

# Survey on Perspectives of Pursuing a PhD in Communication Sciences and Disorders

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**T**here is a critical shortage of PhD students and faculty in the field of communication sciences and disorders (CSD). In 2002, 6%–7% of all doctoral faculty positions in the field were vacant (American Speech-Language-Hearing

Association [ASHA], 2002). In 2011, 45 of 180 department searches for faculty positions went unfilled (Higher Education Data System, 2011). The original report by the Joint Ad Hoc Committee on PhD Shortages in CSD described that when faculty positions are empty, the ability of the field to create knowledge is reduced in “a downward spiral” because there is

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**ABSTRACT: Purpose:** The communication sciences and disorders (CSD) field has a critical shortage of PhD students and faculty. This study examined master's in speech-language pathology and doctorate of audiology students' and faculty's perspectives regarding reasons students do or do not pursue a PhD as well as students' perceptions of a faculty career and lifestyle. Additionally, students' responses were compared to SLPs' responses from Madison, Guy, and Koch (2004).

**Method:** Two online surveys were sent to 279 students and faculty, of which 73 replied.

**Results:** Students almost evenly responded that yes they planned or *no* they did not plan to obtain a PhD. Aspects of teaching and mentoring motivated students to obtain a PhD, but the requirement of developing research projects strongly deterred them

from obtaining one. Students had misperceptions about the faculty regarding the time they spent teaching, salaries, career reward, and personal–professional balance. Both students and SLPs listed family obligations as a top reason not to pursue a PhD. Additionally, students listed length and cost of the doctoral program as deterrents to obtaining a PhD. All groups considered a desire for knowledge, but not an interest in research, in their top reasons to pursue a PhD.

**Conclusion:** Research experience could help students recognize their research potential, demystify the research process, and alter misperceptions of faculty.

**KEY WORDS:** doctoral shortage, speech language pathology, audiology, PhD, doctoral degree, survey

no one to teach future clinicians or to create the evidence base for assessment and treatment in our field (ASHA, 2002). Adding to the magnitude of the problem, the committee found that of the current full-time faculty, the mean age was 49 years. The majority of faculty fell between 38–62 years of age, with a sharp drop off around 65 years, which the committee suggested meant that many faculty are approaching the age of retirement (Oller, Scott, & Goldstein, 2002). If this trend continues, CSD as a field may face significant challenges in generating the scientific foundation required to sustain the profession.

The committee concluded that the field should focus efforts on three actions to increase the number of individuals pursuing a PhD (ASHA, 2002): (a) increase the intensity of recruitment and retention across all involved associations and academic programs, (b) closely track these efforts, and (c) redesign the academic culture at the undergraduate level and beyond. The burden of the recommendations from the committee is placed on academic programs and ASHA. In other words, PhD-granting CSD programs are expected to resolve the problem from within. Students are not pursuing a PhD, and the prevailing question is *Why?*

This study is the first attempt to understand why master's in speech-language pathology (master's) and doctorate of audiology (AuD) students do or do not consider pursuing a PhD in CSD. The approach proposed by the Joint Ad Hoc Committee on the PhD Shortages in CSD suggests "re-engineering departmental cultures" to appeal to students (ASHA, 2002, p. 10). Before the current study, however, there has been no objective attempt to understand why students are not pursuing doctoral degrees. In order to adequately understand precisely what needs to be re-engineered about the academic culture, an empirical account of student perspectives is needed. Although many individuals in this field have worthy opinions about how to address the PhD shortage, we cannot adequately set ourselves up to resolve a problem until we truly comprehend it. This study was conducted to contrast faculty and student perspectives in order to appreciate where there may be misperceptions as well as to assess reasons why students are deterred from pursuing a PhD. Furthermore, we compared students to clinicians to evaluate whether students may have different concerns than clinicians.

As a follow-up to the original report, the same ASHA committee reconvened in 2008 to review new data, assess previous strategies, and identify additional approaches to address the PhD shortage (ASHA, 2008). The committee concluded at this time that the number of degrees generated was sustained relative to the last 20 years, but the committee expressed concern

that out of 72 PhDs granted in 2006, only 45.8% of graduates pursued a CSD-accredited program academic position, and 16.7% received a postdoctoral position. In 2011, only 50.0% of doctoral admissions were fulfilled, and it is estimated that only 35.4% of graduates pursued a CSD-accredited faculty position and 20.8% received a postdoctoral position (HES, 2011). Only half of the current doctoral programs are reaching admissions capacity, and even if students choose to enter a doctoral program, not everyone is choosing to pursue a faculty position. Clearly, the PhD shortage problem has not been solved.

CSD is not the only field experiencing a decline in individuals deciding to pursue a PhD. Fields such as dentistry, nursing, and some areas of business (e.g., accounting) are also facing potential faculty shortages (Allan & Aldebron, 2008; Basil & Basil, 2006; Berlin & Sechrist, 2002; Carr, Ennis, & Baus, 2010; DeYoung, Bliss, & Tracy, 2002; Hinshaw, 2001; John et al., 2011; Trapnell, Mero, Williams, & Krull, 2009). Similar to CSD, these fields are concerned about aging faculty reaching retirement without having an adequate number of students in the pipeline to replace them (Allan & Aldebron, 2008; Berlin & Sechrist, 2002; Carr et al., 2010; Hinshaw, 2001; John et al., 2011; Trapnell et al., 2009). These fields also raise concerns about students' interests in obtaining doctoral degrees. Factors cited as affecting PhD recruitment include the appeal of being a practitioner, the time it takes to get a degree, financial concerns, poor perceptions of faculty careers (Berlin & Sechrist, 2002; Carr et al., 2010; DeYoung et al., 2002; John et al., 2011; Trapnell et al., 2009), and, in the case of nursing, not enough students selecting the nursing profession (Hinshaw, 2001). These fields are different from CSD in numerous ways, but many of these concerns have been raised about PhD recruitment in CSD as well.

There is an extremely limited literature base—beyond the Joint Ad Hoc Committee reports—that has explored reasons for the PhD shortage in CSD and how to address it. Two studies have attempted to gain insight into the reasons why speech-language pathologists (SLPs) who currently work in the field do or do not consider getting a doctoral degree. The first one, by Madison, Guy, and Koch (2004), compared survey responses from SLPs to responses from faculty in order to determine reasons why SLPs do or do not pursue a PhD. Also, if a PhD was pursued but not completed, Madison et al. explored the reasons for not completing the degree. The results provide insight into SLPs' considerations of whether to pursue a PhD.

Reasons considered for pursuing a PhD were similar across SLPs and faculty and included a

desire for knowledge, research interest, and interest in teaching (Madison et al., 2004). However, reasons for not pursuing a PhD were not the same. SLPs listed family obligations, lack of research interest, and satisfaction with current positions as the top three reasons for not pursuing a PhD, whereas faculty posited that students do not pursue a PhD due to a lack of research interest, length of doctoral program, and lack of financial support. Again, a dissimilarity between SLPs and faculty occurred when considering to drop out of a PhD program. SLPs selected family considerations, loss of advisor (e.g., the advisor moves to a new university), and length of program as reasons for not completing a PhD, whereas faculty posited that reasons for not completing the degree were mainly related to a lack of research interest. In sum, the results of the Madison et al. (2004) survey suggest that family obligations are the main reason for SLPs not pursuing a PhD, followed by a lack of research interest. One possible method for addressing these issues is to involve more undergraduate, master's, and AuD students in the research process. Such a strategy may increase research interests early on in academics so that students consider a PhD before family obligations are likely to be of concern (Bernthal, 2001; Ingham, 2003; Mueller & Lisko, 2003).

Despite the reasons given for not pursuing a doctoral degree, PhDs were seriously being considered by 42% of the SLPs surveyed in Madison et al. (2004). SLPs who worked in higher education were more likely to pursue a PhD (7% of the total respondents) compared to SLPs who worked in hospital settings (3%), private practice (2%), or public schools (1%) (Madison et al., 2004). This finding lends additional weight to the idea that individuals who are currently in academic settings are more likely to pursue higher education, and it may be most effective to target current students to increase interest and commitment to pursuing a doctoral degree.

The second study that explicitly examined reasons why SLPs do and do not consider obtaining a PhD was completed by Myotte, Hutchins, Cannizzaro, and Belin (2011) as a follow-up to the study by Madison et al. (2004). Myotte et al. surveyed SLPs but improved on some of the methodological limitations in the Madison et al. study by using a Likert scale for all of their survey questions. Myotte et al. employed factor analysis, which yielded four primary factors: concerns about perceived difficulty of the degree, lack of interest in doctoral studies, practical financial issues, and practical family issues.

At the time of the Myotte et al. (2011) survey, there was a general lack of interest in pursuing a PhD, but 31% of the respondents said that they had considered it in the past. The authors further divided

the group of SLPs into those who had considered pursuing a PhD and those who had not. Both groups expressed that their top two reasons for not pursuing a PhD were that they were satisfied with their current master's degree and with their professional goals. Neither group considered reasons related to the perceived difficulty of a PhD as barriers. Where the two groups differed was on additional barriers for not pursuing a PhD, which included a lack of interest in a PhD for those who had never considered pursuing a PhD but financial issues for those who had considered pursuing a PhD. To summarize these two studies, SLPs were not seeking PhDs because of family obligations, a lack of research interest, current position satisfaction, and, for some, financial barriers. We do not know if these concerns are the same or different for students who have not yet obtained a clinical degree (master's or AuD).

The two prior studies focused on career SLPs' perspectives and considerations in obtaining a higher degree. The current investigation was designed (a) to survey faculty members about aspects of their careers and lifestyles and then use these responses to share the results with students in an attempt to better inform them about pursuing a PhD and (b) to survey master's and AuD students to discern student's perceptions about pursuing a PhD and to contrast these perceptions to the faculty's experiences.

We asked the following research questions:

- How many students in this sample are considering pursuing a PhD, and what concerns or motivations underlie the decision?
- Do students' perceptions of faculty's career and lifestyle match what is expressed by faculty?
- How do responses from students and faculty compare to those of the SLPs and faculty in the study by Madison et al. (2004)?

From previous commentaries and speculation in the literature (Bernthal, 2001; Busacco, 1999; Gallagher, 2006), we expected that students' perceptions would vary based on their research involvement and experiences. The length of doctoral programs and the value of clinical experience were anticipated to be deterrents to students. We also anticipated that students would perceive the commitment of working in academia as not permitting other life aspirations (e.g., family, hobbies). By examining students' perceptions and concerns, a better understanding of why students who are presently in the academic setting are deciding whether or not to pursue a PhD will aid the CSD field in recruiting individuals at an early point in professional development when they may be more amenable to completing a PhD and creating an academic culture that decreases attrition among PhD students.

## METHOD

Two separate surveys were prepared: one survey directed to faculty and the second to master's and AuD students. The intent of the faculty survey was to query faculty about aspects of their career and lifestyle. The master's/AuD student survey was intended to discern students' concerns about pursuing a PhD and to contrast students' perceptions to those of faculty's experiences.

### Participants

Faculty and master's and AuD graduate students from three universities were surveyed. Multiple universities were selected to reduce possible program-specific differences and to add to generalizability based on geographic location. The faculty group consisted of PhD-level faculty members who teach or conduct research at a university: 14 from the University of Wisconsin—Madison (UW—Madison), 16 from the University of Arizona (UA), and 15 from the University of Nebraska—Lincoln (UNL) were invited to participate in the survey. Graduate students were included in the survey because by choosing to pursue a professional-level degree, they demonstrate a commitment to the field of CSD. A total of 234 students were invited to participate in the survey: 91 from UW—Madison, 65 from UA, and 78 from UNL. The survey was sent to 279 individuals (45 faculty and 234 students); 73 (18 faculty and 55 students) completed the survey, for a 26% overall response rate (40% faculty and 24% students).

Table 1 provides demographic information for the participants. Seven faculty responded from UA and UW—Madison each, and four faculty responded from UNL. Seven faculty were full professors, five were associate professors, and six were assistant professors. A little more than half of the faculty (10; 55.6%) had received their PhD between 1991 and 2008, and the remaining faculty (8; 44.4%) had received their PhD between 1971 and 1990. Twelve students from UA, 18 from UNL, and 24 from UW—Madison responded. Student responses indicated that 26 were in their first year of graduate school, 22 were in their second year, two in their third, and three in their fourth.

### Procedure

The surveys were created via online survey software available at [surveymonkey.com](http://surveymonkey.com). All e-mails to the students were distributed through each department's administrative assistants until consent for participation was confirmed. Faculty e-mail addresses were retrieved from department websites. Participants

**Table 1.** Participant characteristics for faculty and students who completed the survey.

Characteristic	Students (%)	Faculty (%)
University affiliation		
UA	21.8	38.9
UNL	32.7	22.2
UW—Madison	43.6	38.9
Unknown	1.8	0.0
Faculty position		
Assistant professor		33.3
Associate professor		27.8
Full professor		38.9
Faculty PhD graduation year		
Between 1946–1970		0.0
Between 1971–1980		22.2
Between 1981–1990		22.2
Between 1991–2000		27.8
Between 2001–2008		27.8
Year in graduate school		
First	47.3	
Second	40.0	
Third	3.6	
Fourth	5.4	
Fifth	0.0	
Sixth	0.0	
Unknown	3.6	
Area of interest		
Speech	16.4	44.4
Language	60.0	33.3
Hearing	18.2	22.2
Other (i.e., all, literacy, AAC)	5.5	0.0

*Note.* UA = University of Arizona, UNL = University of Nebraska—Lincoln, UW—Madison = University of Wisconsin—Madison, AAC = augmentative and alternative communication.

received an e-mail delivered via the message manager on [surveymonkey.com](http://surveymonkey.com) from the student researcher's school-affiliated e-mail address (faculty) or from the department's administrative assistant (students). This first e-mail contained details regarding the necessary information for consent, including the purpose of the research, choice to participate, assurance of anonymity, directions to complete the survey, approximate time expected to complete the survey, and a link to the survey.

Individuals who consented to participate in the study were sent a second e-mail detailing how to take the survey and a link to access the survey questions. Individuals who selected not to take part in the survey after reading the consent were sent an e-mail thanking them for their time. Once a participant completed the survey, an e-mail was sent confirming receipt of the survey and thanking them for their time. Participants who had not completed a survey

after 1½ months from the original e-mail were sent a reminder e-mail soliciting them one more time to complete the survey.

Anonymity was maintained through use of the e-mail manager on surveymonkey.com. The consent to participate in the study was completed and tracked separately from the survey answers. E-mails sent to participants (the reminder e-mail and thank you e-mail) were set up preemptively in the e-mail manager so that the investigators were not tracking respondents' surveys. Also, anonymity was assured because all surveys were stored in the database on surveymonkey.com without identifying information, and all were assigned a number in the order that the completed survey was received. All database information was downloaded over a secure network and was protected via a password known only to the investigators. The project was approved by each institution's Institutional Review Board.

Both the faculty survey and the student survey contained 26 questions (see the Appendix). Each survey was expected to take ~5–10 min. Questions varied in format. The majority of the questions were one-answer multiple-choice format; some questions included "other" comment boxes. All questions included an optional comment box in which the participant could write additional information related to each question. A few questions allowed typing a response in order to be adequately inclusive of all possible answer choices. Lastly, questions 24 and 25 asked participants to rank order a list of responses. All questions could be optionally skipped (with the exception of the consent questions).

The student investigator (first author) created each question after conversations with peers and after perusing the ASHA discussion forums concerning topics related to obtaining a PhD in the PhD education forum. The list of questions was carefully selected to fit into seven different areas: general information, clinical practice and being a PhD student, teaching perspectives, research perspectives, general career questions, personal–professional balance, and to pursue or not to pursue.

General information questions were included in the survey in order to obtain basic demographics about the survey participants such as university affiliation, rank or year in graduate program (students), when a PhD degree was received (faculty), or if a PhD degree was being considered (students). The clinical practice and being a PhD student section contained questions focusing on considerations related to clinical experience before pursuing a PhD, time needed to obtain a PhD, and funding opportunities. The teaching perspectives section questions pertained to area of interest, teaching enjoyment, and time

allotment. Similarly, the research perspectives section questions pertained to research enjoyment and time allotted. The questions in the general career section asked about salary, satisfaction, challenges, and time commitments. The personal–professional balance section examined the balance between personal and professional lives with a rating scale and questions about marriage, children, and outside activities. Lastly, to pursue or not to pursue contained questions adapted from Madison et al.'s (2004) survey. Questions were similar in content to the original ones but were reformulated for the two different audiences.

## RESULTS

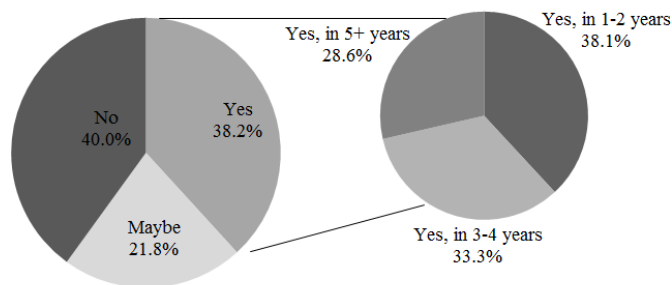
Student and faculty responses were compared for each thematic area. Comparisons between the AuD ( $n = 10$ ) and master's ( $n = 45$ ) students were also made; these findings are only noted where responses from one student group differed from the overall student responses. Additionally, students who responded *no* to pursuing a PhD (No PhD;  $n = 22$ ) were compared to those who responded *yes* (Yes PhD;  $n = 21$ ; regardless of timeline), and to those who responded *maybe* (Maybe PhD;  $n = 12$ ). Again, these findings are only noted when they are different from the overall group findings.

### General Information

Students were asked whether or not they were considering a PhD. Students were almost evenly split between decidedly no (40.0%) and decidedly yes (38.2%), with the other 21.8% responding maybe. Of those who responded that they were interested in pursuing a PhD, 38.1% responded that they planned to pursue one in 1–2 years, 33.3% responded in 3–4 years, and 28.6% responded in  $\geq 5$  years (see Figure 1). Notably, 70.0% of the AuD students compared to 33.3% of the master's students said that they would not pursue a PhD, and more of the No PhD (40%) or Maybe PhD (80%) respondents were first-year graduate students.

Faculty and students were asked parallel questions about whether participants had heard about the PhD shortage in CSD and why they felt there was a shortage. For the majority of students (89.1%), the survey was not the first time they had heard of the PhD shortage. When asked why they felt there was a PhD shortage in CSD, students answered that the reason was largely because of the appeal of clinical work (25; 45.5%). Interestingly, more individuals in the Yes PhD group thought that all of the listed reasons contributed to the shortage, whereas the other

**Figure 1.** Distribution of students' interest in a PhD and when they might pursue it.



two groups (No PhD, Maybe PhD) strongly believed that the shortage was due to the appeal of clinical work. Faculty agreed (6; 33.3%), but also felt that there were *other* reasons (6; 33.3%) such as a lack of knowledge about the PhD, lack of funding for doctoral training, length of the PhD, having a terminal master's in the field, and not emphasizing the science in clinical approaches.

### Clinical Practice and Being a PhD Student

This section of questions attempted to assess students' perceptions of what was necessary to get a PhD, and then this information was compared to faculty responses to similar questions. Most students (81.8%), across all subgroups, felt that having a professor who had practiced clinically was very important, and 72.2% of faculty had practiced clinically. Most faculty (27.8%) had practiced clinically for 2 years before pursuing their PhD, which was slightly less than the amount (at least 3 years) that students (30.9%) thought would be adequate.

The majority of faculty found their clinical experience relevant for both teaching and research (94.1%), whereas 5.9% found it relevant for teaching purposes only. It took faculty an average of 4 years to complete their doctoral degree, and students (45.5%) agreed that the expected time it takes to get your PhD is 4 years. Almost all of the professors (88.9%) received funding for the entire length of their PhD program (one faculty respondent received funding for the first part, and one faculty respondent did not receive any funding). Students reported that 81.5% of them could not pursue a doctoral degree without funding.

### Teaching Perspectives

Faculty and student responses were compared relative to motivators and deterrents of teaching.

Approximately 44.4% of faculty respondents taught in the area of speech, 33.3% in language, and 22.2% in hearing. Sixty percent of students were interested in language, 16.4% in speech, 18.2% in hearing, and 5.5% in other (e.g., augmentative and alternative communication, swallowing).

Faculty responded that they most enjoyed mentoring students (61.1%). Students also thought that mentoring students (60.0%) would be the most inspiring aspect of teaching, followed by lecturing (18.2%). Students either responded that nothing deterred them from teaching (38.9%) or listed something not listed as a deterrent (37.0%; primarily individuals in the No PhD group), such as a lack of sufficient knowledge for teaching, more interest in clinic, or lack of interest in research. The majority of faculty (55.6%) responded that they spent 25% of their time teaching; another 27.8% reported that they spent 40% of their time teaching. The majority of students (52.7%) estimated that faculty spent 25% of their time teaching. The remaining students were divided, with 18.2% estimating that faculty spent 10% of their time teaching, 14.5% estimating it to be 40%, 10.9% estimating 50%, and 3.6% estimating  $\geq 60\%$  of faculty's time to be spent teaching.

### Research Perspectives

Similar to the section on teaching perspectives, we compared student and faculty responses with regard to their perspectives on research. The majority of faculty (66.7%) enjoyed all aspects of their research position—mentoring students; pursuing interests; developing projects; managing a lab; and sharing interests through publications, talks, and so on. The two aspects that students thought they would be inspired by the most were pursuing interests (36.4%) and mentoring students (20.0%). Students were most deterred from pursuing a PhD by having to develop research projects (49.1%). Students (61.8%) estimated that faculty spent  $\geq 50\%$  of their time doing research, and this corresponded with 72.2% of faculty responding that  $\geq 50\%$  of their time was dedicated to research.

When asked what sparked their research interest, 16.7% of faculty reported that research as an undergraduate or as a master's student sparked their research interest, 11.1% were inspired by their clinical experiences, and 22.2% specified another inspiration. Many faculty (33.3%), however, said that it was a respected professor or mentor who sparked their research interest. At the time of responding to the survey, 20.4% of students had been involved (for at least one semester) in research as an undergraduate, 63.0% were currently involved in research

as a master's or AuD student, 5.6% had never had the opportunity to become involved, 1.9% were not interested, and 9.3% responded other. Students who were involved in a research opportunity viewed their experience positively (83.6%). All students in the Yes PhD group had some, if not multiple, research experiences, and there were none who responded that they had not had an opportunity to participate in research. Many students in the Maybe PhD group were currently involved in research experiences, with only one student indicating no opportunity and one noting involvement during the undergraduate program only. Finally, in the No PhD group, the results were much more varied: five students were involved in research during their undergraduate program, 11 were currently involved, two had never had a research opportunity, one was not interested, and three indicated other.

### General Career Questions

The faculty who responded to the question regarding annual salary fell into three ranges: \$60–70,000 (31.3%), \$80–90,000 (25.0%), and \$100,000+ (43.8%). A small percentage of students (9.1%) estimated faculty salaries to be in the \$40–50,000 range, 61.8% estimated \$60–70,000, 23.6% estimated \$80–90,000, and 5.5% estimated \$100,000+. Almost all (83.3%) of the faculty felt that their career was very rewarding, and 16.7% felt their career was mostly rewarding. More than half of the students (65.5%) thought that being a professor would be a rewarding career, and this sentiment was echoed across all student subgroups.

Faculty felt that time demands (41.2%) followed by balancing personal and professional demands (29.4%) were the most challenging aspects about their career choice. Students thought that balancing personal and professional demands (41.8%) would be the most challenging aspect of being a professor, followed by time demands (32.7%) and research demands (18.2%). However, the No PhD group was more concerned about time demands, followed by balancing personal and professional demands. When asked how many weekends they worked per month, 41.2% of faculty responded that they work two weekends per month, 35.3% work four weekends, and 23.5% work three. When students were asked if faculty work weekends, students responded that faculty work at least one weekend per month (45.5%), at least two weekends (25.5%), every weekend (14.5%), and no weekends (14.5%).

### Personal–Professional Balance

All of the faculty felt that they achieved some level of personal–professional balance (11.1% balanced,

44.4% most of the time, 44.4% some of the time, and 0% rarely or never). When students were asked to assume the role of professor, 7.7% thought that they could find balance in their life, 36.5% would find balance most of the time, 36.5% would sometimes find balance, 15.4% would rarely find balance, and 3.8% felt they would spend too much time working. The Maybe PhD group saw itself as the least capable of achieving balance as a professor. Students felt that their greatest limitation to having a PhD was that it is too time consuming (35.2%). More specifically, the Yes PhD and Maybe PhD groups responded that the greatest limitation to having a PhD was that it is too time consuming, but the two highest responses in the No PhD group were “no interest” and “time consuming.”

Faculty were asked questions about their life outside of academia. Many faculty who responded (64.7%) were currently in a committed relationship, 23.5% were previously but not presently in a committed relationship, and 11.8% had never been in one. Most students (79.6%) estimated that  $\geq 75\%$  of the faculty were in a committed relationship. Students were also asked to estimate what percentage of faculty had children. A little more than half of the students (55.6%) predicted that 50% of the faculty had children, and an additional 38.9% of students predicted that  $\geq 75\%$  of the faculty had children. In this sample, 64.7% of the faculty said that they have children.

Faculty participated in some activity outside of their career, including regular exercise (73.3%), book club (26.7%), dinner club (13.3%), music (26.7%), family life (80.0%), or something else. Faculty characterized their attitude as, “I would wake up every day and say, I am generally excited to go to work most days” (82.4%) or “I wake up some days ready for work and other days I have no desire to go to work” (17.6%).

### To Pursue or Not to Pursue

Faculty and students ranked 14 reasons (1 = *most important*, 2 = *next important*, etc.) for not pursuing a PhD. Ranked response averages, where a lower average indicates a higher ranking, were used as a base of comparison. The current study's students' and faculty's top three reasons (not including other) were compared to each other and to the reasons from Madison et al.'s (2004) survey of faculty and SLPs. Students and faculty then ranked 13 reasons for pursuing a PhD following the same procedures used for reasons not to pursue. The top three reasons of the current study's students and faculty (not including other) were, again, compared to one another and to reasons from Madison et al. (2004).

**Top three reasons not to pursue a PhD.** The top three reasons (of 14) that the current study's students said they did not wish to pursue a PhD were length of doctoral program ( $M = 2.63$ ,  $SD = 2.06$ ), cost of doctoral program ( $M = 3.55$ ,  $SD = 2.71$ ), and family obligations ( $M = 3.56$ ,  $SD = 4.41$ ) (see Table 2). The current study's faculty's top three reasons why students do not pursue a PhD (other than other) were lack of financial support for doctoral students ( $M = 3.71$ ,  $SD = 4.03$ ), lack of research interest ( $M = 4.07$ ,  $SD = 4.08$ ), and family obligations ( $M = 4.46$ ,  $SD = 2.37$ ) (see Table 3). These reasons matched two out

of three reasons given by the Madison et al. (2004) faculty: lack of research interest and lack of financial support.

Comparing the current study's students' reasons to the top three reasons given by both groups of faculty, only length of doctoral program was the same reason given by the Madison et al. (2004) faculty, and family obligations matched the current study's faculty's reasons why students do not pursue a PhD. For both students and SLPs, family obligations were a primary consideration, but they did not match on the other two top three rankings.

**Table 2.** Reasons provided by students for why students do not pursue a PhD, ranked according to mean response (lower mean is indicative of higher ranking; 1 = most important).

<i>Reason</i>	<i>Number of responses</i>	<i>M</i>	<i>SD</i>
Length of doctoral program	52	2.63	2.06
Cost of doctoral program	49	3.55	2.71
<b>Family obligations</b>	48	3.56	4.41
Long hours	47	4.00	2.72
Lack of financial support for doctoral students	49	4.22	3.25
Spousal/Significant other influence	43	4.30	4.60
Satisfaction with current salary	46	4.43	4.81
Satisfaction with current position	47	4.43	4.58
Lack of interest in working in higher education	42	4.50	4.18
Lack of research interest	48	4.52	4.47
Criteria for being accepted	44	4.52	4.75
Distance/location of program	45	4.58	5.03
Satisfaction with current degree	44	4.77	4.15
Lack of interest in teaching	44	4.80	4.94

*Note.* Reasons that overlapped with faculty are bolded.

**Table 3.** Reasons provided by faculty for why students do not pursue a PhD, ranked according to mean response (lower mean is indicative of higher ranking; 1 = most important).

<i>Reason</i>	<i>Number of responses</i>	<i>M</i>	<i>SD</i>
Lack of financial support for doctoral students	14	3.71	4.03
Lack of research interest	15	4.07	4.08
<b>Family obligations</b>	13	4.46	2.37
Cost of doctoral program	14	4.57	3.88
Distance/location of program	14	4.79	4.41
Long hours	12	4.83	3.16
Length of doctoral program	15	5.67	3.85
Lack of interest in working in higher education	12	6.17	3.27
Satisfaction with current position	13	6.38	3.57
Satisfaction with current salary	12	6.42	4.52
Satisfaction with current degree	12	6.67	3.87
Spousal/Significant other influence	14	6.71	3.77
Lack of interest in teaching	12	8.08	3.73
Criteria for being accepted	11	8.18	5.58

*Note.* Reasons that overlapped with students are bolded.



**Top three reasons to pursue a PhD.** The current study's students' top three reasons why students choose to pursue a PhD were desire for knowledge ( $M = 2.86, SD = 2.07$ ), to make contributions to the discipline ( $M = 3.33, SD = 2.56$ ), and an interest in higher education ( $M = 3.41, SD = 2.55$ ) (see Table 4). The current study's faculty's top three reasons why students choose to pursue a PhD were research interest ( $M = 1.80, SD = 1.15$ ), interest in higher education ( $M = 3.08, SD = 1.83$ ), and desire for knowledge ( $M = 3.33, SD = 3.34$ ) (see Table 5).

Interest in higher education was ranked second in the current study's faculty's reasons and third in

the Madison et al. (2004) faculty's top three reasons students would consider pursuing a PhD. Both groups of faculty felt that research interest would be the top reason students would consider pursuing a PhD; this was listed as fifth by the students. Comparing the current study's students' reasons to the reasons given by both groups of faculty, desire for knowledge was ranked third in the top three reasons of the current study's faculty and second in the Madison et al. faculty's reasons. Both the current study's students and the SLPs in the Madison et al. study ranked a desire for knowledge in their top three reasons to pursue a PhD, and a desire for knowledge seems to be the one

**Table 4.** Reasons provided by students for why students pursue a PhD, ranked according to mean response (lower mean is indicative of higher ranking; 1 = most important).

<i>Reason</i>	<i>Number of responses</i>	<i>M</i>	<i>SD</i>
<b>Desire for knowledge</b>	49	2.86	2.07
Make contribution to the discipline	48	3.33	2.56
Interest in higher education	44	3.41	2.55
Wanted to build a better life for themselves and children/family	43	4.00	3.70
Research interest	46	4.07	3.23
Desire to teach in a university setting	46	4.35	3.24
Future salary possibilities	41	4.90	3.47
Availability for financial support	42	5.07	4.03
Dissatisfaction with current position	39	5.38	5.28
Prestige/title	43	5.40	3.42
Interest in working with a particular scholar	39	5.97	4.68
Dissatisfaction with current degree	39	6.03	5.38
Spousal/significant other influence	39	6.23	5.17

*Note.* Reasons that overlapped with faculty are bolded.

**Table 5.** Reasons provided by faculty for why students pursue a PhD, ranked according to mean response (lower mean is indicative of higher ranking; 1 = most important).

<i>Reason</i>	<i>Number of responses</i>	<i>M</i>	<i>SD</i>
Research interest	15	1.80	1.15
Interest in higher education	12	3.08	1.83
<b>Desire for knowledge</b>	12	3.33	3.34
Interest in working with a particular scholar	11	4.36	3.44
Desire to teach in a university setting	15	4.87	2.26
Make contribution to the discipline	14	5.07	2.59
Wanted to build a better life for themselves and children/family	11	5.18	4.71
Availability for financial support	11	5.45	4.11
Future salary possibilities	13	5.54	4.35
Dissatisfaction with current degree	10	5.70	3.92
Dissatisfaction with current position	12	6.08	2.54
Spousal/significant other influence	10	6.20	5.83
Prestige/title	13	6.38	3.07

*Note.* Reasons that overlapped with students are bolded.

connecting reason to pursue a PhD between all four groups.

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## DISCUSSION

In 2002, the ASHA Joint Ad Hoc Committee on PhD Shortages in CSD alerted the field to the shortage of doctoral faculty and made several recommendations concerning how to improve the situation. In a 6-year follow-up to the original report, the committee still expressed concern that the rate at which doctoral faculty were retiring was far greater than the number of PhD students ready to fill those positions.

Two previous studies (Madison et al., 2004; Myotte et al., 2011) explored reasons that SLPs who currently work in the CSD field did or did not choose to pursue a PhD. The current study focused on students in order to better understand why students who are currently involved in academics and who may have fewer family obligations may or may not continue their education. This study has been the first attempt to examine student perceptions. The present study surveyed faculty and students to assess how many students were considering a PhD, to examine students' perceptions of faculty, and to identify what considerations they may have in the decision-making process of whether or not to pursue a PhD. These responses were compared to those of the faculty and SLPs in the Madison et al. (2004) investigation.

We attempted to discern how many students were considering pursuing a PhD and what the motivators and deterrents underlying that decision were. We also wanted to examine what misperceptions students had, if any, of faculty—who are responsible for changing the academic climate—to help faculty to recruit and retain more PhD students. Further, we wanted to compare the reasons that students and SLPs considered about whether to pursue a PhD or not to determine if different recruiting approaches should be used.

There were almost equal numbers of students who were convinced that a faculty position is not for them (decidedly no) as there were students who were considering pursuing a PhD for a faculty position (decidedly yes). Many of the students who were decidedly no were AuD students who were concerned about the long time commitment. Additionally, there were a handful of students who answered maybe to the question of whether they would consider getting a PhD. More students who answered that they were not or may be considering a PhD were first-year students. This may reflect that these new graduate students either had not yet considered pursuing a PhD, were still uncertain about the prospects of graduate school,

or had not yet had experiences that would encourage them to consider pursuing a PhD.

In terms of deterrents, most students did not seem to be deterred by the teaching aspects of a faculty position such as mentoring students, lecturing, or preparing content. Those who responded that they were dissuaded by teaching aspects, primarily students who were not considering pursuing a PhD, felt that they had insufficient knowledge, found clinic more appealing, or specifically listed no research interest as a deterrent. This last reason seems to reinforce that students were not deterred from pursuing a PhD based on teaching responsibilities but are primarily concerned about aspects of research.

Further examination of the research aspects of a faculty position revealed that students were most concerned about having to develop research projects. Given that students were strongly deterred by this aspect of research, it suggests that students' perspectives of the research process are weighted more heavily toward their perceived difficulties of developing a research project than the reward and gratification of developing such a project. Although students were deterred from the PhD by having to develop research projects, students felt that pursuing interests and mentoring students would be motivating reasons to obtain a higher degree.

It is difficult to discern exactly which aspects of research project development are most intimidating to students. It may even be the case that students are more deterred by the uncertainty of the process than by what the actual process involves. Obviously, research experience could help to amend this negative perspective, but all students may not have this opportunity based on university or department resources. Some faculty have proposed integrating a research experience into the curriculum in order to offer more students the opportunity to see a research project develop (Williams & Fagelson, 2003). Ultimately, what is most important is that students base their decision to pursue a PhD or not on informed experiences and not a lack of understanding or misperceptions.

Students' and faculty's perspectives differed on what they saw as reasons for the PhD shortage. Students strongly felt that the shortage was largely due to the appeal of clinical work, and although the faculty agreed, they also felt that there were numerous other reasons. One faculty concern was that there was not enough exposure to the field, but this seems to be unsupported given the increasing numbers of students in undergraduate programs (Council of Academic Programs in Communication Sciences and Disorders, 2009).

A second concern was that the terminal master's degree in CSD for speech-language pathology and the

AuD degree for audiology impeded student's willingness to consider pursuing another degree after having already gone through the graduate school application process once. The fact that many AuD students and first-year students were more weary of pursuing a PhD may be indicative of a lack of willingness to pursue another degree. If this is a deterrent for students, one solution would be to expose more undergraduate students to research experiences that could help to make the decision to pursue a doctoral degree before applying to graduate school for the terminal master's degree. Additionally, CSD programs may offer degree programs that combine both the clinical and doctoral degrees. Lastly, faculty commented that the length of the doctorate and lack of funding are reasons for not pursuing a PhD, and these two aspects were confirmed in the student survey, as discussed later.

In terms of perceptions about faculty life, the majority of students estimated that faculty spent 25% of their time teaching, and this closely matched many faculty, who responded that they taught 25%–40% of their time. However, there was a great deal of variability in students' responses, with some students estimating that teaching time was as low as 10% or as high as  $\geq 60\%$ . Given the variability in the students' responses, there could be a slight misperception that students overestimate the amount of time faculty spend doing research; this could partially explain why students expressed more concern about research aspects than teaching aspects.

Students also had a misperception about faculty salaries. Most students underestimated faculty salaries, with the majority of students estimating faculty salaries to be in the \$60–70,000 range. The faculty in this survey responded that they made between \$60–100,000+ per year, with 44% of faculty responding that they made  $\geq \$100,000$ . This range accurately reflects the average salaries of each university based on the level of the faculty (full, associate, or assistant) (American Association of University Professors, 2012). As a comparison, SLPs in schools make a median salary of \$56,000 (ASHA, 2010b), SLPs in health care settings make a median salary of \$70,000 (ASHA, 2011), and audiologists make a median salary of \$70,000 (ASHA, 2010a). The students' estimates of faculty salaries closely match the median income of SLPs' salaries, and one could reason that change in income would not be a motivating factor, given this misperception, for students to obtain a higher degree. This does not imply that students should pursue a PhD on the basis of a potentially higher income. However, if students realized that there was the possibility for faculty to earn more than clinicians in some positions, students might be more

willing to commit to the short-term pay decrease and time commitment to get the PhD.

Students did not view a faculty position as a rewarding career. Only a little more than half of the students, across all student subgroups, thought being a professor would be a rewarding career, whereas almost all of the faculty felt that their career was very rewarding or mostly rewarding. Faculty felt that the time demands of being faculty as well as balancing professional and personal demands were the most challenging aspects of the career. Students agreed in that most thought that time and personal–professional balance would be challenging aspects of being faculty, but many students also included research demands as another challenging aspect. This was especially a common theme for the students who were not considering a PhD.

Looking more closely at the personal–professional balance, all faculty felt that they achieved either complete balance, balance most of the time, or balance some of the time. Students, on the other hand, were much more distributed, with very few students believing that if they were a professor they could achieve some degree of personal–professional balance. Students seemed to view a faculty position in CSD to be very challenging, with little balance.

Students also did not see the potential of faculty being able to balance their personal and professional lives, although all faculty in this survey felt that they could achieve balance to some degree. In contrast, whereas students did not view faculty as achieving balance, students' responses matched on the average number of weekends that the faculty worked and the percentage of faculty that were married, so it does not appear that students are under- or overestimating on these more specific aspects. Overall, though, students had misperceptions about the amount of time faculty spent teaching versus doing research, faculty salaries, and personal–professional balance.

Many of this study's faculty responded that they were inspired to pursue a PhD by a respected professor or mentor or their research experience as undergraduates or master's students. Ingham (2003) also noted this as a source of inspiration for pursuing a PhD. Many students in the current study were involved in some aspect of research during their student career. In this study, all of the students considering pursuing a PhD had research experience. It seems that research experience and mentoring opportunities are important for facilitating decisions about pursuing a PhD, perhaps especially for those students who are undecided and for those students who are undergraduates (Mueller & Lisko, 2003). Research experience can help to demystify the research process, help students realize their research potential, and allow

additional exposure to faculty where faculty can show and discuss career satisfaction and personal–professional balance.

There was close correspondence in the responses of faculty in the present study and those in the Madison et al. (2004) study with respect to their perceptions of why students/SLPs do not pursue a PhD. Although faculty in the current study recognized that family obligations were a consideration, we found it somewhat surprising that family obligations were ranked in the top three reasons why students do not consider pursuing a PhD. Students also ranked length and cost of the doctoral program very highly. The Madison et al. faculty also projected that length was a primary consideration.

The students' concern about the length of the program is somewhat difficult to decipher given that most students' perception of the length of the doctoral program matched the faculty's average of 4 years, and that average is less than the national average of 7 years (Hoffer & Welch, 2006). Perhaps this concern is a reflection of the total amount of time required to obtain a master's degree, clinical certification, and a doctoral degree. This should be examined in future studies to assess whether the concern is about the length of the doctoral degree per se or the total length of training required.

Both groups of faculty were aware that a lack of financial support was an important consideration of students. On the other hand, a large number of faculty in this study were funded for their doctoral programs. Students overwhelmingly answered that they would need financial assistance in order to pursue a PhD. Concerns about associated financial costs of getting a PhD are not new, but it seems to be a persisting concern (Bernthal, 2001; Busacco, 1999). Some faculty have offered potential solutions (Hull & Coufal, 2009), but funding appears to be an area that needs to continue to be addressed and potentially could be addressed in terms of getting information out to the students about what sources of funding are available.

Students' and SLPs' reasons for not pursuing a PhD were quite distinct. Students and SLPs both ranked family obligations in their top three reasons for not pursuing a PhD. Contrary to the students' concerns about the length and cost of the doctoral program, SLPs listed lack of research interest and satisfaction with their current position as reasons not to pursue a PhD (Madison et al., 2004; Myotte et al., 2011). This is an important distinction when considering recruitment efforts because students' concerns may be more amenable when they are given additional information regarding the structure of doctoral programs and financial resources. Alternatively, SLPs'

concerns regarding job satisfaction are much more difficult for recruitment efforts to address.

Students' reasons for pursuing a PhD were quite closely matched to those of faculty and SLPs. What is interesting, however, is that faculty in both studies ranked research interest as the top reason they felt students would pursue a PhD, but students listed this as fifth. Although some students may be drawn to pursue a PhD because of their interest in research, it seems that students consider many additional reasons. On the other hand, SLPs did consider research interest in their top three reasons to pursue a PhD. Unlike students, SLPs were interested in getting a PhD in order to teach. Lastly, a desire for knowledge was the one reason that connected all four groups with respect to the motivation to pursue a PhD.

### Potential Strategies and Implications

Based on the findings of this study, some potential strategies for PhD recruitment of students in the field of CSD can be summarized as follows:

- Create a more positive image of research development to give students a more balanced perspective.
- Encourage students to seek out research experiences with quality mentoring experiences early in their career.
- Incorporate combined MS/PhD or AuD/PhD programs for students to pursue when initially applying to graduate school.
- Develop more awareness of potential funding mechanisms and future salary potentials.
- Target clinicians and students as independent groups for recruitment.
- Focus on the advancement of knowledge (a quality that all groups sought) when considering different recruitment approaches.

To further expand on these ideas, we examined the literature from other fields that are also facing faculty shortages. Common themes emerged across these disciplines that emphasize as well as expand on the suggestions above. General suggestions included creating a positive image, mentoring students, minimizing time commitments, and considering different funding opportunities. The literature in nursing and dentistry emphasized the goal of creating a more prestigious image of faculty (Carr et al., 2010; DeYoung et al., 2002; Hinshaw, 2001). No specific approaches for doing this were mentioned other than mentoring, the importance of which was emphasized across nursing, dentistry and business.

John et al. (2011) proposed the “growing our own” concept, which reflects the idea that early mentoring helps to lead capable students to consider a faculty career. Many considered mentoring opportunities such as creating informal seminars, brown bags, or faculty discussions about pursuing or being a PhD (Carr et al., 2010; DeYoung et al., 2002; Trapnell et al., 2009) or more formal mentoring programs as detailed in John et al. Given how many fields recognize the significance of mentoring, active approaches should be taken to foster mentoring opportunities for students in our field. These programs could be similar to ASHA initiatives like the Student to Empowered Professional (STEP) or Mentoring Academic-Research Careers (MARC) programs. Alternatively, individual departments could develop their own mentoring programs. These national measures, however, require that students are aware of these opportunities, which is why departmental programs may be more likely to directly reach undergraduate students.

Minimizing time commitments refers to both the time between obtaining a degree for clinical career entry and the time when a doctoral (research) degree begins and is completed. In dentistry and nursing, similar to CSD, time to develop clinical expertise is highly valued. Solutions to minimize the amount of time that professionals spend developing clinical expertise before pursuing a PhD is of high importance. Many suggest not delaying entry into PhD programs (DeYoung et al., 2002) and developing “accelerated paths” (Berlin & Sechrist, 2002, p. 54) to reduce time to degree completion and readiness for faculty positions (Allan & Aldebron, 2008; Hinshaw, 2001). This notion of accelerated paths to completion could be reflected in combined degree programs to help students streamline coursework and other requirements. Completing a doctoral degree in a timely fashion is reaffirmed in the business field, which suggests that “time to degree” must be minimized to make it worthwhile for students to pursue a degree (Trapnell et al., 2009, p. 431). One attempt at creating streamlined approaches without affecting the doctoral education would be to develop explicit timelines that detail necessary coursework, when clinical work will be completed, expected research progress, and so forth.

Funding was also a familiar challenge for other fields. In nursing, there was discussion of developing a loan repayment program for students who successfully completed the doctoral program (DeYoung et al., 2002), creating a faculty loan initiative to pay for new faculty positions (Hinshaw, 2001), and promoting competitive salaries (Berlin & Sechrist, 2002; Carr et al., 2010; DeYoung et al.,

2002; Hinshaw, 2001). Furthermore, many proposals for recruiting more PhDs were based on tapping into multiple types of funding sources. Examples of external sources included competitive research programs for doctoral students (Trapnell et al., 2009), federal funding, state funding, philanthropic and industrial scholarships (Allan & Aldebron, 2008), and trading funding for clinical placements and supervision (DeYoung et al., 2002). Different fields have access to different funding sources, but finding funding for students is a challenge for all of the fields facing PhD shortages and may require some creativity and innovation.

Importantly, these other fields draw attention to avoiding quick fixes. As Allan and Aldebron (2008) and John et al. (2011) pointed out, remedies for the faculty shortage can address the short-term problem, but additional steps must be taken in order to set the field up to thrive in the future. Also, Allan and Aldebron discussed the value of evaluating what works in recruiting and retaining doctoral students to know how to apply these strategies in new locations or circumstances. CSD is not the only field to face PhD faculty shortages. We must understand the current situation and make serious attempts to recruit new PhD students for faculty positions.

## Limitations

This study was the first prospective survey to examine student perspectives in order to contrast their perceptions with the reality of a faculty career. The results of this study offer insights into how students view a faculty career, why students have concerns about pursuing a PhD, and what students might be motivated by to consider pursuing a doctoral degree. This, however, is a first glance, and there are several limitations of this study.

First, the response types used in this survey only allowed for a descriptive examination of the results. Future studies should use a Likert-type scale response similar to Myotte et al. (2011) or an alternative response type that allows for analysis. Additionally, the sample size in this study was reasonably sized for the students but was relatively small for the faculty. Future studies should attempt to recruit from a larger sample so that factors such as university size, university research focus, and geographic influences can be taken into account. Lastly, future studies may consider surveying students at the undergraduate level to better assess when interest in research begins and to establish perspectives at this earlier period of education. Another approach would be to survey current PhD students who could reflect on what led them to pursue a PhD.

## Summary

Although both students and SLPs have important considerations during the decision-making process of whether or not to pursue a PhD, it seems that students' concerns about funding and the length of the PhD program are much more easily addressed than the lack of research interest and satisfaction with their current position that SLPs listed as deterrents. All faculty surveyed felt that they achieved at least some personal and professional balance, although many students did not view this as possible. Despite these perspectives, approximately half of the students were considering pursuing a PhD, and many students felt inspired by many aspects of teaching but deterred by the need to develop research projects. One potential way to overcome this deterrent may be to show students more aspects of the research process. Research experiences allow ample mentorship opportunities to expose students to the research process; to help students realize their research potential; and to interact with faculty who may then share their career satisfaction, personal-professional balance, and so on. This study was the first to examine students' perspectives. Future studies should examine a larger group of students using stronger survey methodologies based on this initial investigation.

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## APPENDIX (p. 1 of 3). SURVEY QUESTIONS AND ANSWER CHOICES FOR FACULTY AND STUDENTS

### Faculty Survey Questions

1. Which university are you affiliated with? (University of Arizona, University of Wisconsin—Madison, University of Nebraska-Lincoln)
2. What is your rank? (Assistant Professor, Associate Professor, Full Professor, Other)
3. When did you receive your PhD degree? (Between 1946–1970, 1971–1980, 1981–1990, 1991–2000, 2001–2008)
4. Why do you believe there is a PhD shortage in communicative disorders? (Not enough students know about the field of communicative disorders, Clinical work is more appealing to most, A negative perception of what a professor does day-to-day, All of the above, Other)
5. Did you practice clinically before pursuing your PhD? (Yes, No)
6. Did/do you find your clinical experience helpful in any of the following ways? (Yes-in my ability to teach students-future clinicians, Yes-in my ability to address research questions, Yes-both in teaching and research, No-it did not help me)
7. How long did you practice clinically? (0, 1, 2, 3, 4, 5–9, 10+ years)
8. How many years are sufficient to gain clinical experience before beginning teaching? (0, 1 (CF year), 2, 3, 4, 5–9, 10+ years)
9. Did you receive funding as a PhD student? (Yes-for the entire length, Yes-for the first part, Yes-for the second part, No)
10. In which area do you teach? (Speech, Language, Hearing, Other)
11. Which aspect of teaching do you most enjoy? (Preparing content, Lecturing, Mentoring students, What else?)
12. Estimate what percent of your time you currently allot to teaching? (0%, 10%, 25%, 40%, 50%, 60%+)
13. What do you enjoy most about your research position? (Mentoring students, Pursuing interests, Developing projects, Managing a lab, Sharing interests [lectures, talks, publications], All of the above equally, None of the above)
14. Estimate what percent of your time you currently allot to research? (0%, 10%, 25%, 40%, 50%, 60%+)
15. What sparked your research interest? (Research as an undergraduate [volunteer or paid], Research as a master's graduate student [volunteer or paid], A respected professor or mentor, Clinical experience, Other)
16. What is your annual (12-month) salary? (\$20,000–\$30,000; \$40,000–\$50,000; \$60,000–\$70,000; \$80,000–\$90,000; \$100,000+)
17. Overall, do you think that being a professor is a rewarding career? (Yes-very rewarding, Yes-mostly rewarding, No-not very rewarding, No-not rewarding at all)
18. What do you find most challenging about your career choice? (Teaching demands, Research demands, Service demands, Time demands, Balancing personal and professional demands, Other)
19. How many weekends do you work per month (at least one day)? (1, 2, 3, 4 weekends)
20. a) How do you rate your ability to balance your professional with your personal life? (1 = my life is balanced, 2 = I find balance most of the time, 3 = Sometimes I find balance, 4 = I rarely find balance, 5 = I spend too much time working)  
b) Do you participate in any of the following activities outside of your career (Select all that apply): (Regular exercise, Book club, Dinner club, Music [singing, musical instrument], Family life; Please list other outside activities you do)
21. Are you in a committed relationship? (Yes-currently, Yes-previously but not presently, No-never have been)
22. Do you have any children? (Yes, No)



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## APPENDIX (p. 2 of 3). SURVEY QUESTIONS AND ANSWER CHOICES FOR FACULTY AND STUDENTS

23. Overall, how would you characterize your attitude? Do you wake up every day and say: (I wake up every day and say, "I can't wait to go to work;" I'm generally excited to go to work most days; I wake up some days ready for work and other days I have no desire to go to work; I generally feel negative about going to work most days; I wake up every day and say to myself, "Do I have to go to work today?")
24. To better understand why you think students choose NOT to pursue a PhD, please respond to the following (from Madison, Guy, & Koch, 2004). Indicate all that apply and rank in order of most important. (1 = most important, 2 = next important, etc.) (Lack of research interest, Spousal/significant other influence, Distance/location of program, Lack of financial support for doctoral students, Criteria for being accepted, Family obligations, Satisfaction with current salary, Satisfaction with current position, Long hours, Satisfaction with current degree, Lack of interest in teaching, Cost of doctoral program, Lack of interest in working in higher education, Length of doctoral program, Other [please explain])
25. To better understand why you think students CHOOSE to pursue a PhD, please respond to the following (from Madison, Guy, & Koch, 2004). Indicate all that apply and rank in order of most important. (1 = most important, 2 = next important, etc.) (Research interest, Spousal/significant other influence, Wanted to build a better life for themselves and children/family, Future salary possibilities, Prestige/title, Interest in higher education, Dissatisfaction with current degree, Desire to teach in a university setting, Dissatisfaction with current position, Availability for financial support, Desire for knowledge, Interest in working with a particular scholar, Make contribution to the discipline, Other [please explain])
26. Do you have any additional comments or thoughts you would like to share?

### Student Survey Questions

1. Which university do you currently attend? (University of Arizona, University of Wisconsin—Madison, University of Nebraska—Lincoln)
2. What year are you in your master's degree program or AuD program? (First, Second, Third, Fourth, Fifth, Sixth Year)
3. Are you considering pursuing a PhD in your future? (No, Yes-in 1–2 years, Yes-in 3–4 years, Yes-in 5+ years, Maybe-I am unsure)
4. Why do you believe there is a PhD shortage in communicative disorders? (Not enough students know about the field of communicative disorders, Clinical work is more appealing to most, A negative perception of what a professor does day-to-day, All of the above, Other)
5. Is this the first time that you heard that there is a PhD shortage in our field? (Yes, No)
6. How important is it for a professor to practice or have practiced clinically? (Very, Somewhat, Not important)
7. How many years are sufficient to gain clinical experience before beginning teaching? (0, 1 [CF year], 2, 3, 4, 5–9, 10+ years)
8. How long do you think it takes to get your PhD (not including years for a master's degree)? (1, 2, 3, 4, 5, 6, 7, 8, 9, 10+ years)
9. If you decided to pursue a PhD, how important is it that you receive funding? (I couldn't pursue a PhD without funding, I need at least partial funding to consider it, Funding is not important in my decision)
10. Which area of communication disorders most interests you? (Speech, Language, Hearing, Other)
11. a) Which aspect of teaching deters you the most from pursuing your PhD? (Preparing content, Lecturing, Mentoring students, What else?)  
b) Which aspect of teaching inspires you the most to pursue your PhD? (Preparing content, Lecturing, Mentoring students, What else?)
12. Estimate what percent of a professor's time is spent teaching? (0%, 10%, 25%, 40%, 50%, 60%+)

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## APPENDIX (p. 3 of 3). SURVEY QUESTIONS AND ANSWER CHOICES FOR FACULTY AND STUDENTS

13. a) Which aspect of research deters you the most from pursuing your PhD? (Mentoring students, Pursuing interests, Developing projects, Managing a lab, Sharing interests [lectures, talks, publications], All of the above equally, None of the above)
  - b) Which aspect of research inspires you the most to pursue your PhD? (Mentoring students, Pursuing interests, Developing projects, Managing a lab, Sharing interests [lectures, talks, publications], All of the above equally, None of the above)
  14. Estimate what percent of a professor's time is spent doing research? (0%, 10%, 25%, 40%, 50%, 60%+)
  15. a) Have you been (for at least one semester) or are you currently involved in research (planning, data collection, etc., more than a participant)? (Yes-as an undergraduate, Yes-currently, No-I have never had the opportunity, No-I am not interested, Other)
  - b) If yes, do/did you consider this a positive experience? (Yes, No)
  16. What do you predict is the annual (12-month) salary of a professor? (\$20,000–\$30,000; \$40,000–\$50,000; \$60,000–\$70,000; \$80,000–\$90,000; \$100,000+)
  17. Overall, do you think that being a professor is a rewarding career? (Yes-very rewarding, Yes-mostly rewarding, No-not very rewarding, No-not rewarding at all)
  18. What do you expect is the most challenging aspect of being a professor? (Teaching demands, Research demands, Service demands, Time demands, Balancing personal and professional demands, Other)
  19. Do professors work weekends? (Yes-at least one weekend per month, Yes-at least twice a month, Yes-they work every weekend, No-they do not work weekends)
  20. Assume you are a professor, how would you rate your ability to balance your professional and personal life? (1 = My life would be balanced, 2 = I would find balance most of the time, 3 = Sometimes I would find balance, 4 = I would rarely find balance, 5 = I would spend too much time working)
  21. What percent of professors in communicative disorders do you estimate are in a committed relationship? (5%, 10%, 25%, 50%, 75%+)
  22. What percentage of professors do you estimate have children? (5%, 10%, 25%, 50%, 75%+)
  23. What do you view as your greatest limitation to pursuing a PhD? (It is too time consuming, It is too costly, My personal relationships would suffer, I have no interest in research, I see no limitations, Other)
  24. To better understand reasons why you would NOT pursue a PhD, please respond to the following (from Madison, Guy, & Koch, 2004). Indicate all that apply and rank in order of most important. (1 = most important, 2 = next important, etc.) (Lack of research interest, Spousal/significant other influence, Distance/location of program, Lack of financial support for doctoral students, Criteria for being accepted, Family obligations, Satisfaction with current salary, Satisfaction with current position, Long hours, Satisfaction with current degree, Lack of interest in teaching, Cost of doctoral program, Lack of interest in working in higher education, Length of doctoral program, Other [please explain])
  25. To better understand reasons why you would consider pursuing a PhD, please respond to the following (from Madison, Guy, & Koch, 2004). Indicate all that apply and rank in order of most important. (1 = most important, 2 = next important, etc.) (Research interest, Spousal/significant other influence, Wanted to build a better life for you and your children/ family, Future salary possibilities, Prestige/title, Interest in higher education, Dissatisfaction with current degree, Desire to teach in a university setting, Dissatisfaction with current position, Availability for financial support, Desire for knowledge, Interest in working with a particular scholar, Make contribution to the discipline, Other [please explain])
  26. Do you have any additional comments or thoughts you would like to share?
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