user experience design to support rationale for considering the user throughout the design process. As technical communication programs continue to turn the conversation toward user advocacy and ethical consideration, *Plain Language and Ethical Action, A Dialogic Approach to Technical Content in the Twenty-First Century* is a helpful resource to further that conversation.
Author Information

Sherena Huntsman is a doctoral candidate at Utah State University in technical communication and rhetoric. Her research addresses the intersection of power dynamics and ethical frameworks within rhetorical theory, disability studies, and professional and technical communication principles. She is particularly interested in how technical communication practices and technologies can act as avenues for inclusion via user experience, universal design, and accessible design strategies.