

Academic Program Review

SELF-STUDY 2012-2019* *with 2020 updates

DEPARTMENT OF SPEECH, LANGUAGE, AND HEARING SCIENCES





MESSAGE FROM OUR DEPARTMENT HEAD

I am pleased to provide this in-depth review of our department covering the years from 2012 to 2019. While self-assessment is an on-going aspect of our program, the structured self-study process always offers a particularly useful learning opportunity. In the year 2020, however, our learning continued as the COVID-19 pandemic took hold and national unrest prompted us toward a deeper, more



thoughtful review of who we are and who we want to be. Given the delay in the review process, we took the opportunity to include updated narrative to better capture where we are at the end of 2020.

The mission of the Department of Speech, Language, and Hearing Sciences is to contribute to the scientific study of human communication and its disorders, and to educate students regarding the knowledge and skills necessary for clinical and research endeavors. The basic science conducted in our department is complemented by translational research that focuses on the nature and treatment of communication disorders.

The University of Arizona has been a national leader in the fields of Speech-Language Pathology and Audiology for more than four decades. Both of our clinical programs are ranked in the Top Ten Best Graduate Programs by U.S. News and World Report. This distinction reflects the national and international leadership of our faculty, excellence in classroom and clinical education, and the wonderful environment at the University of Arizona. Our programs also reflect the amazing support of our outstanding staff and our partnership with the community.

A degree in Speech, Language, and Hearing Sciences can be the foundation for clinical or research careers, but also provides an understanding of human communication that is an asset for any life pursuit. Over the course of their education, we expect all our students to gain a greater appreciation of the amazing gift of human communication and the opportunity to serve those with communication disorders. Indeed, we are fortunate to engage in a field of study that enhances individual lives by improving the ability to communicate.

This document was prepared by the SLHS Academic Program Review Self-Study Committee Pélagie M. Beeson and Aileen Wong (Chairs), Kate Bunton, Mark DeRuiter, Kindle Rising, Susan Bridgewater, and Kim Sasser.

Photo Credit (left): Paul O'Mara, campus views from the stadium roof in the evening.

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UNIT OVERVIEW

DEPARTMENT OF SPEECH, LANGUAGE, AND HEARING SCIENCES ACADEMIC PROGRAM REVIEW SELF-STUDY 2019

A. SELF STUDY SUMMARY

The purpose of this self-study is to describe and review the academic programs in the Department of Speech, Language, and Hearing Sciences (SLHS). As we characterized and evaluated our recent history, we revisited our mission and accomplishments toward our strategic priorities, and thoughtfully considered directions for the future.

We have an outstanding group of individuals in the department, who have worked together to grow and maintain our top-ranked programs. We highlight some of our strengths in this document including:

- A strong undergraduate program that prepares students to become science-literate, citizenadvocates with a solid foundational understanding of human communication and its disorders, along with fully preparing students to pursue graduate education in speech-language pathology, audiology, and speech, language, and hearing sciences.
- A faculty that consistently provides excellent and innovative classroom learning experiences and are rated highly by students at the undergraduate and graduate levels.
- Top 10 national ranking of our clinical education programs in Speech-Language Pathology and Audiology that provide the context for excellent clinical service delivery to our community and preparation to serve the diverse populations of our state, nation, and abroad.
- A highly productive research environment with exceptional scholarly contributions across the broad range of communication sciences and disorders, where the next generation of researchers launch their careers.
- An active and welcoming context for student engagement in research and teaching, community service, and development of leadership skills.

As intended, the self-study provided an opportunity to examine areas needing change or growth and to clarify and articulate our goals for the future. We summarize those reflections in the relevant sections and integrated them in our plans for the future in a final section of this document.

A.1. Administrative Home

The Department of Speech, Language, and Hearing Sciences (SLHS) is housed within the School of Mind, Brain, and Behavior (MBB) in the College of Science at the University of Arizona. The Department origins go back some 90 years, when we were in the College of Fine Arts. When the College of Arts and Sciences was formed in the early 1980s, we were part of the Faculty of Science, and we have been part of the College of Science since its formation in the mid-1990s. We were a founding member of the School of Mind, Brain, and Behavior when it was organized in Fall 2009, along with the Department of Psychology, the Department of Neuroscience, and the Graduate Interdisciplinary Programs in Cognitive Science and in Neuroscience.

In the broader context, it is important to acknowledge that the University of Arizona sits on the original homelands of Indigenous Peoples who have stewarded this Land since time immemorial. Consistent with our core values as a diverse and inclusive community, it is our institutional responsibility to recognize and acknowledge the People, culture, and history that make up our campus community.

The University of Arizona is a land-grant institution founded in 1885, just 13 years after the initial enactment of the Morrill Act of 1862. As such, the university is committed to education that is accessible to the general population of the state. Growth in scientific inquiry across many academic units positioned UArizona to set sights on becoming a research emphasis institution in the 1970s. Under the leadership of <u>President John Schaefer</u>, the University of Arizona achieved the Carnegie classification as a Research 1 institution in 1973. The commitment to research influenced faculty growth and direction of SLHS during that time. The research emphasis is a complement to the the University of Arizona commitment to inclusive education for Hispanic and Native American residents of the state. The University of Arizona was recently granted the Department of Education designation as an Hispanic Serving Institution (HSI). We are also designated as an American Indian/Alaskan Native Serving Institution per White House Executive Order 13592. As described in later sections, SLHS has a long history of programmatic support to enhance the professional work force with individuals who are well-prepared to serve multicultural/multilingual populations.

A.2. Faculty

As summarized in **TABLE A.2**., our faculty includes 33 individuals across tenure-eligible and career-track lines. Because clinical education is a significant focus of our graduate program, nearly half of our faculty are clinical professors in either Speech-Language Pathology (SLP) or Audiology (Aud). In Fall 2019, our tenure-track faculty included 6 Full Professors, 6 Associate Professors, and 5 Assistant Professors. As noted in **TABLE A.2.**, two of those individuals have less than a fulltime commitment to SLHS. Our career-track faculty includes 1 fulltime Senior Lecturer, and 16 clinical faculty (15.3 FTE). A detailed history of tenure-track and career-track faculty is included in **APPENDICES A and B** (with 2020 updates), respectively.

Position	Number	FTE	Names
Tenure-Track Faculty			
Full Professors	6	5.7	Beeson, Cone, Hoit, Plante, Story, Musiek ^{1 (FTE =.70)}
Assoc Professors	6	6.0	Alt ² , Bunton, Dai, Fabiano-Smith, Marrone, Samlan
Asst Professors	5	4.4	Brown, Darling-White, Kapa, Kielar, Miller ^{3 (FTE =.40)}
subtotal	17	16.1	
Career-Track			
Senior Lecturer	1	1.0	Velenovsky
Clinical Full Professor	1	1.0	DeRuiter (departed June 2020)
Clinical Assoc Professor	5	5.0	SLP: Casteix, Hawley, Faux (retired Jan. 2020)
			Audiology: Muller, Norrix
Clinical Asst Professor	7	6.3	SLP: Cazzato, Hernandez, Jensen, Monahan
			AUD: Barakat ^{(depart June 2020),} Hansen, Smith ^{(FTE =.49),}
			Wong ⁴ (Clinic FTE =.33)
Clinical Instructor	2	2.0	SLP: Reeb, Scholer
subtotal	16	15.3	
Total	33	31.4	

TABLE A.2. SLHS Faculty Overview by Rank Fall 2019 (with 2020 changes noted)

¹ Musiek is non-tenure Professor hired through Provost's office as target of opportunity in 2014.

² Alt promoted to Full Professor May 2020.

³ Miller has primary appointment in Neuroscience (.60 FTE) with .40 FTE in SLHS.

⁴ Wong has primary role in research, with .33 FTE directed toward clinical education.

A.3. Adjunct Instructors, Research Professionals, and Post-Doctoral Fellows

At various times over the period under review, we have employed one or two adjunct Instructors for course-specific teaching. We have a consistent cohort of research professionals who are largely supported by external grant funding. These individuals have research-specific duties, but they also play an important role in the education of our students in a variety of ways as they engage in mentoring of clinical and research activities, and some contribute to classroom teaching.

	Number	FTE	Names
Research Professionals			
Research Scientist	2	1.5	Oglivie ¹ , Patterson (FTE = .50)
Research SLP	3	2.8	Figueroa, Rising ^{1 (FTE = .80)} , Vance
Research Audiologist	1	0.5	Wong ¹ (Research FTE =.50)
Postdoctoral Fellow	1	1	Hall (completed Fall 2019)
Тс	otal 7	5.8	

TABLE A.3. SLHS Research	Professionals (updated	2020)
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¹ Oglivie, Rising, and Wong also contribute to classroom teaching.

A.4. Academic Programs

We have a single undergraduate program for the Bachelor of Science (B.S.) degree in Speech, Language, and Hearing Sciences. At the graduate level, we grant a Master of Science degree (M.S.) in Speech, Language, and Hearing Sciences, a Doctor of Audiology degree (Au.D.), and a Doctor of Philosophy (Ph.D.) in Speech, Language, and Hearing Sciences. The majority of students in the M.S. degree program pursue clinical education in Speech-Language Pathology, but the M.S. degree can reflect a non-clinical program of study that focuses on speech, language, and hearing sciences. We also offer a graduate level certificate in Multicultural/Bilingual Speech-Language Pathology or Audiology, which is available to matriculating students. **TABLE A.4.** provides a snapshot of enrollment for 2018-19, showing a total of 359 students across the degree programs.

TABLE A.4. Degre	ee Programs and	Specialization	Certificate in	Speech.	Language.	and Hearing	Sciences
TADLE AND DUGN	ce i rogranns ana	Specialization	certificate in	Specen,	Lunguuge,	und neuring	, Juichieus

Degree Program	F2018	Bilingual
	enrollment	Certificate
Undergraduate		
Bachelor of Science in Speech, Language, & Hearing Sciences	241	NA
Graduate		
Master of Science in Speech, Language, & Hearing Sciences	66	14
Doctor of Audiology	40	1
Doctor of Philosophy in Speech, Language, & Hearing Sciences	12	
Graduate subtotal	118	15
Total	359	15



UNIT DESCRIPTION AND GOALS

B. UNIT DESCRIPTION AND GOALS

At the time of the last APR, we presented our mission statement and major goals for the coming years. Over the course of the current review period (2012-2019), we made progress toward those goals and formulated new plans for the future. Our mission and overarching goals remain much the same, and our strategic priorities for the next five years are influenced by our new vantage in light of accomplishments and new challenges as detailed in this document.

B.1. Mission of the Department

The mission of the Department is to contribute to the scientific study of human communication and its disorders, to educate students regarding the relevant knowledge and skills necessary for clinical and research endeavors in the field, and to provide service to the university, community, state, and beyond.

Overarching Goals of the Department

The overarching goals of the Department fall into the domains of research, teaching, and outreach/social impact.

Research

• To advance the science that provides foundational understanding of human communication and its disorders

Teaching

- Undergraduate education
 - To promote critical thinking, writing skills, and problem-solving abilities
 - To provide high quality education in speech, language, and hearing sciences
 - To prepare students to continue their education with advanced degrees in audiology; speech-language pathology; speech, language, and hearing sciences; or related areas.
- Graduate education
 - To train highly qualified audiologists and speech-language pathologists who are wellgrounded in principles of evidence-based practice
 - o To prepare the next generation of scientists in our professions

Outreach and Social Impact

- To advance the quality and accessibility of clinical services in Tucson, Arizona, the nation, and international contexts
- To educate the public regarding the science and clinical aspects of human communication and its disorders
- To inform public policy relative to communication disorders

B.2. SLHS Strategic Priorities in Relation to University of Arizona Strategic Plan

The self-study process provided an opportunity to review our progress and evaluate our current status in the broader university context. As we set forth our strategic priorites for the coming years, they were informed by historical context, evaluation of quantitative and qualitative data, and reflections as included in this report. As expected, our new priorities extend and build upon previous accomplishments of the department. The mission and goals of the Department of Speech, Language, and Hearing Sciences align well with the strategic priorities of the University. In **Figure B.2.**, we list our strategic priorities and highlight the relation to the Pillars of the 2018 University of Arizona Strategic Plan.

FIGURE B.2	. 2019 Strate	egic Priorities	for Speech, I	Language,	and Hearing	Sciences and	relation to) the
Pillars of the	<u>e University</u>	of Arizona Str	<u>ategic Plan</u>					

SLHS Priority 1 STUDENT SUCCESS: To provide exemplary education programs that prepare the next generation of scientists, clinicians, educators, and leaders in the field of	SLHS Priority 2 FACULTY EXCELLENCE: To recruit, mentor, and retain strong, diverse faculty, and enhance the infrastructure for excellence in teaching and	SLHS Priority 3 SCHOLARSHIP: To conduct state-of- the-art basic, translational, and clinical research in communication sciences and disorders.	SLHS Priority 4 QUALITY CARE: To enhance access to culturally competent, evidence-based clinical care for people with communication needs	SLHS Priority 5 OUTREACH: To engage in outreach activities that directly benefit professional colleagues, students, and individuals and their families in the community (local
leaders in the field of communication sciences and disorders. Pillars I, III, IV	teaching and research. Pillars I, II	Pillars I, III, IV	needs. Pillars II, III, IV, V	community (local and beyond).



We briefly highlight the SLHS focus and activities as they contribute to the pillars of the University of Arizona strategic plan. Details are included in later sections.

- Pillar 1 The Wildcat Journey: preparing students for success
 - SLHS focuses on student engagement, degree completion with competence, preparation for graduate education, leadership development, and launching careers
 - SLHS supports a diverse student body, promotes alumni engagement, and lifelong learning opportunities through our robust continuing education programs

- Pillar 2 Grand Challenges: promote healthier communities, address aging and the brain, support human resilience
 - At the core of our mission is promotion of healthy living and efforts to reduce the impact of communication disorders. We aim to enhance access to culturally competent, evidencebased clinical care for people with communication needs.
 - SLHS conducts translational research regarding the nature and treatment of communication disorders across the lifespan, including a focus on the prevention and rehabilitation of agerelated, acquired impairments of language, speech, voice, and hearing.
- Pillar 3 Arizona Advantage: social impact, building on Arizona's unique location/demographics
 - SLHS focuses on high quality care for those with communication disorders, as well as prevention of acquired disorders.
 - We directly impact southern Arizona by our service delivery, program development, training of professionals who serve the community, and research that aims to maximize response to treatment across diverse populations.
- Pillar 4 UA Global: study abroad and global experience, preparation to thrive in interconnected world
 - SLHS engages in international educational and research collaborations for students and faculty.
 - SLHS develops service delivery models for multilingual/multicultural groups and crossborder collaborations. We prepare monolingual and multilingual professionals to deliver quality care in a multicultural world.
- Pillar 5 Institutional Excellence: Living our values, high-performing enterprise
 - SLHS is committed to research and clinical service delivery for communication disorders at the highest level of excellence.
 - SLHS faculty and students are ambassadors for the University of Arizona every day in clinical, research, and educational settings on campus, in the community, and across the world.

In summary, the department mission and strategic priorities naturally conform with those of the University of Arizona. Our tradition of academic and research excellence, student engagement, and community outreach have built a strong, positive reputation at local, national, and international levels. We embrace the university vision to further develop and enhance our ability to meet these critical needs.



UNIT HISTORY

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C. UNIT HISTORY

C.1. Major Changes Since Last Academic Program Review in 2012

There were many accomplishments since the last APR, but nothing that constitutes a major programmatic change. Changes were made in response to the recommendations from the last APR as well as directed efforts toward our strategic priorities set forth in 2012.

C.2. Summary and Responses to Recommendations of Last APR and 2012 Strategic Priorities

The 2012 APR committee provided a bulleted list of recommendations that included areas of strength that should continue and areas that warranted attention. (See **APPENDIX D** for verbatim list.) The review was very useful and overlapped with the strategic priorities established by the faculty in 2012 (See 2012 Strategic Priorities in **APPENDIX E**). The recommendations are highlighted below, grouped according to area of focus, with the response and actions taken.

Academic Programs

 <u>2012 APR Feedback</u>: The reviewers noted the strength of the academic programs and recommended that we continue "to provide excellent programs at the UG and graduate levels in speech-language and hearing sciences." We certainly appreciated that appraisal and detail our efforts to maintain strong undergraduate and graduate programs as detailed in Sections H and I, respectively.

Undergraduate Curriculum

• <u>APR Recommendation</u>: Consider instituting an undergraduate degree requirement for general biology in the SLHS curriculum

<u>Background and Action</u>: This recommendation reflected the fact that at the time of the last APR, students were allowed to use coursework in the major (Anatomy and Physiology of the Speech Mechanism) to fulfill the biological science requirement. We agreed with the committee that it would be preferable to specifically require students to take coursework in general biology, and the change in requirement was approved and became active in 2014. The biological sciences requirement must be met by one of several options that include either Introductory Biology I or II (e.g., MCB 181; ECOL 182), Human Anatomy and Physiology (e.g., PSIO 201), or approved transfer coursework in this area.

Teaching Assistants for Undergraduate Courses

• <u>Recommendation</u>: increase in the number of Teaching Assistants due to the marked increase in SLHS undergraduate majors during that epoch (2006-2012).

<u>Background and Action</u>: During the APR period from 2005-2012, our undergraduate enrollment increased dramatically from 158 to 340, and it peaked at 372 in Fall 2013. In the years that followed, enrollment declined and has been about 250 for the past three years (see undergraduate program description in **Section H**). Because the allocation of Teaching Assistants was tied to undergraduate enrollment, we did not have an increase in TAs over this time period. We did, however, increase the use of undergraduate preceptors who assist faculty with management of undergraduate courses. Undergraduate preceptors are invited/selected by faculty from students who previously completed a given course with distinction. They assist with

the management of the course, but not the grading. Preceptor enrollment registrations were implemented in Spring 2012 using the designations of SLHS 391 and SLHS 491. The initial enrollment was 10 students and increased to between 20 and 25 per year since Fall 2013.

MS and AuD Programs

• <u>Recommendation</u>: Add program fees to offset the costs of clinical education

<u>Action:</u> We followed this advice by implementing the necessary national review of program fees and crafted a formal proposal that was presented and endorsed by graduate students, submitted to the Provost's office, and ultimately approved by the Arizona Board of Regents. Starting Fall 2016, we implemented the following program fees: \$500 per semester for the MS program, \$750 per semester for the AuD program, and \$500 per semester for the bilingual program. In order to support students with demonstrated financial need, 15% of the collected fees are returned to students based on financial need documented through the FAFSA. Funds from the program fee are specifically directed toward salary support for the expansion and maintenance of off-site practicum opportunities. For example, program fees for the bilingual program pay a portion of the salary for a clinical faculty member who cultivates and coordinates bilingual clinical placements in the community.

PhD Curriculum

• <u>Recommendation</u>: The PhD program should have a statistics requirement; other PhD programs in this field typically require 2-3 statistics courses

<u>Background and Action</u>: We agree with the recommendation that PhD students have adequate background in statistics to prepare them for a research career, and our PhD students have been required to take at least three statistics courses as part of their program. [There may have been some miscommunication about this.] In line with the comments, we directed additional attention toward the need to accommodate students with widely varied backgrounds (including those who already have extensive statistical education). To do so, we changed the guidance in the PhD student handbook to promote flexibility along with reliance on the student's program committee to discern an appropriate plan for a given student. The current The PhD student handbook states the following:

Each student, in consultation with his or her program committee, will plan additional coursework in both the area of specialization and in any areas of speech, language, or hearing where the student may be deficient. In the area of specialization, any chosen course should meet the following conceptual criteria:

 Provides core information related to the student's proposed line of research.
 Provides tools for the conduct of research (e.g., statistics, programming, measurement, technologies employed in research)
 Contributes to the development of a conceptual theme underlying the student's

training program.

Support for PhD Students

• <u>Recommendation:</u> Reallocating TA funding to PhD students (rather than MS and AuD students)

<u>Action:</u> We followed this advice directly. The current model for allocation of TA funds is to first cover the financial needs of PhD students before awarding TA positions to MS and AuD students. As suggested by the reviewers, the PhD students benefit from the teaching experience as they prepare for academic careers. A common model is to support PhD students at .50 FTE,

with .25 for teaching and .25 for research. We have been transitioning to this model over the past five years.

 <u>Recommendation</u>: Increase resources to the PhD program by directing more of the faculty effort toward this aspect of student training

Actions: We have further developed our Ph.D. program in a number of ways.

1) We added a monthly seminar for PhD students that provides group mentoring and discussion of topics of common interest (e.g., the peer review process, time management for scientific writing, teaching, grant management, professional development, interview process). The meeting is managed by the PhD students with faculty guidance (Bunton). Selected readings are identified in advance of the meetings, but the seminar is not for academic credit, so that it does not add a burden to students.

2) We continued credit-based doctoral seminars for more intensive review of topics of interest. The seminar topics emerge from PhD student interest as well as faculty inspiration. Recent examples include Bilingual Language Development (Alt & Fabiano-Smith, F2015), Classic Readings and Speech and Hearing (Musiek, S2017), and Foundational Readings in Language and Cognition (Plante, Alt, Beeson, Brown, Fabiano-Smith, Kielar, S2018), and a current seminar on statistical methods (Plante, S2020).

3) We added PhD students to faculty search committees which provided an opportunity for them to contribute to the process, as well as gain additional insight regarding job searches. Additional benefit was gained from the increased interaction among the PhD students and faculty on the committees.

4) We added and improved office spaces for PhD students, including some common locations that facilitated improved colloborative context for students and fostered greater interaction across research labs.

PhD Student Recruitment

 Acknowledging the department goal for some growth in the size of the PhD program, the reviewers recommended use of other graduate programs as recruiting mechanisms, such as the Neuroscience GIDP (Graduate Interdisciplinary Program) and Physiology GIDP.

<u>Action:</u> Consistent with the effort for some growth in the PhD program, we have made additional efforts to enhance student recruitment. This included providing financial support for prospective doctoral students to visit the department and meet with mentors, other doctoral students, etc.

The specific recommendation to interface with UArizona graduate interdisciplinary programs for PhD recruitment was not a feasible mechanism because those students were already committed to a degree program. A more successful recruitment strategy has been to recruit and support outstanding students from our clinical graduate programs to pursue the PhD. We have increased programmatic flexibility to facilitate successful completion of the PhD program with varied options for the timing of a Clinical Fellowship Year (SLP) or Clinical Externship (AUD). (See research doctoral program description in **Section I**).

Faculty Support

• <u>Recommendation</u>: Continue to promote a culture of seeking extramural research support

<u>Action:</u> We continue efforts to protect adequate research time for faculty and to provide a supportive context for grant writing and submission. This includes peer review of grants, an activity that is explicitly noted and credited in the annual performance review process. Recognizing that statistical support for grant applications is a shared need, we made efforts to increase statistical support for researchers in the department (see discussion in Unit Resources, **Section G**), but this remains an area where improvement is needed.

• <u>Recommendation</u>: Some of the research productive academic faculty have relatively heavy teaching loads, some relief in terms of teaching is needed

<u>Background and Action</u>: We appreciated this recommendation because research productivity certainly requires protected time. Individual teaching loads reflect the size of the faculty and their content areas in relation to the curriculum. Our goal has been for tenure-eligible faculty to teach two courses per year, typically one undergraduate (3 units) and one graduate course (3 units) in their area, and then to periodically teach a specialty seminar (e.g., doctoral seminar, clinical workshop course, 1-2 units). This would yield a teaching load of 6 to 8 units. A review of classroom teaching for research faculty for 2012-13 averaged 8.13 course units. We were able to reduce the load over time as reflected by the average of 7.07 units per year for 2018-19. We note, however, that for 2019-20 and 2020-21, the teaching load for tenure-track faculty has been protected by the contributions of the clinical faculty and PhD students (discussed in **Section E.4 Teaching Load and Activities**).

• <u>Recommendation:</u> Should academic faculty positions become available, the areas that seem especially important include autism, bilingualism, and hearing science

<u>Action:</u> We were able to increase coverage in hearing science with the addition of Frank Musiek in 2014. Leah Fabiano-Smith's work in bilingual issues is complemented by the addition of Clinical Assistant Professor, Rui Hernandez (Motoyoshi) in 2015. We have included autism as an area of interest as we have hired over the past years but have not had any applicants in that area. We capitalized on the expertise of Jennifer Casteix, Clinical Associate Professor, in the area of autism, adding a group independent study option for graduate students (Spring 2020 & 2021) on the topic. As with other specialty areas (e.g., augementative and alternative communication), we can convert this to a workshop enrollment, which have had strong enrollment by clinical MS students during the second year.

<u>Recommendation</u>: Attempt to increase faculty salaries to be more highly competitive to stave
off recruitment of productive researchers by other universities, especially at the senior level. It
should be noted that the review team had questions about the accuracy of the salary data for
other institutions reported in the self-study (it appears to be too high for some of the schools).

<u>Background and Action</u>: At the time of the last APR, there was limited information available regarding salaries for peer institutions in our field, so salary data was solicited directly from a subset of peers. In recent years, the Council on Academic Programs in Communication Sciences and Disorders (<u>CAPCSD</u>) implemented salary surveys in 2013, 2016, and 2018, so that comparison data are more readily available. Data are presented in the faculty description

(Section E), showing that salaries for junior and mid-career faculty are on par with peers, but that senior faculty salaries need to be more competitive.

• <u>Recommendation</u>: Continue to create intellectual diversity among new hires (as has been done recently with the academic assistant professors) in both the academic and clinical faculty by recruiting across disciplinary boundaries as well as graduates of other institutions

<u>Action:</u> Among the hires since the last review, we added three individuals with disciplinary backgrounds that extend our breadth (Kielar, Kapa, Miller), and those with educational backgrounds outside the University of Arizona (Darling-White, Musiek, Kielar, Kapa, Brown). Increased intellectual diversity also comes from new clinical faculty detailed in **Section E**.

a. Fall 2014: Frank Musiek, Ph.D. from Case Reserve, formerly on faculty at Dartmouth University

Content area: auditory processing disorders

- b. Fall 2015: Meghan Darling-White, Ph.D. from Purdue University Content area: motor control and pediatric neuromotor impairments
- c. Fall 2017: Aneta Kielar, Ph.D. from Western Ontario University Content area: cognitive neuroscience
- d. Fall 2014 Julie Miller, Ph.D. from University of Arizona Content area: Neuroscience
- Fall 2017: Jessica Brown, Ph.D. from University of Nebraska, formerly on faculty at University of Minnesota Content area: traumatic brain injury/concussion and AAC (Augmentative and Alternative Communication)
- f. Spring 2018: Leah Kapa, Ph.D. from University of Kansas Content area: child development

As reviewed in **Section E.5**, we have made a number of excellent additions to our clinical faculty that further enhanced the diversity of our faculty composition in terms of background and expertise.

Physical Space

 <u>Recommendation</u>: The reviewers acknowledged the excellent improvements made by remodeling and updates in the SLHS building, but also recommended further improvements for the future, particularly for the clinic.

<u>Action:</u> There has been sustained effort to continue improvements to the SLHS building, particularly in areas devoted to clinical service delivery and clinical education as well as classroom teaching. Building improvements are highlighted in Unit Resources (**Section G**) and detailed thoroughly in **APPENDIX G**.

Information Technology (IT) Support

• <u>Recommendation</u>: Allow the department to specify the qualifications of the IT personnel needed to support the research and teaching missions and to participate in selection of IT personnel. This may also include improving program and lab websites

<u>Action:</u> We agreed with the need for greater input into IT management and improved quality of the IT support for our unit. We made great strides in this area with the hire of our current IT Manager, Peter In-Albon in 2014. Soon after we hired Peter, we began a reorganization of IT services for the School of Mind, Brain, and Behavior (MBB). Under the direction of the MBB

Executive Committee (which includes SLHS Department Head), we formed an IT committee with faculty representation across the school. This committee (in consultation with the Executive Board) agreed to appoint Peter In-Albon as IT Manager for the school and proceeded to hire an additional fulltime network manager for the school. As highlighted in Unit Resources (**Section G**) we have made marked improvements in all aspects of IT for SLHS and the school. This is currently an area of strength, rather than liability as it had been in the past.

Outreach

• <u>Recommendation</u>: Maintain the stellar quality of outreach to the community.

<u>Action:</u> Indeed, outreach to the community is a natural part of our mission. This includes not only the direct clinical service delivery that we provide in our clinic and within the community, but our commitment to advocating and educating the public regarding communication disorders and providing continuing education to professionals in our field and related areas. Activities over the past review period are highlighted in **Section J** and detailed in **APPENDIX N**.



ACADEMIC QUALITY

D. OVERVIEW OF ACADEMIC QUALITY OF THE DEPARTMENT OF SPEECH, LANGUAGE, AND HEARING SCIENCES

D.1. Reputational and Outcome Indicators

The University of Arizona SLHS Department emerged as a national leader in speech, language, and hearing sciences in the 1970s, and has retained distinction since that time. The deliberate focus on recruiting an impressive group of scientists in our field was part of the larger university shift to become a research-intensive institution. It is important to note that strength has been maintained across a broad range of content areas, with robust basic and translational research.

National Program Rankings



University of Arizona graduate programs in SLHS have a long-standing history as top-ranked programs.

Ever since national rankings for graduate programs began in the 1980s, our programs have always been rated among the best in the nation. The most recent rankings from U.S. News and World Report for Best Speech Pathology Schools place our graduate program 7th out of 249 accredited programs. The graduate program in Audiology was 9th out of 74 on the rankings for **Best Audiology** Schools. These rankings reflect the strong, positive view of our programs from our peers, and we benefit from this national reputation when we recruit graduate students and new faculty members.

Our faculty includes leading researchers in each of our focused areas of speech, language, and hearing, as well as an excellent cadre of clinical educators. We highlight below recent indicators of quality that are also evident in faculty biosketches (APPENDIX P).

Faculty Prestige and Honors

- Honors of the American Speech-Language-Hearing Association, highest recognition in our field
 - Elena Plante received this most prestigious honor in 2018
 - **Frank Musiek** also received ASHA honors (2010), along with eight <u>Emeritus faculty</u> <u>members</u>.
 - With 10 recipients of the ASHA Honors, the University of Arizona is second only to the University of Iowa.

- Fellows of the American Speech-Language-Hearing Association
 - **Nicole Marrone** was named ASHA Fellow in 2020, joining other current SLHS faculty who are Fellows (**Beeson, Cone, DeRuiter, Hoit, Musiek, and Plante**)
- Fellows of the Acoustical Society of America
 - Huanping Dai became Fellow of the Acoustical Society of America in 2013, joining Brad Story, 2008
- Fellow of the Robert Wood Johnson Foundation
 - o Mark DeRuiter, 2019
- Excellence in Diversity Award, Council of Academic Programs in Communication Science & Disorders
 - Leah Fabiano-Smith, 2018
- Dorothy Dreyer Award for Volunteerism, American Speech, Language, Hearing Association
 Mark DeRuiter, 2019
- Rossing Prize in Acoustics Education, Acoustical Society of America
 - o Brad Story, 2016
- Willard R. Zemlin Memorial Lecture, ASHA Convention, Honoree/Lecturer
 Brad Story, 2013
- Clinical Practice Research Institute Scholar, American Speech-Language Hearing Association
 Nicole Marrone, 2018
- Appointed Committee Member, National Academy of Sciences, Engineering, and Medicine (Accessible and Affordable Hearing Health Care for Adults)
 - o Nicole Marrone, 2015-2016
- Editor's Awards
 - Language, Speech & Hearing Services in Schools, Elena Plante, 2016
 - Journal of Speech, Language, & Hearing Research, Elena Plante, 2013
 - o Journal of Speech, Language, and Hearing Research, Nicole Marrone, 2007
 - o Language, Speech & Hearing Services in Schools, Elena Plante, 2006
- Distinguished Alumni Awards
 - Distinguished Alumn Award, Communication Sciences and Disorders, University of Iowa, Brad Story, 2018
 - Distinguished Young Alumni Award, Purdue University College of Health and Human Services, Department of Speech, Language, and Hearing Sciences, Meghan Darling-White, 2018
- Erskine Fellow, University of Canterbury, Christchurch, New Zealand, Barbara Cone, 2010, 2015
- Larry Mualdin Award for Excellence in Clinical Teaching, **Tom Muller**, 2012

University of Arizona Awards

- College of Science Galileo Circle Fellows: Jenny Hoit, 2017, Brad Story, 2008, Elena Plante, 2003
- College of Science Copernicus Award: Cass Faux, 2018
- College of Science, Distinguished Career Teaching Award: Pagie Beeson, 2012
- College of Science, Curie Award, Nicole Marrone, 2020
- University of Arizona College of Science Dean's Innovation Award: Aneta Kielar, 2019-2020
- University of Arizona College of Science Dean's Innovation Award: Jessica Brown, 2019-2020
- University of Arizona College of Science Dean's Innovation Award: Nicole Marrone, 2019-2020
- Excellence in Undergraduate Mentoring Award, Honors College: Julie Miller, 2017

Student Recognition and Awards

Our students have received recognition at all levels including international, national, university, departmental and local community awards (see Appendix F for detailed list). Some of the national scholarships have included those associated with our professional organizations. A few examples include Bryan Wong as recipient of the 2019 American Speech-Language-Hearing Foundation Graduate Minority Student Scholarship and Trianna Oglivie as recipient of the American Speech-Language-Hearing Foundation New Century Scholars Award in 2018. Our students have also demonstrated excellence in research as recipients of



Dr. Marrone and Alyssa Everett (PhD, 2020) at the American Auditory Society Conferece. Recipients of American Auditory Society Mentored Student Research Poster Award.

several travel and presentation awards (see photo above). These successes demonstrate not only the excellence of our student researchers, but the efforts of our faculty supporting student research endeavors. We are proud of these student awards and honors as they represent the achievements of our department's students in the areas of research, teaching, and service. We would also like to recognize the diverse experiences of our students in their educational pusuits. The persistence, growth, and integrity of two of our students have been recently acknowledged through the Centennial Achievement Award, presented to graduate student, Genesis Hernandez (2019), and undergraduate student, Armando Ramirez (2020). In **Figure D.1.**, we highlight the aggregated totals of our student awards by type across all levels within our department. This figure shows an estimated 322 awards during the study period with 18.6% of those at the national level.



FIGURE D.1. Counts of undergraduate and graduate student awards (2012-2019).

D.2. Comparison to Top Public Institutions

We selected six public institutions that are AAU members with strong graduate programs in Speech-Language Pathology and in Audiology to provide comparison to our program. As shown in **TABLE D.2.a.**, the selected programs are rated highly by their peers as reflected by the most recent *U.S. News and World Report* rankings for Graduate Programs in Speech-Language Pathology and in Audiology, and they all have Ph.D. programs. Two of the comparison programs are also land-grant institutions, like the University of Arizona, but no other program was also designated by the U.S. Department of Education as a minority serving institution.

	2019 US News	Ranking ¹			Hispanic Serving Institution⁴	
Institution	Speech-Language Pathology (of 249 progams)	Audiology (of 76 programs)	AAU Membership ²	Land-Grant Institution ³		
University of Iowa	1	2	Yes	No	No	
University of Wisconsin –	3	17	Yes	Yes	No	
Madison						
Purdue University	5	13	Yes	Yes	No	
University of Pittsburgh	7	7	Yes	No	No	
University of Texas - Austin	7	13	Yes	No	No	
University of North	12	4	Yes	No	No	
Carolina - Chapel Hill						
University of Arizona	7	9	Yes	Yes	Yes	

TABLE D.2.a. Aspirational Peers Rankings, Affiliations, and Designations

¹<u>U.S. News & World Report Best Grad Schools</u>

² Association of American Universities Member List

³ Association of Public Land-Grant Universities

⁴ U.S. Department of Education Designation

TABLE D.2.b. Indicators of Faculty Productivity*

Pe Institution P		eviewed cations	Citations		Grant Expenditures		Published Books		Major Faculty Awards	
	2015	5-2018	2014-2018		2014-2018		2009 - 2018		Varies by award	
	Total	per Fac	Total	per Fac	Total	per Fac	Total	per Fac	Total	per Fac
U Iowa										
TT Fac = 14	190	13.57	1515	108.21	\$2,537,751	\$181,268	3	0.21	11	0.79
U Wisc -Madison										
TT Fac = 13	242	18.62	1882	144.77	\$6,461,357	\$497,027	3	0.23	18	1.38
Purdue U										
TT Fac = 18	229	10.9	2284	108.76	\$5,005,969	\$238,379	11	0.52	16	0.76
U Pittsburgh										
TT Fac = 21	276	15.33	3067	170.39	\$5,969,157	\$331,620	9	0.50	10	0.56
U Texas - Austin										
TT Fac = 8	95	11.88	1016	127.00	\$872,051	\$109,006	3	0.38	6	0.75
UNC - Chapel Hill										
TT Fac = 21	151	7.19	1175	55.95	\$5,674,219	\$270,201	3	0.14	9	0.43
U Arizona										
TT Fac = 15*	140	9.33	991	66.07	\$3,747,311	\$249,821	23	1.53	11	0.73
Rank of 7	6	6	7	6	5	4	1	1	3	5

*Uses default time window for Academic Analytics 2018 Comparative Database

TABLE D.2.b. provides information regarding tenure-eligible faculty productivity in relation to our peers culled from Academic Analytics by the <u>University Analytics and Institutional Research (UAIR) office</u>. Faculty sizes of the comparison programs ranged from 8 to 21, with our cohort in the mid-range at 15 [14 tenure-eligible + 1 non-tenure Professor (Musiek)]. On the selected scholarship indicators, we performed in the mid- to low-end of this cohort, so this comparison group is appropriately aspirational. We note, however, that the performance indicators are lower than the time of the last APR review, when our faculty distribution included more members in the mid-career range. In other words, we aspire to regain our own level of productivity as our junior faculty continue to advance their careers. We are committed to the support and retention of our faculty.

An area of exceptional productivity is the category of book publications. Book authors in our department include Plante, Beeson, Hoit, & Musiek, with several textbooks published in multiple languages (Plante & Beeson; Musiek). These contributions, along with authorship of standardized tests (Plante) certainly reflect significant international influence on the scholarship in our field.

Given the delay in this APR review, we requested the most current data available from Academic Analytics from the UAIR office to examine our recent scholarship metrics. The data from 2019 documented an additional 39 peer-reviewed publications and 459 more citations from our 15 faculty in the database, which reflects an annual average of 2.6 publications and 30.6 citations per faculty member for that year. We provide an updated report on external and internal grant funding in the following section about faculty (see **TABLE E.2.a.**)





E. FACULTY

E.1. Overview of Research and Scholarly Contributions

We have an exceptionally strong group of faculty members who are highly productive in research and scholarly contributions to the field. Our faculty address broad-ranging and diverse areas of speech, language, and hearing and associated disorders, and there is dynamic overlap in a number of areas. In reviewing the collective research within the Department, the boundaries that define speech, language, and hearing naturally blur as evidenced by collaborations across research labs. Here we briefly highlight the work of our academic faculty and their areas of expertise, which demonstrates the breadth of scholarship.



Speech, Language, and Hearing Sciences Faculty, December 2019

The study of language development and language disorders has always been a strength of the University of Arizona SLHS. **Professor Elena Plante** is a world leader in the study of the neurobiology of language and its relation to developmental language disorders. Her work has informed understanding of the neural basis of developmental language disorders, as well as addressing assessment issues and treatment paradigms for children and adults with underlying language impairment. **Professor Mary Alt** conducts research regarding early language learning and treatment, with a particular emphasis on the development of conceptual knowledge that supports language development. Her research contributes significantly to fundamental knowledge regarding language acquisition, disorders of language and learning, dyslexia, and bilingualism. **Associate Professor Leah Fabiano-Smith** is a leader in the study of the phonological development in young bilingual/multilingual children, working to clarify assessment issues relevant to language difference versus language disorder. Her research informs clinical issues relevant to culturally and linguistically diverse populations. **Assistant Professor Leah Kapa** brings a background in child development. She examines the development of self-regulatory (internal) speech

and executive planning in preschoolers and middle-schoolers with and without developmental language disorder.

In the area of adult language, **Professor Pélagie Beeson** is a major contributor to the understanding of the nature and treatment of acquired impairments of spoken and written language. Her work in the development of evidence-based practice in aphasia rehabilitation is internationally recognized. **Assistant Professor Aneta Kielar** examines the neural support for language and language recovery. Using a multimodal approach that includes neuroimaging paradigms, she aims to elucidate how neural plasticity can be harnessed to maximize recovery of language. **Assistant Professor Jessica Brown (Walker)** is focused on problems faced by adolescents and adults with acquired impairments of language and cognition. With particular expertise in concussion and mild traumatic brain injury, Dr. Brown examines behavioral assessment paradigms and evaluates a range of augmentative and alternative support systems to enhance quality of life after brain injury.

The University of Arizona has a long tradition of leadership in speech science that has continued to increase the depth and breadth of research regarding the speech mechanism. Professor Jeannette Hoit has long been a leader in the area of speech physiology. Her work provides unique insight into the interplay between ventilation and speech production, as well as examining the consequences of respiratory disorders and motor control for speech. Professor Brad Story, who came to the field from physics and engineering, receives international recognition for his computational model of the mechanics, aerodynamics, and acoustics of the speech production system. His innovative work provides a means to model normal speech production in adults and children as well as speech and voice disorders. Associate Professor Kate Bunton conducts research on mechanisms that link anatomy and physiology to speech sound production. Her work has strong translational value to clinical populations, integrating perceptual and instrumental measurements. Associate Professor Robin Samlan brings expertise in treatment research for the clinical management of voice and voice disorders. She explores the aging voice in relation to frailty syndrome and communication dyads in older adults, with interdisciplinary collaborations in otolaryngology and audiology. Assistant Professor Meghan Darling-White brings complementary expertise in the broad area of neuromotor speech disorders, and a focus on speech production in children with cerebral palsy and those with Down syndrome. Her funded research examines the adequacy of respiratory function in relation to the other speech production subsystems (phonation and articulation). Assistant Professor Julie Miller has a shared appointment with Neuroscience and SLHS. Her research is directed toward understanding the neural mechanisms that contribute to bird song production and learning in the male zebra finch. This avian model of motor control has the potential to inform understanding human vocal pathology, such as that associated with



Speech, Language, and Hearing Sciences Audiology Faculty, Graduation Ceremony, 2017

Parkinson disease.

In the auditory domain, **Professor Barbara Cone** has led the field in the use of electrophysiological measures and behavioral methods to understand the auditory perceptual abilities of infants and children. Her work has contributed to the development of testing methods that can be used clinically. **Professor Frank Musiek** is an international expert in the anatomy and physiology of the auditory mechanism. His research has strong clinical application, including the advancement of our understanding and management of auditory processing disorders. **Associate Professor Huanping Dai**, trained in engineering and experimental psychology, develops computational models that can predict listener performance in auditory perceptual tasks. This work has great potential for application to individualized processing strategies for hearing aids. **Associate Professor Nicole Marrone** has emerged as an international leader in audiologic rehabilitation for adults with hearing impairment and their families. Her lab-based and community-engaged research has direct clinical applications and can be viewed through a public health lens serving populations experiencing healthcare disparities.

In sum, the UA SLHS faculty represent excellence in research with breadth and depth across a number of areas: the neurobiology of language and neurogenic communication disorders, language and conceptual development across monolingual and multilingual populations, principles of behavioral treatment, foundational speech science and the nature and treatment of speech disorders, pediatric auditory physiology and processing, diagnostics and audiologic rehabilitation across the lifespan.

E.2. Current and Pending Grants

Our external funding portfolio is currently about \$11 million dollars, with another \$1 million dollars from internal sources (TABLE E.2.a). There is another \$15.6 million dollars in pending proposals (see TABLE E.2.b.). This includes primarily NIH grants through the R01 and R21 mechanisms. We had three pre-/post-doctoral NIH fellowship awards during this period, and several others at various stages of preparation.

Faculty (Role)	Funding	Amount	Funding	Project Title
	Source/Type	FUNDED	period	
Funded External Gra	ints			
Plante (Co-PI) Alt (Co-PI)	NIH/NIDCD R01	\$3,034,610	07/01/16 - 06/30/21	Identification of Treatment Parameters that Maximize Language Treatment Efficacy for Children
Fabiano-Smith (PI)	NIH/NIDCD R01	\$2,933,140	09/01/18 - 08/31/23	Assessment of Speech Sound Disorders in Latino Preschoolers: An Evidence Based Procedure
Alt (Co-I) Scherer (PI)	Subcontract, Arizona State Univ NIH/NIDCD R01	\$1,306,438	07/01/18 - 06/30/19	Profiles of Working Memory for Educational Research
Alt (Co-I) Gray (PI)	Subcontract, Arizona State Univ US Dept. of Ed.	\$1,173,890	01/01/20 - 12/31/24	Preparing Researchers in Early Intervention for Children with Disabilities from Multicultural Environments
Samlan (PI)	NIH/NIDCD R21	\$460,500	08/13/18 - 07/31/21	Improving Voice Production for Adults with Age-related Dysphonia
Story (Co-I) Titze (PI)	University of Utah (Sub award for NIH/NIDCD RO1)	\$346,338	05/01/2019- 04/30/2024	Voice Source and Airway Interaction in Normal and Hyperfunctional Speech
Darling-White (PI)	NIH/NIDCD R21	\$451,641	08/05/16 - 07/31/19	Respiratory Function During Speech Production in Children with Cerebral Palsy
Musiek (PI)	Royal Arch Research Assistance Inc.	\$272,265	10/01/14 - 09/30/19	Studies of Specific Intervention and Diagnostic Protocols for CAPD
Hoit (MPI) Whittaker (PI)	NIH/ Nat'l Inst of General Medical Sciences	\$10,000 (of \$1,109,193)	Awarded, TBD	A Train-the-Trainers Approach to Developing a Diverse and Successful Workforce in Behavioral and Biomedical Sciences
Brown (PI)	U of Miami (Sub award for NIH/NIDCD RO1)	\$ 81,822	09/21/17- 09/31/20	Strategies to Accommodate Reading in Aphasia: Using Assistive Technology to Support Reading by People with Aphasia
Privette, Chelsea (PI) Fabiano-Smith (Mentor)	NIH/NIDCD NRSA Predoctoral Fellowship (F31)	\$90,032	06/2019- 05/2021	The Misdiagnosis of Speech Sound Disorders in Spanish-Speaking Preschoolers Acquiring African American English
Hall, Jessica (PI) Plante (Mentor)	NIH/NIDCD Post-doctoral fellowship (F32)	\$181,118	09/2018- 09/2021	Probabilistic Learning in Developmental Language Disorder
Coco, Laura (PI) Marrone (mentor)	NIH/NIDCD Post-doctoral fellowship (F32)	\$ 236,390	07/2018- 06/2021	Community Health Workers and Teleaudiology as a Culturally Relevant Approach to Improving Access to Hearing Health Care
Marrone (PI)	PCORI	\$ 368,747	10/01/19- 06/30/22	Building Research Capacity on Hearing Loss Interventions in Hispanic/Latinx Communities
Hawley (PI)	UA Foundation	\$ 4,850	07/01/19 – 06/30/20	Transwomen Communicating with Confidence (TRACC)

TABLE E.2.a. Current Funded Grants (updated to include 2020)

Coco, Laura (PI) Marrone (mentor)	UA Foundation	\$ 18,800	06/06/19 – 09/30/21	Arizona Teleaudiology Collaboration
Subtotal		\$10,970,691		
Funded Internal Gra	nts			
Alt & Plante (Co-	UArizona	\$20,241	2019-2020	One World, Many Words
ls)	Research,			
	Discovery,			
Kana R Alt (Cala)	Innov	¢11 700	2010 2020	Co Topphing Mini Cront UMrizono Vico
Kapa & Alt (CO-IS)	Office of Vice	\$11,790	2019-2020	Provost and AAU/Northrun Grumman
	Provost			Foundation
Kana (PI)	BIO5 Faculty	\$14 914	2020-2021	Effects of Martial Arts Intervention on
	Seed Grant	Ŷ1,911	2020 2021	Executive Function among At-risk Youth
Kielar (PI)	BIO5 Institute	\$80,451	2019-2021	Development of a Personalized Non-Invasive
	Team Scholars			Neurostimulation Protocol for Treatment
				of Language Deficit in Post-Stroke Aphasia
Marrone (PI)	Dean's	\$10,000	2019-2021	Hearing Aid Verification via
	Innovation &			Neurophysiologic Bio-markers of Speech-
	Education Fund			in-Noise and Teleaudiology
Kielar (PI)	Dean's	\$10,000	2019-2021	Individualized Neuromodulation Protocol for
	Innovation &			Treatment of Language Deficits in Stroke-
	Education Fund			Related Aphasia
Brown (PI)	Dean's	\$7,500	2019-2021	Evaluation of Early Cognitive Intervention
	Innovation &			Methods for Individuals with Mild
	Education Fund			Traumatic Brain Injury
Story (PI)	College of	\$10,000	2019-2021	Galileo Circle Fellows Grant
	Science			
		644 435 507		
Total All Grants		\$11,135,587		

TABLE E.2.b. Pending Grants

Faculty, Role	Funding	Amount	Funding	Project Title
	Source/Type	FUNDED	period	
PENDING GRANT	ſS			
Kielar (PI) Beeson (Co-I) Patterson (Co-I)	NIH/NIDCD (RO1)	\$3,639,350	04/01/2021 – 03/31/2026	Stimulating Cortical Responsiveness and Functional Connectivity for Language in Primary Progressive Aphasia (PPA) with rTMS
Plante (PI) Alt (Co-PI)	NIH/NIDCD (RO1)	\$3,732,150	07/01/2020- 06/30/2025	Identification of Treatment Parameters that Maximize Language Treatment Efficacy for Children
Kielar (PI) Beeson (Co-I) Patterson (Co-I)	NIH/NIDCD (RO1)	\$2,019,994	09/01/2020 – 08/31/2024	Predicting past-tense inflection deficit in post-stroke aphasia from the underlying phonological and semantic impairments: Evidence from behavioral measures and electrophysiology.
Alt (PI)	NIH/NIDCD (RO1)	\$3,081,349	06/01/2021- 05/31/2026	Testing principles of statistical learning through evidence-based expressive vocabulary treatment for bilingual late- talking toddlers.
Walker (PI)	Natl. Inst. Of Child Health and Human Devel.	\$2,215,812	04/01/2021- 03/31/2024	Multidimensional Evaluation of Cognitive Performance (MECP)
Miller (PI) Samlan (Co-I)	NIH/NIDCD (R21)	\$275,000	04/01/2020- 03/31/2022	Age-Related Changes in Vocal Motor Production, Brain Circuitry and Sensitivity to Parkinson's Disease
Miller (PI)	Banner Health System	\$ 46,050	07/01/2020- 06/30/2021	Neurogenetics of Aging Vocalizations
Miller (PI)	American Parkinson's Disease Association	\$ 75,000	07/01/2020- 06/30/2021	Investigating Alpha-synuclein Neuropathology in Vocal Production Deficits in Parkinson's Disease
Miller (PI)	NIH/NIDCD (R21)	\$ 275,000	07/01/2021- 06/30/2023	Alpha-synuclein driven cellular changes and vocal dysfunction in Parkinson's Disease
Miller (PI) Samlan (Co-I)	NIH/NIDCD (R21)	\$ 275,000	07/01/2021- 06/30/2023	Vocalizations and the Aging Brain
Sum PENDING Grants		\$15,634,705		

As noted earlier, we experienced a decline in grant expenditures over the past seven years that related in part to the loss of four mid-career faculty who had achieved funding and were replaced by more junior faculty members who were not yet funded. The decline is evident in **Figure E.2.a** (left) which depicts grant expenditures by year per academic faculty FTE. SLHS funding level per FTE is currently on par with Psychology and remains stronger than Neuroscience and Linguisitics. It is important to note that the number of grant submissions has remained high as depicted in **Figure E.2.a**.(right) indicating strong, continued faculty efforts to obtain funding.





TABLE E.2.c. Grant Expenditures by Tenure-Track Faculty FTE with Comparison Departments

Unit		FY 13	FY 14	FY 15	FY 16	FY 17	FY 18	FY 19
Psychology	Tot Expend	\$3,133,080	\$2,899,826	\$2,859,324	\$3,331,781	\$3,549,609	\$3,774,886	\$3,510,452
	Faculty	FTE 26.74	FTE 27	FTE 23	FTE 27	FTE 29	FTE 27.5	FTE 28.5
	Expend/FTE	\$ 117,168	\$ 107,401	\$ 124,318	\$ 123,399	\$ 122,400	\$ 137,269	\$ 123,174
Neurosci	Tot Expend	\$ 213,179	\$ 154,483	\$ 191,781	\$ 175,209	\$ 156,814	\$ 116,847	\$ 114,106
	Faculty	FTE 6	FTE 6	FTE 7	FTE 8	FTE 8	FTE 9	FTE 8
	Expend/FTE	\$ 35,530	\$ 25,747	\$ 27,397	\$ 21,901	\$ 19,602	\$ 12,983	\$ 14,263
Linguistics	Tot Expend	\$417,033	\$312,857	\$212,261	\$508,241	\$461,114	\$320,248	\$214,355
	Faculty	FTE 13.4	FTE 13.8	FTE 13.4	FTE 13.9	FTE 14.6	FTE 14.27	FTE 16
	Expend/FTE	\$ 31,122	\$ 22,671	\$ 15,840	\$ 36,564	\$ 31,583	\$ 22,442	\$ 13,397
SLHS	Tot Expend	2,984,509	\$2,317,243	\$2,876,715	\$2,452,919	\$2,452,919	\$1,635,859	\$1,711,586
	Faculty FTE	FTE 13	FTE 14	FTE 14	FTE 13	FTE 12	FTE 13	FTE 13.8
	Expend/FTE	\$ 229,578	\$ 165,517	\$ 205,480	\$ 188,686	\$ 204,410	\$ 125,835	\$ 124,028

E.3. Faculty Leadership and Influence in the Academic Profession

The SLHS faculty are actively involved our professional organizations, and many of our faculty play prominent leadership roles in the field as a whole, and make significant contributions on local, national, and international fronts. The biosketches in **APPENDIX P** provide information about individual faculty, which is highlighted here:

Grant Review Panels

Nearly all of the senior faculty have served, or are currently serving, as regular members on the National Institutes of Health Scientific review panels in our fields.

- Study Section Standing Committee Member, National Institutes of Health
 - o Language and Communication (LCOM), Plante, 2012 2018
 - o Motor Function, Speech, & Rehabilitation, Story, 2012-2014
 - Language and Communication (LCOM), **Beeson**, 2006-2011
 - o Biobehavioral and Behavioral Processes (BBBP-7), Hoit, 1999-2003
- Ad Hoc Scientific Grant Reviewers, National Institutes of Health
 - o Cognition and Perception Study Section, National Institutes of Health, Alt
 - o Language and Communication (LCOM) Study Section, Alt, Beeson
 - o Motor Function, Speech, and Rehabilitation Study, Story
 - NIH/NIDCD Special Emphasis Panels, Beeson, Fabiano-Smith, Marrone
 - NIH/NIDCD Communication Disorders Review Committee, Alt, Beeson, Story
 - NIH VSL Clinical Trial Review, Alt
 - o ZGM1 RCB-3 (2B, 3C) review panel, National Institute of General Medical Sciences, Alt
- Other Review Panels
 - o ASHA New Century Scholar's Program, Alt, 2015
 - o ASHA Students Preparing for Academic Research Careers Award, Alt, 2014, 2017
 - o ASHA Advancing Academic Research Careers Award, Alt, 2013-2019
 - ASHFoundation Student Research Grant in Early Childhood Language Development, Alt, 2012

National Service

- Elected National Positions
 - Vice President, American Speech-Language-Hearing Association Research and Scientific Affairs, Plante, 2019-2021
 - Coordinating Committee, American Speech-Language-Hearing Association Special Interest Group 2, Brown, 2018-present
 - President, Council of Academic Programs in Communication Sciences and Disorders, DeRuiter, 2018
 - Vice President for Professional Development, Council of Academic Programs in Communication Sciences and Disorders, **DeReuiter**, 2015
 - Vice President for Academic Affairs in Audiology, Board of Directors, American Speech-Language and Hearing Association, **Cone**, 2014-2016
- National Committee Membership
 - American Congress of Rehabilitative Medicine Stroke Working Group, **Brown**, 2019-now
- Academic Affairs Board, American Speech-Language and Hearing Association, Cone, 2018present
- o ASHA Council for Clinical Certification, Muller, 2018-present
- o ASHA Committee on Clinical Specialty Certification, Muller, 2018-present
- American Congress of Rehabilitative Medicine, Mild Traumatic Brain Injury Working Group, Brown, 2018-present
- Chair, Membership Committee, Academy of Neurological Communication Disorders and Sciences, **Brown**, 2018-present
- o Books+ Committee, Acoustical Society of America, Story, 2015-present
- Co-Chair, Arizona Speech-Language-Hearing Association (ArSHA) Culturally and Linguistic Diversity Committee, Hernandez, 2018-present
- Technical Committee, Musical Acoustics, Acoustical Society of America, **Story**, 2008-present
- Technical Committee, Speech Communication, Acoustical Society of America, Bunton, 2008present
- Professional Development Manager, Appointed position by Special Interest Group 7: Aural Rehabilitation and its Instrumentation, American Speech-Language-Hearing Association, Marrone, 2018-2020
- Council on Academic Programs in Communication Sciences and Disorders Critical Thinking Task Force, Muller, 2018-2019
- Vice-Chair of Audiology for the Council for Clinical Certification: American Speech-Language-Hearing Association, **Tom Muller**, 2018
- National Committee on Audiology Clinical Assessment, Muller, 2017-2018
- Associate Coordinator, Coordinating Committee for Special Interest Group 7: Aural Rehabilitation and its Instrumentation, American Speech-Language-Hearing Association, Marrone, 2017
- Membership Committee, Academy of Neurological Communication Disorders and Sciences, Brown, 2016-2018
- Academy of Neurologic Communication Disorders and Sciences (ANCDS) Dysarthria Writing Committee, Hoit, 2016-2017
- Technical Committee, Psychological & Physiological Acoustics, the Acoustical Society of America, Dai, 2015-2018
- Coordinating Committee for Special Interest Group 7: Aural Rehabilitation and its Instrumentation, American Speech-Language-Hearing Association, Marrone, 2015-2017
- Appointed to Committee on the Accessibility and Affordability of Hearing Health Care, National Academies of Sciences, Engineering, and Medicine, Marrone, 2015-2016
- o Chair, Stetson Scholarship Committee, Acoustical Society of America, Bunton, 2015-2016
- Scientific Review Committee of the Eurospeech/InterSpeech, **Story**, 2014-2016
- Continuing Education Committee for Special Interest Group 6: Hearing and Hearing Disorders: Research and Diagnostics, American Speech-Language-Hearing Association, Marrone, 2012-2015
- Council of Academic Programs in Communication Sciences and Disorders Treasurer, Council of Academic Programs in Communication Sciences and Disorders, **DeReuiter**, 2012-2014
- o Stetson Scholarship Committee, Acoustical Society of America, Bunton, 2012-2014
- Chair, Nominating Committee, Council for Clinical Certification, American Speech-Language-Hearing Association, **DeRuiter**, 2012, 2016
- Co-Coordinator and Research Committee Chair, Coordinating Committee, American Speech-Language-Hearing Association Special Interest Group 11 - Administration and Supervision, DeRuiter, 2011-2013

- Psychological and Physiological Technical Committee, Acoustical Society of America, Marrone, 2010-13
- Chair, Lessons for Success Conference Faculty, ASHA, Plante, 2010-2012
- o External Advisory Committee, C-MIND contract, NICHD, Plante, 2009-2013
- Speech Communication Technical Committee, Acoustical Society of America, Bunton, 2008-2014

Editorial Positions on Professional Journals and Monograph Series

- Current Editorial positions
 - Editor-in-Chief, Perspectives, ASHA SIG Groups 6, 7, 8 and 9 (audiology and hearing science), Cone, 2019-2021
 - Editorial Board, Recent Advances in Otolaryngology and Rhinology, Scholer, 2019-present
 - Editorial Board, Journal of Speech, Language, and Hearing Research, Kapa, 2019- present
 - Editor, Language Section for Journal of Speech, Language, and Hearing Research, Alt, 2019present
 - o Editorial board, Journal of Child Language, Fabiano-Smith, 2018-present
 - Associate Editor, Journal of the Acoustical Society of America Express Letters, Story, 2018present
 - Ad-hoc Editor, *American Journal of Speech-Language Pathology*, **Fabiano-Smith**, 2018present
 - Editorial Board Member, Journal of Clinical and Diagnostic Pathology, **Brown**, 2016-present
 - Associate Editor, Journal of Speech, Language, and Hearing Research, Bunton, 2011-present
 - Associate Editor, Journal of the Acoustical Society of America, Story, 2001-present
- Recent Editorial positions
 - Associate Editor, Voice and Voice Disorders section, Perspectives of the ASHA Special Interest Groups, Samlan, 2018
 - o Editorial Board, Journal of Speech, Language, and Hearing Research, Alt, 2017-2018
 - Associate Editor: Language, Speech, and Hearing Services in Schools, Alt, 2012-2016
 - Editorial Board Member, *Journal of Speech, Language, and Hearing Research-Speech,* **Bunton,** 2017-2018
 - Editorial Board of the Journal of Speech, Language, and Hearing Research (Hearing section), Marrone, 2017
 - o Editor, American Journal of Speech-Language Pathology, Hoit, 2017
 - Associate Editor, Language, Speech, and Hearing Services in the Schools, Alt, 2012-2016
 - Associate Editor-Speech, Journal of Speech, Language, and Hearing Research, Bunton, 2011-2016
 - o Associate Editor, Journal of the Acoustical Society of America, Story, 2011 2014
 - o Guest Editor, American Journal of Speech-Language Pathology, Bunton, 2018-2019
 - Guest Editor, Special Issue of Language, Speech, and Hearing Services in the Schools on Statistical Learning, Alt, 2017-2018
 - Guest Associate Editor, American Journal of Speech-Language Pathology, Bunton, 2011-2012

National/International Conference Committees

- ASHA Annual Convention Program Committee: Autism, Casteix, 2020
- ASHA Annual Convention Program Committee: Hearing, Balance, Tinnitus Assessment and Intervention: Adult, **Marrone**, 2020
- ASHA Annual Convention Program Committee: Health Communication and Health Literacy, Marrone, 2019

- Chair, International Conference on Vocal Fold Physiology and Biomechanics (ICVPB), **Story**, 2013-present
- Clinical Aphasiology Conference Program Committee, Beeson, 2019
- Clinical Aphasiology Conference Program Committee, Kielar, 2019
- American Auditory Society Program Committee, Musiek, 2018
- 6th and 7th International Pediatric Feeding Disorders Conference Coordinating Committee, Casteix, 2017-2020
- ASHA Annual Convention Program Committee: Aural Rehabilitation for Adults, Marrone, 2018
- ASHA Annual Convention Program Committee: Traumatic Brain Injury, Brown, 2017
- ASHA Connect Conference Health Care & Private Practice Program Committee Chair, **Brown**, 2017
- ASHA Annual Convention Program Committee: Speech Sound Disorders, Fabiano-Smith, 2016
- Chair, Academy Research Conference, AAA, Musiek, 2016
- Conference reviewer, 20th International Conference on Biomagnetism (BIOMAG), Kielar, 2016
- ASHA Annual Convention Program Committee: Voice & Alaryngeal Communication, Samlan, 2015
- ASHA Annual Convention Program Committee: Communication Sciences, Alt, 2015
- ASHA Annual Convention Program Committee: Cultural and Linguistic Considerations Across the Discipline, Fabiano-Smith, 2014
- Scientific Review Committee of the Eurospeech/InterSpeech, **Story**, 2014-2016
- Technical Program Committee, 3rd Conference on Psychology and Social Harmony, **Dai**, 2013, 2014, 2015, 2017
- ASHA Annual Convention Program Committee: Speech Science, Bunton, 2014
- ASHA Convention Program Committee: Infant/Toddler, Alt, 2013
- Co-chair, American Academy of Audiology Global conference, Musiek, 2012, 2013, 2014, 2019
- ASHA Annual Convention Program Committee: Speech Science, Samlan, 2012, 2013
- Chair, Conference on Motor Speech Disorders, Bunton, 2012-2014

E.4 Teaching Load and Activities

Our current faculty are listed in **TABLE E.4.a.** with recent classroom teaching responsibilities shown. The typical teaching load for academic faculty is two courses distributed across undergraduate and graduate levels when possible, along with a specialty seminar or course that does not convene each year. On average, this translates to 7.1 teaching credits per year of classroom teaching. Classroom teaching is also supported by career-track faculty as shown in **TABLE E.4.b.**

By way of update, the teaching distribution changed some since Spring 2019 with a few personnel changes. As Dr. Brad Story accepted the position of Associate Dean of the College of Science at .50 FTE in Spring 2020, he is no longer teaching in the classroom. Dr. Mark DeRuiter was recruited to another institution and departed in Summer 2020, so his teaching duties were distributed. To meet these needs, Dr. Kate Bunton took on a teaching overload to cover the Professional Issues and Counseling courses taught by Dr. DeRuiter. Other courses were taught by clinical faculty, adjunct lecuturer, and/or qualified PhD students teaching under a faculty mentor. Additional adjustments are in progress as Dr. Frank Musiek will retire at the end of the 2020-21 academic year (as noted in tables below).

Tenure-Track Faculty	Teaching
	SLHS Course Number & Name (Credits)
Mary Alt, PhD, CCC-SLP	441/541 Language Acquisition (3)
Professor	555 Dev Language Disorders (3)
Pélagie Beeson, PhD, CCC-SLP	207 Survey Human Comm & Disorders (3)
Professor/Dept Head	544 Adult Lang Disorders I: Aphasia (3)
Jessica Brown, PhD, CCC-SLP	543 Adult Lang Disorders II (TBI, RHD, Dementia) (3)
Assistant Professor	597 AAC workshop (2)
Kate Bunton, PhD, CCC-SLP	471/571 Speech Sound Disorders (3)
Associate Professor	572 Speech Disorders I (3)
	501 Professional Issues in SLHS (2) [2020]
	510 Counseling in Comm Disorders (1) [2020]
Barbara Cone, PhD, CCC-A	596G Cochlear Implants (3)
Professor	270 Scientific Thinking in SLHS (3)
	596B Pharmacology for Audiologists (3)
Haunping Dai, PhD	380 Hearing Science (4)
Associate Professor	562B Psychophysical Acoustics (3)
	565 Acoustics in Spch/Hring Sciences (3)
	581A Amplification I (3)
Meghan Darling-White, PhD, CCC-SLP	261 Anatomy & Physio of Spch Mech (4)
Assistant Professor	575 Neuromotor Speech Disorders (3)
	597 Pediatric Dysphagia (1) (Mentor)
Leah Fabiano-Smith, PhD, CCC-SLP	473 Comm Disorders II (3)
Associate Professor	535 Bilingual/Multcultural Dialects (3)
	597 Serv. Delivery Bilingual Populations (.5 of 1)
Jeannette Hoit, PhD, CCC-SLP	649 Survival Skills & Ethics (3)
Professor	(.50 FTE Director, UA Postdoctoral Affairs)
Leah Kapa, PhD	340 Language Science (3)
Assistant Professor	367 Phonetics (3)
	597 Introduction to Research (1)
Aneta Kielar, PhD	362 Neurobiology of Communication (3)
Assistant Professor	568 Speech Perception (3)
Nicole Marrone, PhD, CCC-A	255 Hearing, Health & Society (3) (with Aileen Wong, AuD)
Associate Professor	454/554 Audiologic Rehab: Lifespan (3)
Every L. Marciala, DL.D., CCC, A. To retire 6/2021	581B Amplification II (3)
Frank Muslek, PhD, CCC-A To Telle 0/2021	562A Anat/Physic of Auditory & Vestibular System (3)
Professor	[2020 w Brian Wong, PhD Candidate]
	500 Topics III NeuroAddiology (5)
Elona Planto PhD, CCC SLP	512 Evaluation Process in SLP (2)
Professor	512 Evaluation Process In SLP (5)
FIOLESSO	696a Seminar: Theories of Lang Disorders (3) PhD seminar
Robin Samlan PhD CCC-SLP	477 Communication Disorders 1 (3)
Associate Professor	574 Speech Disorders II (3)
Brad Story PhD	267 Acoustics for Speech & Hearing Science (3)
Professor/Associate Head	[2020 Barrett St. George PhD Candidate]
	567 Preclinical Speech Science (4)
	[2020 Amy LaCross, Ph.D. Adjunct Lecturer]

TABLE E.4.a. Classroom Teaching: Tenure-Track Faculty (2018 – 2019) [with 2020 changes noted]

Faculty	Teaching
David Valanovsky, PhD, CCC A	362 World of Sound (2)
Sonior Losturor	203 WOLL OF SOULD (5)
	405R&L/505R&L Philiciples of Audiology (5+1)
	500A/L Physiol Eval Aud System (4)
	588B Assessment & Rendb Of Balance (3)
	Sosk Auvaliced Audiologic Eval (S)
	595 Montheode (1)
Mark DeRuiter, PhD, MBA, CCC-A/SLP	497 Mapping Your Future: Planning for Your Career (1) [2020 Ogilvie]
Clinical Professor	501 Professional issues in SLHS (2) [2020 Bunton]
	510 Counseling in comm Disorders (1) [2020 Bunton]
	596J Practice Management (2)
Fadyeh Barakat, AuD, CCC-A Depart 2/2020	511 Tool School for Clinical Audiology (Rocketship) (1)
Clinical Assistant Professor	
Erica Hansen, AuD, CCC-A	587G Lab for Cochlear Implants (1)
Clinical Assistant Professor	
Thomas Muller, AuD, CCC-A	581C Practical Issues Amplification (1)
Clinical Associate Professor	584 Occupational & Comm Aud (1)
	795A Clinical Issues in Audiology (1-3)
	912 Clinical Externship oversight (6)
Norrix, Linda, PhD, CCC-A	586 Pediatric Audiology (3)
Clinical Associate Professor	589I Lab Advanced Audiologic Eval (1)
Aileen Wong, AuD, CCC-A	255 Hearing, Health, & Society [Co-Teach Sprg 2020; Primary Inst 2021]
Clinical Assistant Professor	559/659 Adult Hearing Assessment (1-3)
Jennifer Casteix, MS, CCC-SLP	597 Pediatric Dysphagia (1)
Clinical Associate Professor	
Kathleen Cazzato, MA, CCC-SLP	557 Dysphagia (3)
Clinical Assistant Professor	597 Medical SLP workshop (1)
Cass Faux Muller, MS, CCC-SLP Retire 2/2020	511 Tool School (.5 of 1)
Clinical Associate Professor	
Janet Hawley, MS, CCC-SLP	496a Adv. Clinical Observation & Writing (1)
Clinical Associate Professor	497/597 Accent Modification Workshop (1)
	511 Tool School (.5 of 1)
Rui Hernandez (Motoyoshi), MA, CCC-SLP	497/597 Topics in Delivery for Bilingual Populations (.5 of 1)
Clinical Assistant Professor	
Dori Scholer, DMA, MS, CCC-SLP	497/597 Vocal Health & Voice Use for the Classroom and Clinic (1)
Clinical Instructor	

TABLE E.4.b. Classroom Teaching: Career Track Faculty (2018 – 2019) [with 2020 changes noted]

All faculty are involved in student mentoring that includes credit-bearing enrollments, such as independent study, directed research, thesis, and dissertation (see **TABLE E.4.c.**). These values reflect the high level of undergraduate engagement with faculty that has been a long tradition within the department. Unique to SLHS, is the high student engagement in clinical education activities. As shown in **TABLE E.4.c.**, our clinical faculty are responsible for well over 250 graduate credit hours each year in supervised clinical practicum experiences. These year-round experiences include those that are directly supervised in our on-campus clinic and locations in the community where we provide contracted services (e.g., Banner University Medical Center), as well as local, national (and some international) clinical settings that are supervised by external professionals (preceptors). Arrangment and monitoring of the off-campus experiences are reflects an ongoing investment from our clinical faculty.

Learning Experience	Undergraduate	Graduate
Independent Studies	92	20
Undergraduate Preceptor	20	-
Clinical Studies (Practicum)	17	269
Clinical Externship	-	21
Directed Research	21	19
Undergraduate Honors Thesis	9	-
Master's Thesis	-	12
Audiology Doctoral Project	-	27
Dissertation	-	6
Total Student Credit Hours	159	374

TABLE E.4.c. Individualized Learning Experiences and Aggregated Student Credit Hours (2018-2019)

Faculty Participation in Mentoring Programs

Our faculty are also involved in an impressive array of mentoring programs, including those that aim to engage underrepresented minorities. Most of these programs include summer mentoring, and our faculty are involved regardless of summer salary support. University mentoring programs include:

- Arizona Science Engineering & Math Scholars (<u>ASEMS</u>): Marrone
- Biomedical Research Abroad: Vistas Open (BRAVO): Fabiano-Smith, Plante
- Border Latino and American Indian Summer Exposure to Reseach (<u>BLAISER</u>): Marrone, Miller
- Maximizing Access to Research Careers (MARC): Alt, Beeson, Miller, Plante
- Undergraduate Biology Research Program (<u>UBRP</u>) Mentors: Alt, Beeson, Cone, Fabiano-Smith, Kielar, Miller, Plante
- Undergraduate Research Opportunities Consortium (<u>UROC</u>): Beeson, Fabiano-Smith, Kielar, Miller

Summer coursework primarily is focused on clinical practica and research rotations, along with several classes that help undergraduate students matriculate through the degree in a timely manner, particularly if they select the major late (see **Section H.3.e.**)

Teaching Quality

SLHS has a long tradition of high-quality teaching. Student perception and peer review of teaching consistently affirms thoughtful, well-organized teaching by our faculty that reflects current knowledge in the field. Teaching styles are diverse across faculty members, reflecting a range of approaches among our cohort. The inclusion of active learning strategies has increased over the past decade, with many of our faculty involved in faculty learning communities to advance knowledge of the evidence base for effective teaching outcomes. As shown in **TABLE E.4.d.**, the average Teacher-Course Evaluation (TCE) rating for the effectiveness of our faculty instructors across the past 7 years is 4.25 out of 5 for both undergraduate and graduate level classes. This compares to average ratings for the College of Science of 4.11 and 4.38 for undergraduate and graduate levels, respectively, which are also very strong ratings.

<u> </u>					
	Undergradu	ate Students	Graduate Students		
	SLHS	Col of Science	SLHS	Col of Science	
Instructor teaching effectiveness	4.25 (0.93)	4.10 (1.02)	4.25 (0.89)	4.31 (0.85)	
	n = 9,331	n = 400,309	n = 7,744	n = 22,119	
% students responding	64.54%	65.31%	70.77%	78.31%	
Overall course rating	3.90 (1.05)	3.70 (1.13)	3.73 (1.06)	3.91 (1.00)	
	n = 8,700	n = 371,102	n = 5,746	n = 18,155	
% students responding	61.11%	60.54%	52.51%	64.27%	
Amount Learned	4.01 (0.93)	3.77 (1.02)	3.70 (1.03)	3.83 (0.99)	
	n = 8,688	n = 370,889	n = 5,763	n = 18,151	
% students responding	61.02%	60.51%	52.67%	64.26%	

TABLE E.4.d. Teacher and Course Evaluations for SLHS and College of Science (2013-2019)

Mean (SD) scores on 5-point scale, with 5 = the best. n = respondent count. Data provided by TCE office.

Teaching Enhancement Activities

Our faculty are consistently involved in activities to enhance their teaching skills. Since the inception of Faculty Learning Communities (FLC) in Fall 2013, SLHS has been actively involved. Thirteen (of 17) members of our academic faculty have been members of an FLC, and two have been FLC leaders (Bunton & Alt). Essentially all faculty members participate in peer-review of teaching, with one or more structured observations every year for all pre-tenure faculty. Senior faculty members serve as observers, but also seek peer evaluation. All faculty members compile a teaching portfolio for the promotion and tenure review process that is reviewed by our teaching review committee.

E.5 Faculty Recruitment and Planned Directions for Future Hires

TABLE E.5.a provides a summary of the chronology of tenure-track faculty who were hired, retired, resigned, and reviewed for promotion and tenure, and **TABLE E.5.b** is the complement for career faculty. In Fall 2012, we had **14 tenure-track faculty** and **13 career-track faculty** (2 Senior lecturers and 11 Clinical Faculty). Our goal was to add two-three tenure-eligible faculty to cover critical content areas, and we aimed to enhance our breadth and expertise in clinical education. As shown in **TABLE A.2**, we met those goals with current faculty headcount of **17 tenure-track** (16.1 FTE) and **16 career-track faculty** (1 Senior lecturer and 15 Clinical Faculty). The change over time is evident in **TABLE E.5.a**. and **TABLE E.5.b**., and the narrative that follows highlights the influence of personnel changes over the review period. The unavoidable loss of some faculty to other institutions occurred in four instances, and that was balanced by a total of seven new faculty hires over the review period. As shown in **TABLE E.5a**, six of the new hires were early in their academic careers, replacing individuals who were at or nearing mid-career. As noted above, some additional personnel changes occurred in 2020 that reduced our overall cohort. Detailed information regarding individual members of our faculty cohorts by year is included in **APPENDICES A and B**.

		FY 12/13	FY 13/14	FY 14/15	FY 15/16	FY 16/17	FY 17/18	FY 18/19
	Professor			Musiek 10/2014				
Hire	Associate Prof							
	Assistant Prof		Samlan 8/2013	Miller ^{*.40 FTE} 8/2014	Darling-White 8/2015	Kielar 8/2016	Brown 8/2017 Kapa 1/2018	
	Professor							
esign	Associate Prof			DeDe 6/2015		Lotto 6/2017		
R	Assistant Prof			Maas 6/2015	Wilson 6/2016			
ote	Professor	Story ^P						
Pron	Associate Prof		Dai ^{Ten} DeDe ^{P&T}		Bunton ^{Ten}		Marrone ^{P&T} Fabiano-Smith ^{P&T}	Samlan ^{P&T}

TABLE E.5.a. Summary of Tenure-Track Faculty Gains, Losses, and Promotions (Details in Appendix A)

Note P&T decisions become final in May of the academic year. P &T = Promotion and tenure granted. Ten = tenure granted. *Shared appointment with Neuroscience.

TABLE F.5.b. Summary	v of Career-Track Faculty	/ Gains, Losses	and Promotions	(Details in Annendix I	R)
TADLE L.J.D. Juilling	y of career-frack racuity	Uailis, LUSSES	, and Fromotions	Details in Appendix i	"

		FY	FY	FY	FY	FY	FY	FY
		12/13	13/14	14/15	15/16	16/17	17/18	18/19
	Clinical Professor						DeRuiter 7/2017	
0)	Clinical Assoc Prof							
Hire	Clinical Assist Prof		Adamovich 6/2013		Al-Jurf ^{FTE .49}	Cazzato 3/2017		Monahan 9/2018
	Clinical Instructor		Wong ^{.50} 6/2013			Hansen 7/2016 Barakat 7/2016 Motoyoshi 8/2016		Scholer 6/2018
	Senior Lecturer						Dean ^{RET} 5/2018	
	Clinical Professor							
letire	Clinical Assoc Prof							
Resign/F	Clinical Assist Prof	Kaplan DEP 7/2013	Harris RET .50 1/2014		Adamovich DEP 8/2016	Kiernan ^{RET} 1/2017 McGrath ^{RET} 7/2017		
	Clinical Instructor				Peterson DEP 7/2016			
	Clinical Professor							
note	Clinical Assoc Prof					Casteix ^{Prom} Norrix ^{Prom}		Hawley Prom
Pror	Clinical Asst Prof						Barakat ^{Prom} Hansen ^{Prom} Hernandez ^{Prom} (Motoyoshi)	

Prom = promoted, DEP = departed; RET = Retired.

Below, we highlight changes over this review period with regard to faculty composition as it affects our breadth.

- Growth in research and clinical services for voice/voice disorders
 - Dr. Robin Samlan (Fall 2013) brought expertise in research, classroom teaching, and clinical service delivery in the area of voice/voice disorders. She successfully achieved promotion and tenure and has played a key role in the growth of clinical education opportunities through collaboration with Banner University Medical Center (BUMC). The hire of Dori Scholer, Clinical Instructor (Summer 2018) and Natalie Monahan, Clinical Assistant Professor (Fall 2018) allowed us to develop an out-patient clinic for voice disorders at BUMC-North, which enhances the clinical education opportunities for students.
- Hearing Science/Audiology
 - Faculty recruitment in the area of hearing science/audiology has been challenging because the national pool is small, so we were so pleased to attract **Dr. Frank Musiek** in 2014. Dr. Musiek is internationally renowned for his work in auditory processing disorders and he authored the highly acclaimed textbook for the study of Anatomy and Physiology of the Auditory Mechanism. Dr. Musiek was a target-of-opportunity hire as Full Professor (nontenure eligible) as he plans to ultimately transition to retirement. In addition to classroom teaching, Dr. Musiek has had an active research lab where AuD, PhD, and Post-doctoral fellows have trained. The addition of Dr. Musiek was especially important as Senior Lecturer, **James Dean**, retired in May 2017. After six years of contribution, Dr. Musiek will retire at the end of 2021 academic year, but will continue to co-mentor several doctoral students to degree completion.
- Loss of mid-career faculty
 - Dr. Gayle DeDe and Dr. Edwin Mass (married) were recruited to Temple University, leaving our department in Summer 2015. This was a considerable loss as they had been successfully mentored via the NIH K-23 early career development mechanism (DeDe by Beeson; Maas by Story) and were well positioned to enter a mid-career level of productivity. DeDe had achieved promotion and tenure, and Maas was about to be reviewed. Their success was evident, making them targets for recruitment.
 - Dr. Stephen Wilson was actively recruited by Vanderbilt University, and ultimately departed Summer 2016. Dr. Wilson had been highly productive junior faculty member and active member of the UArizona Neuroimaging community. Despite a strong retention offer, Dr. Wilson noted the stronger research support environment at Vanderbilt which included excellent infrastructure for neuroimaging and lighter teaching load (due to the large faculty size in communication disorders).
 - Dr. Andrew Lotto was recruited to the University of Florida, departing in summer 2017. As a well-funded researcher approaching review for Full Professor, Dr. Lotto's departure significantly reduced research expenditures and enrollment in some large undergraduate courses that he designed.
- New faculty hires at Assistant Professor level
 - As shown in TABLE E.5.a, were successful in hiring junior faculty to accommodate the loss of four mid-career faculty over the course of four years. We are very pleased with our hires and the strength they bring to the department: Dr. Meghan Darling-White (motor speech disorders in children), Dr. Aneta Kielar (acquired language disorders and multimodal neuroimaging), Dr. Jessie Brown (traumatic brain injury and augmentative/alternative communication), and Dr. Leah Kapa (child language). We also had a joint hire with the

Neuroscience Department: **Dr. Julie Miller** (.40 in SLHS), bringing breadth to our faculty as Dr. Miller studies birdsong and an avian model of Parkinson disease.

- As might be expected, our portfolio of grant funding notably declined as we replaced midcareer faculty with junior faculty. Our new faculty have been actively pursuing internal and external funding with good success, but early funding mechanisms yield more modest funding (e.g., R-21 versus R0-1).
- Growth of clinical faculty and education opportunities in Audiology and Speech-Language Pathology
 - There have been shifts in the clinical audiology faculty over this time period, but strength was retained along with growth of the cohort. As Dr. Fran Harris retired in 2013 (.50 FTE), we were fortunate to add Drs. Stephanie Adamovich and Aileen Wong at 1.00 and .50 FTE, respectively. (See TABLE E.5.b above). In 2016, clinical faculty members Adamovich and Peterson moved from Tucson, so we recruited Dr. Erica Hansen and Dr. Fadyeh Barakat to join our faculty. Hansen brought expertise in cochlear implants and international outreach in audiology; Barakat had strength in both adult and pediatric audiology, contributing significantly to our Living Well with Hearing Loss program as well as tinnitus management. After four years on clinical faculty, we were disappointed that Dr. Barakat transitioned to fulltime employment at the Tucson VA Medical Center. In 2020, Dr. Diane Smith, a community audiologist, joined the clinical education team part-time, bringing her expertise in the assessment and management of vestibular function. As of January 2021, Dr. Smith increased her time commitment to SLHS to .60 FTE, contributing to the classroom as well as the clinical setting.
 - In speech-language pathology, we had the opportunity to add a voice specialist, Soha Al-Jurf, whose parttime contribution helped us to build our caseload in voice disorders. As w lost one clinical faculty member to retirement (McGrath, Summer 2016), but we added four new clinical faculty in speech-language pathology. Rui Motoyoshi (now Hernandez) was hired in 2015, to coordinate clinical education with a focus on bilingual/bicultural contexts. She has played a critical role in the fostering of clinical placements in the community as well as offering education to community SLPs regarding multicultural issues in out field. To enhance our expertise and opporunties in medical speech-language pathology, we added Kathleen Cazzato in Spring 2017. In addition to clinical education, Cazzato teaches a 1-unit workshop course to prepare students for their first medical placement, and she has marked strength in swallowing disorders so that she teaches the graduate-level dysphagia class. Natalie Monahan and Dori Scholer were hired in 2018, allowing development of our clinical program in voice at Banner University Medical Center (BUMC) - north campus. Similarly, Cazzato now runs a new out-patient dysphagia clinic at BUMC-North that offers an excellent clinical education opportunity. In January 2020, Cass Faux retired from a distinguished clinical education career at UArizona. Plans to hire another fulltime clinical faculty member in speech-language pathology were interrupted due to the pandemic, and we just recently reactivated the interview process for top candidates.
 - It is important to note the continued contributions from several externally funded research professionals who also support the clinical education of our students. Rebecca Vance (PI, Elena Plante), Kindle Rising (PI, Pagie Beeson), and Cecilia Figueroa (PI, Mary Alt) are Research Speech-Language Pathologists engaged in treatment research which naturally lends itself to clinical education opportunities. Similarly, Research Audiologist Dr. Aileen Wong (PI, Nicole Marrone) is highly involved in student education as part of her funded research. Most recently, Dr. Trianna Oglivie (PhD, 2019) expanded her research role to include a focus on clinical education and classroom teaching. Together, all of these

individuals extend our capacity to provide high quality clinical education; **Rising**, **Wong**, and **Oglivie** are also excellent contributors in the classroom.

- Leadership in clinical education
 - Dr. Mark DeRuiter joined the faculty in Summer 2017 to serve as Associate Department Head for Clinical Education. Dr. DeRuiter was an excellent addition to our program, adding leadership for the clinical education program and working with our clinical staff as we made a number of changes to our billing and record-keeping protocols. He was also an important contributor to classroom teaching and audiology student mentoring. We were disappointed that Dr. DeRuiter was recruited away from UArizona by another strong program (University of Pittsburgh) after a three-year contribution; however, we benefitted from a number of changes to our clinical education leadership model.
 - 2020 update: As of Summer 2020, Dr. Robin Samlan, Associate Professor, stepped into the role of Associate Department Head for Clinical Education. Dr. Samlan has a unique clinical and business background that complements her strengths as a tenure-track faculty member conducting research in voice and voice disorders. With an M.B.A. and a rich clinical career in medical speech-language pathology at Johns Hopkins University before pursuing the PhD, Dr. Samlan has excellent organizational and leadership skills to oversee our clinical education program.
- SLHS Contributions to University and National Leadership
 - Over the period under review, we have had several senior faculty members who were recognized for their exceptional leadership skills as they undertook prominent leadership positions.
 - Hoit Interim 2016 Interim Faculty Director, Graduate Center, University of Arizona (Spring 2016)
 - Hoit Director, Postdoctoral Affairs (2017 current)
 - Story Interim, Associate Dean, College of Science (Spring, 2017)
 - Story Current, Associate Dean, Faculty Affairs (Jan. 2020 current)
 - Plante ASHA Vice President for Research (2019-2021)

Planned Directions for Future Hires

Although we had a good number of faculty hires for the period under review, our last tenure-track hire was January 2018 (Dr. Leah Kapa). Since that time, there have been several losses in career track faculty that reduced the teaching capacity in Audiology/Hearing Science. Specifically, the retirement of Dr. Jim Dean in May 2018 and the departure of Dr. Mark DeRuiter in July 2020 necessitated increased teaching from tenure-track and career-track faculty. These changes were accompanied by the reduction in FTE for Drs. Hoit and Story (noted above) as they accepted positions in university and college administration, respectively. Consequently, we requested approval for a faculty search beginning in 2018-19. A search was granted in Spring 2020, with a focus on finding a potential department head, as the second 5-year department head term ends for Dr. Beeson in June 2021. Unfortunately, the search for a department head was not successful; however, the positive outcome was that Dr. Mary Alt agreed to transition to Associate Department Head in July 2020 with the plan to become Department Head in June 2021. We remain in need of additional faculty to fully cover department teaching needs in the coming years.

Review of our tenure-track faculty content coverage to achieve our educational mission for the MS and AuD professional degrees indicates our greatest needs in the areas of Hearing Science/Audiology as well as Speech Science/Speech Disorders. Despite the university-level hiring freeze that has been in place for 2020, we have responded to several calls for hiring plans from the College of Science. No hiring activity

has been approved, however, due to both the economic impact of the pandemic as well as the recent search for a new Dean of the College of Science. With a new Dean expected to be in place by Fall 2021, we continue to consider hiring possibilities. In particular, we focus on potential targeted hiring through the <u>Strategic Priorities Faculty Initiative</u> (SPFI) which "provides temporary University financial support to academic departments enabling them to hire additional full-time, tenure- track faculty or continuingeligible academic professionals who will enhance UA's distinctive strengths in advancing Inclusive Excellence via equal opportunity, diversity, and inclusion." The candidate pool in our field is relatively small regardless of racial/ethnic background as we discuss in more detail in the **Section E.7**.

The hiring of Career Track faculty is highly dependent upon the financial status of the department. Historically, salaries for clinical faculty are paid from a number of sources, with about half of the funds coming from what have been considered "permanent state dollars." The remaining funds come from sources such as salary savings from grant support, clinical revenue, and contracts for clinical services. The composition and size of the clinical faculty is a critical factor determining our ability to provide adequate clinical supervision for students in the graduate programs in Speech-Language Pathology and Audiology. As noted, recruitment of a fulltime clinical faculty member in Speech-Language Pathology to replace a retirement was disrupted due to the pandemic but is now underway (Spring 2021). With the loss of a fulltime clinical faculty member in Audiology (Barakat), there is a clear need for another fulltime clinical faculty member in that area as well.

E.6. Faculty Compensation and Comparison with Relevant Peer Institutions

Salary data for comparison was retrieved from the Council on Academic Programs in Communication Sciences and Disorders (CAPCSD). Using the interactive database, we pulled salaries by faculty type (academic or clinical) and rank for all programs, and also for the subset of institutions with very high research activity (Carnegie R1 designation). Box plot graphs were generated using the median, 10th and 90th percentile data from the <u>CAPCSD</u> data and our own salary data. **Figure E.6.a.** shows the median and range of salaries for Assistant, Associate, and Full Professors, with all reporting programs on the left, research emphasis programs in the center, and our faculty (Fall 2018) on the right. The comparison shows that the University of Arizona salaries are on par with median salaries at peer institutions for the Assistant and Associate Professor levels, but we lag behind at the Full Professor level. Recent salary increases in January 2020 may lessen the gap, but comparison data are not yet available.

\$250,000	Assis Profe	tant ssor		Ass Pro	ociate fessor	;	Pro	ofesso T	r	FIGURE E.6.a. Academic year (9-month) salary median and range (upper 90 th and
\$200,000										data from 2018 CAPCSD salary survey.
*										All = 840 faculty from 117 institutions
\$150,000		Ţ			Ī				T	R1 = 249 faculty from 25 institutions with Carnegie Research 1 rating.
\$50,000						-				UA = SLHS faculty salary (does not include administrative stipends or summer salary)
\$ 50,000	Ţ			Ţ						
\$-	All	R1	UA		R1	IIΔ		R1	114	National data from <u>CAPCSD</u> 2018 Salary Survey.
	/		0/1			04			04	

With regard to clinical faculty salaries, our Clinical Assistant Professor compensation appears to be on par with median salaries at peer institutions, but we lag behind at the Clinical Associate Professor level. Our cohort at the Clinical Professor level is too small for comparison, but the benchmarks are helpful to guide planning. Of note, review for promotion of clinical faculty is not required and the number of years of experience is not controlled for in these data.



E.7. Gender and Race/Ethnicity of Faculty

The composition of our faculty with regard to gender and race/ethnicity is shown in **TABLE E.7**. Over 80% of our faculty are female, a circumstance that is rare in STEM disciplines, but consistent with the over-representation of females in our field. By contrast, the racial/ethnic composition of our faculty is not on par with national or local diversity, with only 9.4% of our faculty members being individuals of color. This reflects less diversity than the faculty within our college. We also evaluated our faculty diversity in relation to the membership of our national organization (ASHA, with 14.4% individuals of color) and the national pool of PhDs in our field (19.2% people of color). When examining the racial/ethnic background of those receiving new PhDs, the most recent survey from Communication Sciences and Disorders programs indicated 14.2% reflect non-white backgrounds. So, while the overall diversity of the candidate pool for faculty hires is limited, these data indicate that there is room for growth. For the period under review, the diversity among our career-track faculty increased by about 5%, but there was no change in our tenure-eligible faculty. Efforts to increase diversity within our tenure-track faculty are affected by the fact that the number of individuals seeking academic faculty positions in our field has been inadequate to meet the demand for decades. In other words, there are hiring challenges beyond issues of diversity.

As we have had the opportunity to hire, we consistently employ strategies to maximize the quality and diversity of candidate pools. This includes:

• All SLHS faculty are aware of the UArizona <u>Strategic Priorities Faculty Initiative</u> (SPFI) to advance inclusive excellence via equal opportunity, diversity, and inclusion, so that we are always considering potential targeted hires through this program. We were supported via

the SPFI program to bring in a potential candidate for interview in 2016 and we are currently pursuing another targeted individual.

- For all searches, we follow the UArizona recommended guidelines for successful searches and the Search Committee Chairs and the Department Head have participated in the hiring workshop offered by Faculty Affairs, which provides research-based strategies and best practices for identifying candidates who will help us advance our strategic priorities.
- We include the recommended comprehensive statement regarding inclusivity/diversity in our position announcments/postings, which clearly elaborates the university priorities including the communication that we welcome applications from those who will "help us advance our Inclusive Excellence initiative aimed at creating a university that values student, staff and faculty engagement in addressing issues of diversity and inclusiveness."

Percent	SLHS Faculty		College	AZ	US	ASHA	ASHA	
	Tenure- Track	Career- Track	All	of Science	Census ¹	Census ¹	Members ²	PhDs in US ³
Female	81.3	81.3	81.3	30.7	50.3	50.8	95.5	75.5
Male	18.8	18.8	18.8	69.3	49.7	49.2	4.5	24.5
African American*	0	0	0	2.5	5.1	13.4	3.5	6.5
American	0	0	0	0.2	5.3	1.3	0.3	0.2
Indian/Alaska Native*								
Asian American*	6.3	0	3.1	10.5	3.7	5.9	3.0	6.5
Hispanic/Latinx*	0	6.3	3.1	5.9	31.6	18.3	5.8	4.1
Pacific Islander*	0	0	0	0.2	0.3	0.2	0.2	0.1
Two or more races*	0	6.3	3.1	0.7	2.9	2.7	1.4	1.8
*Subtotal Faculty of	6.3	12.6	9.4	17.3	48.9	41.8	14.4	19.2
Color								
White	93.8	87.5	90.6	73	54.4	60.4	83.4	80.9
(non-Hispanic/Latino)								
Unreported	0	0	0	6.3	-	-		
Nonresident (International)	0	0	0	3.5	-	-		

TABLE E.7. Gender, Race/Ethnicity of SLHS Faculty

*Faculty of Color as defined by UAIR Enrollment Fact Book.

¹ United States Census Bureau Quickfacts. Estimated population, July 1, 2018, for state of Arizona and US as a whole.

² ASHA Member Counts 2019 (note 8.3% non-white racial minorities)

³ Profile of ASHA PhD counts Members and Affiliates with PhDs, Year-End 2018

Our department is committed to enhancing the diversity of our faculty in keeping with the diversity of the University community and of the state of Arizona. Given the opportunity to hire faculty members, we will make every effort to identify candidates who both meet the content area needs of the Department as well as increasing our diversity. We are also committed to contributing to the diversity of the pool of prospective academic faculty members in our field, as is evident from the race/ethnicity profiles of our student populations detailed in **Section H** (undergraduate students) and **Section I** (graduate students). Specifically, we note that students of color comprise 45% of our 2018-19 undergraduate majors and 41% of our PhD cohort. In effect, our program is contrituting to increased diversity within the profession, which is vital to our future. We insert the section that follows to elaborate SLHS activities to enhance diversity, equity, and inclusion.

E.8. Faculty Activities to Enhance Diversity, Equity, and Inclusion

As a department, we have a history of programmatic efforts centered on promoting diversity and inclusion in our profession. Most notable was the 15-year duration of the American Indian Training Program in Speech-Language Pathology and Audiology funded by the U.S. Office of Special Education and Rehabilitation Services in the 1980s and 1990s. This program successfully supported the recruitment and retention of students of Native American heritage who launched careers in speech-language pathology and audiology, most of whom have served Native American communities for several decades now (~30 professionals in the Southwest US and beyond). This program also prompted the development of clinical practicum sites in nearby Tohono O'odham and Pascua Yaqui communities, and experiences in more distant Native American communities. More recently, we launched a more broad-based program to enhance our curriculum and clinical experiences through the Multicultural/Bilingual Certificate Program in Audiology and Speech-Language Pathology. Since enrollment began in 2013, 63 students have received the graduate certificate and are well-qualified to provide service delivery across a full range of multi-lingual/multi-culteral contexts. The program is discussed in more detail in the Graduate Student **Section I**.

In addition to these programmatic efforts, we have had growth in the scholarship and training opportunities that address multicultural/multilingual issues in our field. This includes:

- Leah Fabiano-Smith examines phonological development in Spanish/English speaking children.
- Nicole Marrone & Aileen Wong investigate a community-based service delivery model for audiologic rehabilitation in the context of US/Mexico border community.
- Mary Alt is Co-PI on a training grant from the US Office of Special Education Programs for the PRIDE program (Preparing Researchers in Early Intervention for Children with Disabilities from Multicultural Environments). This provides training, tuition, health benefits, and professional development experiences to PhD students who are interested in serving children from multicultural/multilingual backgrounds.

We are well aware that a fundamental issue regarding diversity relates to the culture of the unit along with values of equity and inclusion. In the table below, we highlight the range of activities and actions devoted to this effort.

TABLE E.8 Activities and Actions Related to Diversity, Equity, and Inclusion

Enhancing Organizational Infrastructure and Participation in Leadership Service Creation of Department Equity and Inclusion Committee

In 2017, SLHS formed an Equity and Inclusion (E & I) Committee, chaired by Dr. Leah Fabiano-Smith, comprising self-selected faculty and staff. Department representatives also became part of the College of Science Workplace Climate Committee that included a focus on equity and inclusion issues. This Workplace Climate Committee was the precurser to the College of Science Diversity, Equity, and Inclusion Committee discussed below. The robust and active involvement of the SLHS E & I Committee is one indicator of our commitment to targeting and addressing equity and inclusion issues. Over the past several years, the SLHS E & I committee and other faculty/staff stakeholders spearheaded a number of efforts to:

- o Increase support for students of color in our program
- o Re-examine graduate application procedures in light of equity and inclusion
- Increase connections to university programs and personnel who provide support for diversity initiatives and to access available resources
- o Elevate awareness of department commitment
- Support faculty self-examination and growth

Support of Professional Development Opportunties

Dr. Aileen Wong participated in the inaugural Hispanic Serving Institution Fellows (2018-2019) cohort, part of the University of Arizona's Inclusive Leadership Program. Dr. Wong not only represented our department but was the only faculty representative from the College of Science in the innaugural cohort. Our department provided flexibility for participation in this professional development/service activity, and benefits from Dr. Wong's leadership within the department, college, and the university.

Local and National Service Contributions

<u>College</u>: SLHS support of the newly formed College of Science Diversity, Equity, and Inclusion Committee is robust as SLHS faculty members serve on each of the three subcommittees, with two chaired by SLHS faculty (Fabiano-Smith, Wong). We also have SLHS student and staff representatives on the COS DEI Student Success Subcommittee. <u>https://science.arizona.edu/diversity-inclusion</u> <u>State</u>: Rui Hernandez (Co-Chair) and Aileen Wong (Member) serve on the Arizona Speech-Language-Hearing Association Cultural and Linguistic Diversity Committee

<u>National</u>: On October 27, 2020, our department hosted a National Conversation on Anti-Racism in Bilingual and Multicultural Certificate Programs in Communication Sciences and Disorders facilitated by Chelsea Privette (SLHS PhD Candidate) and faculty members Leah Fabiano-Smith, Rui Hernandez, and Trianna Oglivie. The event brought together thirty-five leaders in multicultural issues from across the country to dialogue on topics related to anti-racism practices in speech-language pathology and audiology programs.

Increased Communication and Information Dissemination

We have included enhancements to our department website to include information about our SLHS Equity & Inclusion Committee, departmental policies and actions that support equity and inclusion, research opportunities focusing on multicultural populations, and student groups centered on supporting students form underrepresented backgrounds. Efforts were also made to provide better access to resources for student on our department website (<u>on-line resources for students</u>). See https://slhs.arizona.edu/equity-inclusion/equity-inclusion-committee

Capacity Building Through Faculty Training

Faculty Training on Intergroup Bias

In 2016, we engaged in implicit bias training as a faculty with <u>Dr. Jeff Stone</u>, Professor of Psychology and Psychiatry at the University of Arizona, a leading researcher in the study of intergroup bias. This came about as part of the College of Science efforts to foster a positive workplace environment. During the training, faculty were engaged in active learning activities and group discussion directed toward increasing awareness of issues related to equity and inclusion.

Faculty Discussions on Anti-Racism

To promote awareness and self-reflection, SLHS Equity and Inclusion Committee began organizing faculty training opportunities held on a biweekly schedule. The optional meetings are well attended and we are actively engaged in cultural change at the department level to create a setting in which both BIPOC students and faculty can thrive. The Fall 2020 semester topics included:

- o 26-Aug-20 Anti-Racism Discussion
- o 9-Sep-20 Concept of Colorblindness
- \circ $\$ 16-Sep-20 Black in the Ivory
- 7-Oct-20 Concrete Strategies for Culture Change
- o 21-Oct-20 Anti-Racism in Graduate Admissions
- 4-Nov-20 Let's Talk about Race: Moving the Conversation Forward Toward Meaningful Change
- 2-Dec-20 Professionalism and Culture

Enhanced Supports Related to Recruitment and Retention of Diverse Students Faculty Mentoring of Student Groups

Faculty members supported the development of groups to support underrepresented students. This included an undergraduate group <u>SHCC – Speech-Language and Hearing Cats of Color (SHCC)</u> and a graduate Level group <u>Speech, Language, and Hearing for Underrepresented Students (SLH-US)</u>.

Examination of Graduate Admissions Processes

Our department has worked to review and revise our graduate admissions process so that it would utilize a holistic approach. (See **Section I. Graduate Students** for details.)

E.9. Biographical Sketches

Biographical sketches are included in **APPENDIX R** that summarize research interests, honors and awards, publications, current grant funding, invited lectures, and major service and committee assignments. For quick reference, photos are included here in **FIGURES E.9.a and E.9.b.**

FIGURE E.9.a. Tenure-Track Faculty and Senior Lecturer





Leah Fabiano-Smith, PhD, CCC-SLP Associate Professor Research: Phonological development in bilingual children Funding: NICHD/NIDCD



Jeannette Hoit, PhD, CCC-SLP Professor, ASHA Fellow Research: Changes in speech production with development and aging, and effects of nervous system disease

Leah Kapa, PhD



AssistantProfessor Research: Languageand cognitioninindividualswith typical language abilities and those with developmental language disorders

Associate Department Head for Clinical Education Research: Improving voice evaluation and treatment in adults Funding: NIH/NIDCD

Brad Story, PhD





David Velenovsky, PhD, CCC-A Senior Lecturer

Research: Application of new technology to clinical evaluation of hearing and balance

FIGURE E.9.b. Career-Track Faculty: Clinical Faculty and Research Professionals

Clinical Faculty and Research Professionals

Speech-Language Pathology



Jennifer Casteix, MS, CCC-SLP **Clinical Associate Professor** Specialty: Pediatric dysphagia; autism spectrum disorders; phonological disorders, special healthcare needs



Rui Hernandez, MA, CCC-SLP **Clinical Assistant Professor** Bilingual Certi icate Program Coordinator Specialty: Preschool and school-age language disorders; Spanish/English



Kathleen Cazzato, MA, CCC-SLP Clinical AssistantProfessor Specialty: Adult neurogenic communication disorders; adult dysphagia; medical speech-

language pathology



Janet Hawley, ClinScD, CCC-SLP **Clinical Associate Professor** Specialty: Neurogenic communication disorders; transgender voice; accent modi ication



Carole Jensen, MS, CCC-SLP

Clinical Assistant Professor Director, Child Language Center Specialty: Pediatric communication disorders; augmentive communication devices; family support



Natalie Monahan, MS, CCC-SLP **Clinical Assistant Professor** Specialty: Voice laryngeal breathing disorders; adult neurogenic communication disorders



Kristin Reeb, MS, CCC-SLP

Clinical Instructor Specialty: Preschool and school-age language disorders; family support



Dori Smith, DMA, MS, CF-SLP **Clinical Instructor** Specialty: Voice and laryngeal airway disorders;

communication and swallowing disorders associated with head and neck cancer



technology





Clinical Instructor Specialty: Vestibular/Audiologic diagnostics & rehab; electrophysiology



Aileen Wong, AuD, CCC-A Clinical Assistant Professor & Research Specialty: Diagnostic and rehabilitative audiology

Research Professionals



Cecilia Figueroa, MS, CCC-SLP Research Speech-Language Pathologist Specialty: Child language disorders

Trianna Oglivie, PhD, CCC-SLP **Research Scientist** Specialty: Developmental language disorders



Kindle Rising, MS, CCC-SLP Research Speech-Language Pathologist Specialty: Aphasia and other neurogenic communication disordorders



Rebecca Vance, MS, CCC-SLP Research Speech-Language Pathologist Specialty: Child language disorders



Audiology



Erica Hansen, AuD, CCC-A, F-AAA

Clinical Assistant Professor Specialty: Diagnostic and rehabilitative audiology; cochlear implants; outreach to underserved populations

Linda Norrix, PhD, CCC-A **Clinical AssociateProfessor** Specialty: Pediatric audiology

Diane Smith

Audiologist





UNIT ADMINISTRATION

F. UNIT ADMINISTRATION

F.1 Department Organization

The Department is administered by a Head, who is appointed by, and serves at the pleasure of, the Dean of the College of Science. Consistent with the expectations from the College, the Department Head is responsible for implementing and administering the programs and policies of the Department and representing the unit to higher administration, relevant professional organizations, and the community. The head is ultimately responsible for oversight of all aspects of the department mission, allocating resources (funds, space, personnel), and reviewing faculty and staff performance. As depicted by the organization chart in **Figure F.1**, faculty leadership and participation are critical to running the department with the contribution from standing committees being especially important. As might be expected, there is adjustment of leadership roles and committee structure over time in order to best meet department needs and to accommodate faculty commitments. To that point, for the current academic year (2020-21), we accommodated several sabbatical leaves (Samlan, Fall 2020; Alt and Marrone, Spring 2021), along with leadership commitments from senior faculty (Plante, ASHA Vice President for Research; Story, Associate Dean, College of Science; Hoit, Director of UArizona Post-doctoral Affairs). This required some shifts in responsibility and additional service burdens for some.



FIGURE F.1 Organization Chart for Speech, Language, and Hearing Sciences

As shown in **Figure F.1**, the Department Head (Pagie Beeson) and two Associate Heads (Mary Alt and Robin Samlan) form the central leadership team. They interface with an elected Advisory Committee (three tenure-track and one career-track faculty member) who serve a two-year term. Significant leadership is also provided by Dr. Kate Bunton who serves as Director of Graduate Study for the MS and PhD programs and chair of the Curriculum Committee. Dr. Barbara Cone is Director of Graduate Studies for the Doctor of Audiology program, working closely with Dr. Bunton. Dr. Jenny Hoit is Chair of the SLHS

Promotion and Tenure Committee, working with university and college personnel along with the Department Head to support faculty advancement and oversee the department-level P & T process.

Dr. Pagie Beeson has been Department Head during the period under review, along with Dr. Brad Story as Associate Department Head until Jan. 2020, when he became Associate Dean of the College of Science. Dr. Mark DeRuiter was recruited to join the faculty as Associate Department Head for Clinical Education in 2017. As Dr. Story accepted administrative responsibilities within the College of Science, Dr. Kate Bunton provided interim support (Spring 2020), and Dr. Mary Alt accepted the Associate Head position in July 2020. Dr. Robin Samlan became Associate Head for Clinical Education in July 2020, as Dr. DeRuiter departed. The leadership team is advised by the elected advisory committee that currently includes Drs. Jenny Hoit, Nicole Marrone, Leah Kapa, and Janet Hawley.

In her role as Associate Department Head, Dr. Mary Alt represents SLHS within the College Associate Head cohort, meeting regularly with the Associate Dean for Student Success. Dr. Alt has also taken a leadership role in addressing the adaptation of classroom teaching during the pandemic as she initiated and facilitated biweekly meetings for SLHS faculty regarding remote teaching strategies and problemsolving. As Dr. Alt is on sabbatical during Spring 2021, Dr. Kate Bunton serves as interim Associate Department Head. Dr. Alt will take on the role of Department Head in June 2021.

The Associate Head for Clinical Education (Samlan) is responsible for oversite of the clinical aspects of the graduate programs in speech-language pathology and in audiology. This involves the business side of running our on-campus clinic and the contracts for off-site service delivery contracts, as well as oversite of student preparation to meet national clinical certification requirments. Dr. Samlan is well-suited for this role given her academic preparation and experience, which includes clinical certification in Speech-Language Pathology, Master's degree in Business Administration, and PhD in Speech, Language, and Hearing Sciences. Working closely with clinical faculty and clinic staff, Dr. Samlan played a crucial role in addressing the adaptation of clinical operations during the pandemic. Within the clinical faculty, additional leadership responsibilities are distributed. In audiology, Dr. Tom Muller has long been the coordinator of audiology clinical education. He oversees practicum assignments on- and off-campus, including the 4th year externship. Audiology clinical faculty take leadership in their respective specialities. In speech-language pathology, Dr. Samlan works with the SLP clinical faculty who have distributed responsibilities supporting specialty clinics in their areas of expertise and community relations to establish and maintain off-campus clinical placements.

All faculty members contribute to the department through committee work. Standing committees carry out established department tasks as well as develop new objectives and plans that they bring to the faculty for consideration and development. Ad hoc committees are formed and dissolved as special needs develop, including, for example, faculty searches and special event planning. As depicted in **FIGURE F.1.**, committee chairs play a central role in oversight of many aspects of the program. The Committee Chairs work closely with the Department Head to stay calibrated, with decision making brought to the Leadership Team, Advisory Committee, and the full faculty as appropriate.

Faculty meetings are held each month during the academic year. These 1 to 1.5-hour meetings are complemented by longer faculty meetings (3-5 hours) that typically occur at the beginning and end of each semester. Full-day faculty retreats typically occur once a year to address broad issues related to strategic planning, curriculum review/revision, and the like. Committee meetings occur on weekly, monthly, or semester basis, depending on the nature and scope of work. Department bylaws provide

agreed-upon procedures and guidelines for faculty decisions, such as curriculum changes, hiring, and programmatic initiatives.

We note that during the pandemic, of course, the frequency of faculty and administrative meetings increased significantly. Beginning in March 2020, the Department Head met daily with the College of Science Dean and other Heads and Directors, and SLHS leadership (Beeson, Alt, Samlan) met three times per week throughout Summer 2020. As with all units on campus, we addressed the adaptations and guidelines necessary for the conduct of teaching and research during the pandemic, and we also addressed our unique issues related to managing clinical service delivery and clinical education (on and off campus) during the pandemic. We worked closely with University administration as we all gained knowledge regarding the risks associated with the COVID-19 virus and developed appropriate restrictions and mitigation strategies. All faculty members were involved in individual and group efforts to identify and accommodate necessary changes and to learn a host of new information and strategies to accomplish our jobs.

F.2. Classified and University Staff

SLHS is supported by university staff devoted to several operational areas, as shown in **TABLE F.2.a.** Department finance, administration, and student services are managed by three fulltime staff members along with two part-time staff (total FTE = 4.2). Our on-campus clinic runs with the support of three fulltime staff who manage all of the patient scheduling, record-keeping, face-to-face check-in and checkout procedures, as well all billing and insurance. We have one undergraduate academic advisor who is

Position Title	Name	FTE	Area (source of funding)
DEPARTMENT ADMINISTRATION			
Manager of Finance	Kevin Phelan	1.0	Department
Administrative Assistant	Kim Sasser	1.0	Department
Student Services Coordinator	Susan Bridgewater	1.0	Department
Office Specialist	Debra Lavine	.60	Department
Office Specialist	Denise Radosevic	.60	Department
Outreach/Development Coordinator	[vacant]		Department
	subtotal	4.2	
CLINIC STAFF			
Coordinator, Medical Billing	Feday Barakat	1.0	Speech, Language, Hearing Clinic
Administrative Assistant	Patricia Sanchez	1.0	Speech, Language, Hearing Clinic
Administrative Assistant	Selina Warren-Snyder	1.0	Speech, Language, Hearing Clinic
	subtotal	3.0	
UNDERGRADUATE ADVISING			
Undergraduate Academic Advisor	Palacio, Andrea	(1.0)**	College of Science (1.0 FTE)
IT STAFF			
Manager, Information Systems	In-Albon, Peter	.66	Department & MBB (1.0 total FTE)
Systems Administration	Reichenbacher, Richard	.35	School of MBB (1.0 total FTE)
	subtotal	1.01	
SLHS Total		8.2	Department funds
Total		9.2	Including College Funding

TABLE F.2.a. Staff in the Department of Speech, Language, and Hearing Sciences (2018-19)

*position vacated March 2019; **funded by College of Science

supported by the college of Science Advising Office. Our two IT staff are joint funded through our school-level IT management. In total, we have 8.2 FTE covered from department funds (9.2 with college-funded advisor included). For reference, we include staff photos in **FIGURE F.4**., and a detailed employment history for staff is included in **APPENDIX C**.

Although all staff report to the Department Head, additional layers of administrative structure are in place. For example, the Associate Department Head (Samlan) oversees the Manager of Medical Billing (Barakat) who in turn oversees the administrative assistants in the clinic office. The undergraduate advisor is supervised by the College of Science Office of Student Services and Academic Advising, but also receives direction from the Curriculum Chair (Bunton) and the Department Head.

At our off-campus Child Language Center, which is supported by the Scottish Rite, there were 12 (9.63 FTE) staff members working for the Wings on Words preschool program in 2019. Those individuals report to the Director of the Child Language Center, Carole Wymer, who is part of our clinical faculty. All staff are funded through the Child Language Center, but SLHS provides IT support as well as payroll and human resources support.

Staff Categories	FTE	Location
Instructional Aides	3.88	Child Language Center, Wings on Words Program
Instructional Specialists	4.0	Child Language Center, Wings on Words Program
Instructional Specialist, Sr.	1.75	Child Language Center, Wings on Words Program
total	9.63	

TABLE F.2.b. Instuctional Staff at the Child Language Center

Research efforts within the department are also supported by individuals who are funded primarily by external grants, and work under the direction of faculty Principal Investigators. In **Table F.2.c.**, we take note of six research professionals because they also contribute to the central mission of the department. As is evident from their biosketches, these individuals have exceptional credentials that qualify them to contribute to classroom instruction (Oglivie, Rising, Patterson, Wong). These individuas are also actively involved in providing educational opportunities for undergraduate and graduate students through independent studies and directed research (all), as well as supervised clinical rotations (Figuroa, Oglivie, Rising, Vance, Wong). The strong synergy between research and clinical activities is a natural consequence of the clinical research conducted by many of our faculty.

TABLE F.2.c. Research Professionals (funded by external funds)

•	, , ,		
Title	Name	FTE	Commitment to
Research Speech-Language Pathologist	Figuroa, Cecelia (CCC-SLP	1.00	Alt
Research Scientist	Oglivie, Trianna* (CCC-SLP)	1.00	Plante/Department
Research Scientist	Patterson, Dianne	.50	Plante/Beeson
Research Speech-Language Pathologist	Rising, Kindle (CCC-SLP)	.80	Beeson/Department
Research Speech-Language Pathologist	Vance, Rebecca (CCC-SLP)	1.00	Plante
Research Audiologist	Wong, Aileen (CCC-A)	.50	Marrone/Department
	total	4.80	External funding sources

*2020 update: Oglivie transitioned to increased classroom and clinical teaching.

F.3. Gender and Race/Ethnicity of Staff and Research Professionals

The diversity of the staff and appointed professionals more closely approximates the demographics of Arizona, with 33.3% persons of color. The inclusion of staff with bilingual Spanish/English skills is especially important in our clinical settings, and we have been successful in attracting and retaining such personnel.

Percent	SLHS Staff	College of Science	AZ Census ¹	US Census ¹
Gender				
Female	93.3	43.2	50.3	50.8
Male	6.7	56.8	49.7	49.2
Race/Ethnicity				
African American*		0.6	5.1	13.4
American Indian/Alaska Native*		0.7	5.3	1.3
Asian American*	3.3	3.6	3.7	5.9
Hispanic/Latino*	30	13.8	31.6	18.3
Pacific Islander*			0.3	0.2
Two or more races*			2.9	2.7
*Subtotal Staff of Color	33.3	18.7	48.9	41.8
White (non-Hispanic/Latino)	60	70	54.4	60.4
Unreported	6.7	11.4	-	-
Nonresident (International)			-	-

¹ United States Census Bureau Quickfacts. Estimated population, July 1, 2018, for state of Arizona and US as a whole. *Staff of Color as defined by UAIR Enrollment Fact Book.

F.4. Staff Roles and Adequacy of Staff Support

As indicated above, SLHS has two primary administrative areas: 1) support of the academic, research, and outreach activities and 2) the operations of our Speech, Language, and Hearing Clinic. In this section, we focus on the department administrative support and review the support for our clinic and IT services in the next section regarding unit resources. SLHS has never had a large cohort of support staff, rather we operate with efficient support of a small number of high-quality personnel. The configuration of support has changed over time in order to best meet the needs of the department given the budgetary constraints at a given time.

Administrative support for department operations comes from three key individuals: Business Manager (Phelan), Administrative Assistant (Sasser), and Student Services/Graduate Program Coordinator (Bridgewater). They are supported by two part-time staff (Office Specialists: Levine and Redosovic). This lean administrative team does an amazing job, and we highlight their roles here in order to comment on the adequacy of staff support. As part of the School of Mind, Brain, and Behavior (MBB), Business Manager Jennifer Lawrence (housed in the Department of Neuroscience) plays a consultative role for each MBB unit. With her vast university experience, Ms. Lawrence is an excellent resource for SLHS Business Manager and Department Head regarding human resources, hiring, and financial issues.

Business Manager (Phelan)

- Workload: The business manager oversees the department budget, extramural funding from grants and contracts, and all designated accounts, including our Speech, Language, and Hering Clinic. He works with the Department Head regarding budget planning and oversight, and with each faculty member as they apply and manage external funds. He coordinates with our Associate Head for Clinical Education to establish and maintain contracts related to clinical placements for our graduate students. The Business Manager also serves the role of human resources representative, overseeing job postings, hires, and payroll.
- Adequacy: The workload for this position is clearly too much for one individual, so we had .20 FTE support from an accountant in the School of Mind, Brain, and Behavior for several years. As that individual moved, we recently hired an Office Specialist at .60 FTE. This individual (Lavine) assists with payroll, travel, and purchasing. This addition has been helpful, but clearly another fulltime member of the business team is needed to allocate adequate time to both central budgetary issues and to provide grant support for faculty.

Administrative Assistant (Sasser)

- Workload: Our department administrative assistant serves many functions that include front desk receptionist, building manager, as well as faculty support. As building manager, she coordinates with facilities management on all maintenance and improvement projects. Faculty support involves assisting in completion of data entry for annual performance reviews through the Interfolio program UAVitae, and the compilation of Promotion and Tenure paperwork for the department. She also plays a key role in event planning, along with other staff. The Administrative Assistant (and Student Services Coordinator) are supported by two student workers at .25 FTE.
- Adequacy: Although the workload is heavy, our administrative assistant accomplishes all of the allocated tasks in a timely and highly competent manner. Her positioning at the front desk works very well with her role as building manager as she interfaces with faculty, staff, and students daily, and can keep on top of needs. She played a central role in accommodating all of the COVID mitigation strategies. The student support has been important to get projects accomplished and to assist with events.

Student Services/Graduate Program Coordinator (Bridgewater)

- Workload: The Student Services Coordinator works with faculty to oversee student-related paperwork for our undergraduate and graduate programs. She works closely with the chair of the curriculum committee (Bunton) in relation to room scheduling and degree requirements, and coordinates with our undergraduate advisor as necessary to meet student needs. In her role as Graduate Program Coordinator, Susan Bridgewater works closely with graduate admissions Chair to process the annual influx of graduate applications that typically averages about 350 completed applications (with an increase to over 550 in 2021). In 2016, we made a major shift in our admissions process as we transitioned to use of the Communication Sciences and Disorders Centralized Application System (CSDCAS), which is a complement to the UArizona Graduate student matriculation in relation to the documentation of progress toward meeting all graduation requirements.
- Adequacy: Our current student services coordinator manages this large workload with excellence despite limited additional support. The recent significant increase in graduate school

applications overburdened our coordinator, and we will need to allocate additional resources if this turns out to be the new normal.

Coordinator of Outreach and Community Relations [Vacant]

- Workload: We were fortunate to have hired one of our former graduates as fulltime Coordinator of Outreach and Community Relations (Dana Eriksson, MS) in 2015. The position focused on strengthening outreach and alumni/donor relations in an effort to increase support for the department. During the three years that Dana filled this role, we made advances in the organization and strategies directed toward development and fundraising, as well as establishing three new endowments that provide student scholarships and several planned gifts. After Dana left in 2019 to pursue another interest, we ultimately had to sacrifice our departmental funding for this position in the context of a budget cut in 2020.
- Adequacy: We currently have modest support for development through a .60 FTE position (Radosovic), who was initially hired to assist the Development Coordinator with gift management and stewardship, along with other general operational support. In effect, our development activities are currently in somewhat of a maintenance phase rather than directed toward growth. This is clearly not adequate but was the appropriate sacrifice in the face of limited financial resources.

In summary, we have a small, but excellent administrative staff who support our faculty and students. Our Business Manager essentially covers two positions: the central financial management of the department as well as support for all pre- and post-award grant activities. Additional support in this area, along with the need for a Coordinator of Outreach and Community Relations are high priorities to achieve our highest potential.





Kim Sasser

Administrative Assistant - Building



Andrea Palacio, M.Ed. Undergraduate Advisor College of Science/SLHS



Debra Lavine Office Specialist

Manager





Denise Radosevic Office Specialist - Development Assistant

Clinic Staff



Feday Barakat, M.B.A. Coordinator, Insurance -Medical Billing



Patricia Sanchez Administrative Assistant



Selina Warren-Snyder Administrative Assistant

School of Mind, Brain, & Behavior

IT Support



Peter In-Albon IT Manager School of Mind Brain, & Behavior



Richard Reichenbacher Coordinator, IT/Systems Administration School of Mind, Brain, & Behavior

Business Administration



Jennifer Lawrence, M.B.A. Business and Finance Manager, School of Mind, Brain, & Behavior



UNIT RESOURCES

G. UNIT RESOURCES

The University of Arizona provides many centralized resources that support faculty, staff, and students. As an academic unit, we aim to fully engage and leverage central resources and to develop and maintain resources within our unit that complement and meet our specific needs. The section below is organized in relation to resources that support 1) instruction and learning, 2) research and scholarship, and 3) outreach and information dissemination. We acknowledge the university entities that support our endeavors, including the Office of the Provost, Office of Research, Innovation, and Impact, Facilities Management, and Parking and Transportation Services, as well as the College of Science. We also note that the physical context in which SLHS faculty and staff work and our students learn is important. Although our building is relatively old, it serves us well in many respects, and we devote considerable attention and resources toward building improvement every year as detailed in **APPENDIX G**.

G.1. Support for Instruction and Learning

a. Central Support for Instruction and Learning

- The <u>University Libraries</u> provide a broad range of support across a number of contexts; SLHS faculty and students take advantage of the main library, the science library, and the University Health Sciences Center Library. Each of these physical locations offers excellent study contexts and direct librarian support, but as expected, faculty, staff, and students take primary advantage of materials via electronic access. Remote access via VPN login allows the full range of electronic services; the fully accessible platform has allowed relatively uninterrupted services, even during the pandemic.
- The <u>University Information Technology Services</u> (UITS) provides centralized support for all employees and students, which includes 24/7 access to help via phone or on-line. Beyond email, on-campus wifi, software and security support, UITS offers online and in-person workshops that are relevant for teaching and research, such as training in special skills, including video-editing, data management programs (e.g., Access), and website management (e.g., Drupal). The on-line tutorial training library is extensive and of high quality.
 - UITS provides the classroom material platform <u>Desire to Learn</u> (D2L) to scaffold classroom instruction and support fully distance-delivered courses and programs. D2L easily interfaces with Zoom and Panopto software. During the COVID pandemic, all SLHS courses were offered using Zoom through the D2L platform.
- The <u>Office of Academic Affairs</u> supports Faculty Learning Communities (FLC) that provide a context to learn from one another. SLHS faculty members have been consistently active in these communities since their inception, as noted in **Section E.4**, and we share information with one another in both informal and more structured basis (i.e., optional SLHS faculty sessions focused on teaching methods).
- The <u>Office of Instruction and Assessment</u> (OIA) is a campus resource that supports all faculty, instructional personnel, and researchers to integrate technology into academic activities. Specifically, OIA provides the UA teaching community with resources for course and curriculum design, online course development, program and classroom assessment and evaluation, instructional strategies and learning technologies. OIA also provides workshops, training, and online support for learning management systems and web-based tools.

- OIA support for teaching during the 2020 pandemic has been excellent. They offered a multitude of webinars, on-line resources, consulting services, and support for faculty learning communities specifically directed toward optimizing teaching in a remote format.
- Centrally scheduled classrooms are coordinated by the university through the registrar's office. One such classroom is housed in our building (SLHS Room 205; 80-person capacity). For larger enrollments, SLHS classes are scheduled in other locations across campus. There have been some challenges regarding consistency of room scheduling wherein well-matched teaching spaces from one year did not carryover to a subsequent year. This has required considerable time to address by staff (Student Services Coordinator, Bridgewater) and faculty (Curriculum Chair, Bunton).
 - On a highly positive note, the Office of the Provost has spearheaded the effort over the past ten years to build and convert teaching spaces to provide excellent <u>collaborative</u> <u>learning spaces</u>. As of Fall 2019, the University has 32 collaborative learning spaces. Many of our faculty have been trained in active learning strategies and are consistently scheduled for these spaces.

b. Department Support for Instruction and Learning

• SLHS Support for Classroom Teaching

Within the department, support for teaching includes investment in departmentspecific teaching spaces and the refresh and update of materials for the classroom and clinic.

- Teaching spaces. We have one department-scheduled classroom (Room 409, capacity ~34) that is used for the majority of our graduate-level classes. For many years, that room was in great need of update in order to better facilitate learning, but also from an aesthetic perspective.
- To improve effectiveness/efficiency, we were successful in our application for a costsharing grant from the Provost's office to transition SLHS 409 to a more collaborative learning environment in 2018. With new tables and chairs allowing for a multitude of configurations and new classroom technology, instructors can shift orientation from a traditional "front of the room" configuration to a space that easily allows for small group interaction and didactic instruction. The existing FM loop system was updated and adjustable height tables were added to ease accommodation for students or classroom guests.



Left, SLHS classroom 409 before update. Middle and Right, classroom transformation to more collaborative learning arrangement with updated furniture and technology.

- We have two spaces configured for seminars and/or labs: Rooms 201 and 203 (capacity ~18). These rooms were updated with new projection systems along with individual computer refresh in both spaces. They work well for smaller sized lab experiences including those that take advantage of shared software.
- With the advent of the pandemic, we applied for and received funding from the College of Science to equip a teaching room to provide an optimized context for remote teaching. With two large wall-mounted screens and fully equipped teaching station, this space is useful for both remote live teaching and recording of asynchronous lessons.
- Student materials. Essentially all requests for classroom materials have been accommodated, either through course fees or the use of discretionary funds. For example, this includes purchase of additional anatomical models for classroom and lab study of neuroanatomy and anatomy/physiology of speech and hearing. We routinely refresh and upgrade computers (and electronic tablets) for classes and for clinical record-keeping. Larger-ticket pieces of equipment have been added, such as instrumentation to test vestibular function.
- Instructor support for course preparation. All new instructors are provided with complete sets of course materials from previously taught courses. This foundation provides a supportive basis from which faculty can personalize their course.
- Graduate Teaching Assistants (GTAs): Teaching assistants are an important support for faculty, particularly for large classes and classes with laboratory experiences. The typical GTA assignment is .25 FTE (10 hours/week) for a given class, with allocation determined by course enrollment (1 GTA/50 students). Because our undergraduate enrollment declined during the period under review, the allocation of GTA funds to our department decreased from 17 to 13 GTAs over the 7-year period. This was in contrast to an increase in our graduate enrollment that has grown by about 20%, so the reduced source of graduate student funding is unfortunate. Faculty engagement of undergraduate preceptors to assist with courses increased during the period, so that overall support for faculty undergraduate teaching was not problematic. Additional detail regarding Graduate Teaching Assistants is provided in Section I Graduate Students.

• Support for Clinical Education

- Central Support
 - In addition to all of the Central Resources that are critical to SLHS, our clinical education program engages considerable support from the UArizona Sponsored Projects and Contracting Services for the agreements with clinical practica and externship sites. The Office of General Counsel is also a critical resource in the multitude of contract negotiations related to running our on-campus clinical practice in a manner consistent with university, state, and federal guidelines, including, for example, the Department of Economic Security, Medicare regulations, and individual insurance providers.
 - We greatly appreciate the privilege of designated parking for our clinical operations. Of course, we pay hefty annual fees (\$12,500 for 12 parking spaces), but we could not operate without suitable parking for our patients. We have been well-supported by Parking and Transportation and overall, our needs are met.

- o Department Resources
 - Our on-campus clinic is housed on the 1st and 4th floors of our building, with reception and the business office on the 1st floor. Audiology services are entirely on the 1st floor, along with pediatric speech-language services. Speech-language services for adults takes place on the 4th floor. Each floor includes storage areas for clinical materials and student workrooms. The 4th floor houses two secure rooms (keypad access) for clinical report writing via the dedicated clinial server.
 - Ongoing changes were made to the clinical education spaces throughout the review period, with focused attention from 2015 to 2017 to physical changes and technology updates as highlighted in **APPENDIX G**. This included remodeling the clinical reception area for more efficient business practices in relation to patient check-in and billing, and all clinical rooms received a facelift (paint/carpet).
 - Audiology services were enhanced in 2015-16 with the purchase and installation of two new audiology testing suites. All audiology counseling rooms were updated, and we later renovated a small booth/counseling room for dedicated use for cochlear implant services (2018).
 - We completely changed our observation and video-recording capabilities in 2016, as we installed a new video-surveilance system throughout the clinic (and clinical research areas). The system supports remote observation and enhanced the opportunity for students and clinical faculty to analyze clinical interactions both in real-time and during later review.
 - As we evaluate our clinical setting and consider projected needs, we acknowledge the limitations of an older building that we retrofitted to meet our needs. A notable liability is the presence of only one elevator for the building, posing critical challenges when it needs repair as it disrupts access to our 4th floor clinical areas for people with disabilties. If there were an opportunity to design and build a new building, and if our graduate education program remained comparable, we would aim for a larger space by at least 25% to accommodate our growth and would incorporate architectural design features that suit a clinical service delivery setting. With the more likely scenario that we remain in our current building, we aim to maintain functional and aesthetic aspects of the space along with technology/equipment updates that continue to support quality patient care and secure communication and telehealth.
- Clinical administrative support
 - The Speech, Language, and Hearing Clinic operates year-round and the clinical reception area is a very busy place where clients and research participants check in, payments are collected and processed, and appointments scheduled. As depicted in the organizational chart (see Figure F.1), we employ three clinical staff: the coordinator of insurance and billing and two administrative assisstants who handle all of the direct patient encounters. We have employed student workers at various times when the workload exceeds capacity.
 - It is important to note that the administrative demands placed on the clinical staff has expanded considerably over the past 10 years. The complexities of medical billing and insurance procedures along with advances in protection of medical records have shifted staff responsibilities from the primarily focus on

customer relations to the equally important engagement of technology-based data systems.

The clinical operations that support our graduate education in speech-language pathology and audiology need to be self-sustaining. Funding for the clinical staff, all operations, and payment for goods and services comes from clinical revenue. Prior to the COVID pandemic, we operated within a roughly break-even budget of \$700,000 - \$800,000. Of course, clinical activity changed dramatically during 2020 and into 2021, so that our revenue is at about 50% of the expected. We applied and received some support through the CARES act, but the impact of the shortfall remains a major concern.

G.2. Research Support

a. Central Support for Research

- Of course, our research activities are critically supported by the Office of Research, Innovation, and Impact (RII), along with <u>Human Subjects Research Protecton Program</u>. RII oversees Core Research Faculites, and we note two here that are relevant.
 - Brain Imaging Facilities: Magnetic Resonance Imaging is available to SLHS researchers for both structural and functional neurimaging. We have access to a Siemens Skyra 3T scanner with Syngo MR that is part of the Translational Bioimaging Resource (TBIR) housed in the basement of the Biosciences Research Labs (BSRL), which is within walking distance from SLHS. The 12,000 sq. ft. TBIR serves as a university-wide resource for pre-clinical biomedical imaging. SLHS faculty are among the multidisciplinary cohort who worked together to promote and plan for the imaging resources; other units include Psychology, Radiology, Biomedical Engineering, Psychiatry. The space includes all of the necessary testing rooms, changing rooms, and space for data management, as well as radiology technicians to support the imaging procedures.
 - Animal Facilities. We only have one faculty member who needs animal facilities, Dr. Julie Miller, with shared appointment in Neuroscience; however, the availability of support for animal research is important for the potential needs of future research faculty members.
- Central Computing and Statistical support
 - The University Information and Technology Services (UITS) provides site licenses for a wide array of programming and statistical software. Within UITS, the Research Computing Support Services office provides assistance with research design, statistical analysis and interpretation to faculty and mentored graduate students at no cost. These statistical consulting services are available to support preparation of grant proposals, thesis or dissertation research, or when writing result sections of papers, or responding to reviews. This is a highly valued service for our faculty and students, especially because there is no statistical support within the Department itself. Given that this is a central support service, the consultants do not have the available time to serve as collaborators on grant proposals.
 - Statistical support is also available through the <u>Statistics Consulting Laboratory</u> (StatLab) which operates within the University of Arizona Bio5 Institute for Collaborative Bioresearch. StatLab provides "statistical expertise, personnel, and computing resources to facilitate study design and conduct, data acquisition protocols, data analysis, and the preparation of grants and manuscripts." A number of faculty have taken advantage of

these services, which have significant costs associated, using start-up or grant funds.

b. Department Support for Research

Research Space

With total square footage of about 30,000 square feet usable space, we do not have excess room in our building, but we have been able to meet faculty needs for separate office and research spaces. Space is allocated to all research faculty in line with the nature of the work, and space allocations shift as some projects end and others begin or expand. Some faculty share common lab spaces with shared equipment (e.g., Speech Lab: Bunton, Hoit, Story). Faculty collegiality is exceptional regarding use of space, but many would rapidly expand their research space in productive ways if it were available. This includes the areas where PhD students work. While all PhD students have office space, it is not always ideally located in relation to research activities.

• Staff Support for Grants

- Department support for research is required for pre-award activites (grant preparation, submission) and post-award needs including budgetary oversight and personnel. We have made significant improvements in support for the procedural aspects of grant submission over the years; however, grant support comes from our SLHS Business Manager who has a whole host of other responsibilities as noted in the preceding Section F. Unit Administration. To address this problem, we have added parttime support for the business office to offload some responsibilities from the Business Manager. The restricted departmental support for grant processes places excess workload on the Principal Investigators to address non-scientific aspects of grant preparation and maintenance, and there is little effort allocated to proactive efforts to support grantmanship at the department level.
- A mitigating factor in relation to limited staff support for grants comes from the high level of peer support for grant preparation within the department. Most of our funded researchers also have experience on grant review panels, so there is a wealth of knowledge shared with colleagues. Peer-review of grant proposals is a valued activity and is credited on annual performance reviews.

G.3. Support for Outreach and Development

a. Support for Outreach

Central support for development and outreach comes from the College of Science Development Office and the University of Arizona Foundation. The College-level support has increased over this review period, so there is consistent communication regarding gifts to the department and there is focused attention toward Alumni Relations. The three fulltime Development Officers in the college offer excellent support for large donors and planned giving; they are highly colleagial and easily accessible for advice. The addition of marketing personnel in the college has also provided excellent support for targeted media distribution and occasional graphic design support. SLHS also takes advantage of the alumni and donor database maintained by the University Foundation. What is lacking, in our view, is college or university-level support to individual units to provide guidance and assistance in the cultivation and maintenance of small donors which is a large pool for us given our large number of alumni. Department Support for Development: There are no central funds to support development personnel at the unit level, so we have covered the costs with limited discretionary funds. For most of the period under review, we combined development and outreach with event planning (along with building management for a number of years). This was admittedly an overload for one individual, but we made particularly good progress from 2016-2019, with Dana Eriksson in the position. As noted in **Section F.4**., our Coordinator of Development and Outreach position is currently vacant due to limited funds, so we have distributed duties across other staff members including .60 FTE allocated to support the Department Head with outreach. We certainly have a vision to amplify our work this area, but we do not have the resources.

G.4. Technology and Website Support

a. Department Information Technology Support

As referenced above in the teaching and research resources sections above, the University Information and Technology Services provides all of the central IT support for the university. The Speech, Language, & Hearing Sciences Information Technology is part of the School of Mind, Brain, and Behavior Information Technology (MBBIT) group providing support to SLHS, Psychology, Cognitive Science, and Neuroscience. Our department was actively involved in the organization of the MBBIT unit as it was implemented in 2014. The professional members include IT manager (Peter In-Albon) and Coordinator Information Technology and Systems Administration (Richard Reichenbacher), who both work out of offices within SLHS; there are two additional IT Support Analysts located in the Departments of Psychology and Neuroscience. IT Manager (In-Albon) allocates .33 FTE to management of the School (along with some support to the college) and .66 is directed specifically to SLHS department needs. The Coordinator of IT Systems Administration (Reichenbacher) allocates .35 FTE to SLHS, which includes network support for researchers.

MBBIT includes multiple levels of infrastructure that include digital and physical security, with security screening and training for IT personnel. Within SLHS, training includes human protection and HIPAA training. The physical location of servers and data storage are in alarmed areas with limited access. Backups are maintained by multiple layers of digital and physical copies in a main data center and remote backup data center. Data are also protected by enterprise level encryption, virus, and malware services. In addition, system monitoring, logging and patch management is supported by enterprise level systems.

Use of all computing systems and clinic technologies is governed by security policies and procedures set forth by the university, the department, and our clinical program. This includes compliance with federal guidelines for the protection of human subjects and HIPAA guidelines. IT Manager (In-Albon) works closely with SLHS HIPAA compliance officer (Janet Hawley) to assure annual training, compliance, and systems review, as well as on-going monitoring.

In addition to the provision and maintenance of our IT system, we have been so fortunate that Peter In-Albon provides excellent support at an individual level to all faculty and staff, as well as some graduate students. He provides guidance and oversight of the broad range of computing and technology needs ranging from purchase of new computers, data storage procedures for researchers, and troubleshooting for equipment and software. He provided critical support as we reviewed and purchased a new video surveillance system to support our clinical education program, and was responsible for installation and
security procedures for its use. In-Albon works closely with IT Systems Coordinator (Reichenbacher) who oversees network operations and all computing accounts for students and employees.

b. Website Support

- There is no question that the online representation of the department via our website is critical. Central support for website development was modest for many years, but there is now a full range of fee-based services through the university team at <u>Campus Web Services</u>. We invested in this resource to rebuild our website about five years ago and have appreciated the excellent security and consistency with UArizona branding. See <u>https://slhs.arizona.edu</u>
- The task of maintaining and updating the website content is distributed across a small number of faculty/staff (Casteix, Rising, Beeson, Bridgewater), along with periodic support from UASites. We complement our website communications with an active FaceBook page, Instagram, and (less active) Twitter account overseen by clinical faculty member, Jennifer Casteix. Website support is certainly somewhat limited at the department level and would benefit from increased allocation of resources, if available.

To summarize, our primary needs include increased staff to support department operations and research activities, as well as outreach activities. With increased resources in these areas, we would anticipate the following enhancements to our department's quality: (1) greater faculty research productivity and continued external funding success; (2) success in retention of our strong faculty members; (3) growth of doctoral and post-doctoral programs, (4) stronger donor relations and giving to the department.



UNDERGRADUATE STUDENTS DEGREE PROGRAM AND OUTCOMES

H. UNDERGRADUATE STUDENTS, DEGREE PROGRAMS AND OUTCOMES

H.1. Undergraduate Degree Program Description

The Department offers one undergraduate degree program leading to a Bachelor of Science in Speech, Language, and Hearing Sciences. The program is consistent with the National Center for Educational Statistics Classification of Instructional Programs (CIP) as follows:

CIP Code 51.0201: Communication Sciences and Disorders, General.

CIP Definition: A program that focuses on the application of biomedical, psychological, and physical principles to the study of the scientific bases, development, and treatment of speech, language, hearing, and cognitive communication problems caused by disease, injury, or disability. Includes instruction in language science, hearing science, speech and voice science, biology of communication, behavioral linguistics, psychology, and applications to the development of diagnostic and rehabilitative strategies and technologies.

Our undergraduate curriculum reflects our goals to provide excellent foundational education that includes a strong understanding of human communication and its disorders. As stated in our undergraduate student handbook, our coursework is designed:

- to promote critical thinking, writing skills, and problem-solving abilities
- to provide a strong, foundational understanding of speech, language, and hearing sciences
- to develop understanding of communication disorders that supports performance in any
 professional endeavor and prepares students who continue their education with advanced
 degrees in audiology; speech-language pathology; speech, language, and hearing sciences; or
 related areas.

H.2. Contribution to General Education

The study of human communication and its disorders has broad appeal and relevance to undergraduate students regardless of their major. We offer a survey course (SLHS 207: Survey of Human Communicaton and Its Disorders) that is open to any student, ranging from the first-semester freshmen considering a major in SLHS to seniors majoring in another field. It is not uncommon for majors and non-majors alike to indicate an interest in communication disorders due to a personal experience with family member or friend with a communication disorder. The survey course is not a designated General Education course in order to keep the enrollment options as open as possible. We currently have three other classes with broad appeal that fulfill General Education requirements.

General Education Classes offered by SLHS

Tier 2 Natural Science General Education Courses

- SLHS 263 World of Sound (3 units) Velenovsky (syllabus)
- SLHS 270 Scientific Thinking in Speech and Hearing Sciences (3 units) Cone (syllabus)
- Tier 2 Individuals and Societies General Education Course
 - SLHS 255 Hearing, Health, and Society (3 units) Wong/Marrone (syllabus COVID revision)

For our general education courses, as well as the entire curriculum, content is updated each semester that classes are taught. This reflects revisions and updates prompted by the faculty in response to advances in the field, student feedback, self-appraisal of the course by the instructor, feedback from colleagues, and input from the Department curriculum committee. Our faculty are highly self-motivated and are constantly working to improve and update classes, such as participating in faculty learning communities and participating in teaching workshops offered on campus. Undergraduate curricular issues are discussed during faculty meetings on a regular basis, and the chair of the curriculum committee also interacts routinely with our undergraduate advisor who provides another source of input and feedback from students and other academic advisors on campus. Finally, all faculty interact with undergraduate students in a myriad of formal and informal contexts, so access to student feedback is easily provided.

The World of Sound (SLHS 263) was designed about a decade ago to introduce students to the physical nature of sounds and how they are produced by talkers, singers, and musical instruments, as well digital representations of these sounds. They learn the basics of how the human auditory system processes sound. A complementary course entitled Hearing, Health, and Society (SLHS 255) delves into hearing health and disorders in a broad societal context. Students are introduced to the World Health Organization framework for functioning, disability, and health. These courses have broad appeal while provided excellent background knowledge for those who major in SLHS. The course on Scientific Thinking was designed to provide students with an introduction to the scientific method and its application in the world today. It was a popular class for a number of years, but with the proliferation of a wide array of general education classes, interest in this class has waned for the past several years. We think that it is no longer hitting the mark as a general education class, so it was cancelled for Spring 2020. Of note, the general education requirements for the university are currently under revision (as described in the <u>General Education Refresh</u>) so as we consider thoughts regarding our course offerings, we are staying abreast of the emerging new initiatives.

As with all general education classes, those in SLHS are writing intensive. Writing assignments include the opportunity for revision as part of the educational experience (see **TABLE H.2.a.**). Course content addresses overarching educational goals to think critically, communicate effectively, understand and value differences, and use information effectively. As depicted in **TABLE H.2.b.**, these skills are introduced and there are multiple opportunities for repeated practice over the course of the semester. Mastery of these student learning outcomes is not expected in these Freshman/Sophomore level courses, rather the expectation is that skills will continue to develop over the course of the undergraduate career. For that reason, "assessment" of skill mastery is not included at this level, rather objective content-based measures of mastery are included in these courses.

		Are comments on the first dra writing assignment provided opportunity for revision?	aft of at least one to students with an
Course prefix and number	Number of pages of writing required in the course	YES	NO
SLHS 263 World of Sound	12	Х	
SLHS 270 Scientific Thinking in Speech and Hearing Sciences	12	Х	
SLHS 255 Hearing, Health, and Society	12	Х	

TABLE H.2.a. Genera	Education	Course	Writing	Requirer	nents
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Course profix and	General Education Program St	udent Learning Outcomes		
number	Think Critically	Communicate Effectively	Understand and Value Differences	Use Information Effectively
SLHS 263 World of Sound	Introduce (in class activities)	Practice (writing assignments)		Introduce (in class activities)
SLHS 270 Scientific Thinking	Practice (take-home/homework assignments, in-class problem solving activities)	Practice (take-home/ homework assignments)		Practice (in-class problem- solving activities, take- home/homework assignments)
SLHS 255 Hearing, Health, and Society	Introduce (in-class activities, writing assignments)	Practice (writing assignments)	Practice (in-class activities, writing assignments)	

TABLE H.2.b. General Education Student Learning Outcomes Assessment

Introduce: bring the outcome into use or operation for the first time

Practice: repeated opportunities to demonstrate an outcome so as to acquire or maintain proficiency in it Assessed: learning outcome is measured and data recorded

SLHS Writing Emphasis Course

Writing skills are addressed to some extent in essentially all of our classes, but there are three courses in the major that deliberately focus on writing skill development (SLHS 340, 362, and 473). Our writing emphasis course, SLHS 362 Neurobiology of Communication, is complemented by two other courses that include significant writing activities. As highlighted below, these courses all aim to facilitate student writing. Faculty interaction and communication has affirmed the value of this sustained and incremental focus on writing in our context area(s).

SLHS 340 Language Science (Kapa)

• Four writing assignments are included to teach students how to summarize/review a scientific article. The writing is sequenced as follows, summary of 1) Introduction, 2) Method, 3) Results/Discussion, and then 4) Full Article review. These activities comprise 22 points of 200 course points.

SLHS 362 Neurobiology of Communication (Kielar) – Designated Writing Emphasis Course

- Graded writing project: Paper 1 (20 points) receives extensive feedback.
- Graded writing project: Paper 2 (60 points) receives extensive feedback, then revise and rewrite.
- Learning American Psychological Society (APA) publication guidelines (30 points)
- Short concept tests off-line formulation of written responses to questions that require higher order thinking (40 points)
- Discussion board read, think, share written thoughts (20 points)
- A total of 170 points come from written assignments.

SLHS 473 Communication Disorders II (Fabiano-Smith)

• Three case study write-ups (50 points each) – 150 of 300 points total course points. Expected writing proficiencies build upon expectations of SLHS 362.

To our surprise, this current self-review revealed that our designated writing emphasis course (SLHS 362) fell below the expectation of 50% credit from writing in that class. This shift was inadvertent. We note, however, that SLHS 473 does meet the 50% writing expectation. We are currently evaluating how to remediate this issue. In the short term, we increased the writing activity in SLHS 362, but we also

want to explore whether the writing requirement might be distributed across more than one course in the undergraduate curriculum. In our view, distribution of writing emphasis over two or more courses would benefit both students and instructors.

H.3. Undergraduate Program

Our undergraduate program provides a broad educational background that includes an understanding of the biological, physical, acoustic, and cognitive aspects of human communication. Students gain knowledge of communication disorders across the lifespan, and are well prepared for a host of career options including the professions of speech-language pathology, audiology, or SLH sciences.

H.3.a. Enrollment Trends

Whereas enrollment in the SLHS major steadily increased during the last APR period from 118 to 342 (2006-2012), there has been a decline over the current period from 372 to 241 (2013-2019) (See **TABLE H.3.a.**). The reason for the decline is not readily apparent, so we speculate regarding possible contributing factors: an increase in the math and science requirements for the SLHS major and the addition of an attractive major in neuroscience/cognitive science.

•					ajor ana ec			
	Academic Year	2012-13	2013-14	2014-15	2015-16	2016-17	2017-18	2018-19
	Fall enrollment census	372	327	326	315	239	244	241
	Degrees completed	92	93	77	105	80	47	70

TABLE H.3.a. Undergraduate Student Enrollment in SLHS Major and Completion over Time

Over the course of 2013 and 2014, we made changes to our degree requirements that had the effect of increasing the science and math preparation for students in the SLHS major. In Fall 2014, we added a Physical and Biological Science requirement within the major. Students are required to take a course in Chemistry or Physics (4 units) and a course in Biological Science (from Molecular & Cellular Biology or Physiology). This replaced the Tier 2 general education requirement and had the desired effect of assuring that students receive foundational science coursework prior to their focus on speech, language, and hearing sciences. In Fall 2014, we changed our Math requirement so that a course in basic calculus was required (Math 113 Elements of Calculus). Prior to this change, students could meet the requirement with cousework in algebra and trigonometry, without advancing to basic calculus. In effect, these two changes increased the general education load for SLHS majors. As a faculty, we were (and still are) entirely supportive of the increased background in science and math as they better prepare students to master the science of our discipline. The changes may have more clearly signaled the focus on science in our degree program, and possible dissuaded some prospective students. Another possible factor influencing the number of SLHS majors may have been the development of the undergraduate neuroscience/cognitive science (NSCS) within the College of Science, which became available in Fall 2013. While there was no evidence of a shift of students from SLHS to the NSCS major, the NSCS major may have attracted prospective students who might otherwise have selected SLHS. Overlapping interest in NSCS and SLHS is apparent in the relatively large number of students in the NSCS program who pursue opportunities to work in research laboratories within SLHS. To be clear, our department is strongly supportive of the NSCS program, and SLHS faculty were involved in the development of the degree and contribute to the courses. In our view, students with an NSCS degree are well prepared to pursue graduate education directed toward the science of our fields. We continue our close interactions so that

pursuit of a PhD in SLHS is among the options that NSCS graduates might consider.

It is important to note that as enrollment peaked at the end of the last APR, we were having difficulty with course availability as undergraduate class sizes were well over 100 students and classes had wait lists. Given the relatively small size of our faculty, and the limited availability of potential adjunct faculty from the community, we had concerns regarding how to address the needs of increasing enrollment. As the number of students in the major moved back toward 300 – 320, we were able to meet course availability needs; however, the decline below 300 that began in 2016 is a concern and we have increased our focus on undergraduate recruitment as noted below.

H.3.b. Undergraduate Curriculum

The SLHS undergraduate curriculum is designed to provide basic knowledge in communication sciences and disorders and to prepare students for graduate study that leads to clinical certification and licensure in either Audiology or Speech-Language Pathology, or for graduate research degrees. In the broader perspective, the Department seeks to produce graduates who are scientifically knowledgeable, who are professionally literate, and who understand the impact of science on human function and human interactions.

To complete the Bachelor of Science degree, students must meet all the general education requirements for the 120-unit degree. As detailed on our <u>public SLHS website</u> and in the <u>undergraduate</u> <u>student handbook</u> (called the Cactus Book), the general education requirments include English composition, mathematics, social science, physical science, and biological science. Students in SLHS are also required to take a statistics course. The B.S. degree in SLHS requires 33 units of coursework in the major with a minimum GPA of 2.0. As shown in **TABLE H.3.b**, there are seven courses that focus on foundational knowledge in the field, and three courses provide clinical application of the material. Students also have the opportunity to take a number of elective courses to enhance their knowledge and provide learning opportunities outside the classroom. Students are required to complete a minor, either taken in a single department or as a collection of thematically related coursework distributed across several departments.

SLHS is committed to **student engagement** beyond the classroom, and we have a number of individualized learning experiences available for academic credit. This includes independent study (SLHS 399/499), directed research (SLHS 391/491), undergraduate preceptorship (SLHS 491), and the senior capstone experience through our clinical assistant program (SLHS 459/459). These courses are identified for students specifically as part of the University of Arizona's <u>student engagement program</u>. As such, they meet all of the requirements for approved engaged learning experiences.

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TABLE H.S.D. Coursework in the SLHS Ondergraduate Major								
Required Courses in the SLHS Major (number of credits)								
Foundation Knowledge in Speech, Language, and Hearing Sciences								
SLHS 261 Anatomy and Physiology of the Speech Mechanism*(4) – Laboratory included								
SLHS 267 Acoustics for the Speech and Hearing Sciences* (3)								
SLHS 340 Language Science* (3)								
SLHS 362 Neurobiology of Communication* (3) – writing emphasis course								
SLHS 367 Phonetics for Clinical Practice* (3)								
SLHS 380 Hearing Science* (4) – Laboratory included								
SLHS 441 Language Acquisition* (3)								

Clinical Application Courses
SLHS 473 Communication Disorders II* (3)
SLHS 477 Communication Disorders I* (3)
SLHS 483R Principles of Audiology* (3) & 483L Audiology Laboratory (1)
Optional/Elective Courses in the SLHS Major (number of credits)
SLHS 207 Survey of Human Communication and Its Disorders* (3)
SLHS 255 Hearing, Health, and Society (3) – Gen Ed course
SLHS 263 The World of Sound (3) - Gen Ed course
SLHS 270 Scientific Thinking in Speech and Hearing Sciences (3) – Gen Ed course
SLHS 435 Bilingualism, Multiculturalism, and Nonmainstream Dialects* (3) (new 2013)
SLHS 454 Audiologic Rehabilitation across the Lifespan* (3)
SLHS 471 Speech Sound Disorders* (3)
SLHS 496A Seminar: Advanced Clinical Observation, Analysis, & Writing* (1)
Individualized Learning Experiences (variable credit allowed) (bold indicates engagement course)
SCI 195A Student Success Strategies for Speech, Languange, and Hearing Science Students
SLHS 199, 299*, 399*, 499* Independent study
SLHS 458 Clinical Study in Speech-Language Pathology (Clinical Assistant Program)
SLHS 459 Clinical Study in Audiology (Clinical Assistant Program)
SLHS 492 Directed Research
SLHS 495a Current Problems in Speech, Language, and Hearing Sciences
SLHS 496a Advanced Clinical Observation, Analysis, and Report Writing
SLHS 497 Workshop: Mapping your Future - Planning for Your Career
SLHS 497 Workshop: Accent Modification
SLHS 497 Workshop: Computer Skills for the Research Lab
SLHS 497 Workshop Vocal Health & Voice Use for the Classroom and Clinic
SLHS 498H Honors Thesis*
SHLS 391/491 Undergraduate Preceptorship

*Optional honors credit available

H.3.c. Accreditation

Our undergraduate curriculum is preparatory for graduate study in speech-language pathology or in audiology, and the graduate program is regulated by the Council on Academic Accreditation of the American Speech-Language-Hearing Association. The accreditation process includes documentation that students meet the necessary knowledge and skills outlined by the American Speech-Language-Hearing Association. Our undergraduate curriculum ensures that students meet the <u>ASHA prerequisite course</u> <u>content</u> related to speech-language pathology certification standards. This includes a course in each of the following:

- Biological Sciences (human or animal related)
- Behavioral/Social Sciences
- Physical Sciences (physics or chemistry)
- Statistics

Consistent with the American Speech-Language-Hearing-Association guidelines, the pre-requisite for entry into the Doctor of Audiology program simply requires a bachelor's degree in any discipline.

H.3.d. National Comparison

Our undergraduate program is similar to other nationally ranked programs that are variously titled Communication Disorders and Sciences; Speech-Language Pathology and Audiology; Speech, Language, and Hearing Sciences, and the like. Both Bachelor of Science and Bachelor of Arts degrees are associated with the major, and undergraduate general education typically includes preparation in composition, math, natural sciences and psychological sciences. Most, but not all, programs require an undergraduate course in statistics, as we do.

The major typically requires 32-34 semester units of coursework. Specific courses within the major vary across national programs, but the core requirements are similar because they all aim to provide the prerequisite knowledge and skills necessary for graduate study in the field. The course requirements for the University of Arizona undergraduate degree compare to other top programs as follows:

- Similar to other programs by coverage of the following core content areas
 - Anatomy and Physiology of the Speech Mechanism, Acoustics, Phonetics, Language science, Hearing Science, Overview of Communication Disorders across the Lifespan (2 courses), and Introduction to Audiology.
- Distinct from other programs
 - We have a full course covering the Neurobiology of Communication that prepares students for graduate education in clinical or science careers.
 - We have some unique elective classes, including The World of Sound and Hearing, Health, and Society, as well as a class addressing bilingual/bicultural issues in relation to our field.
 - We have particular strength in student engagement opportunities through directed research, undergraduate preceptor opportunities, participation in research labs through independent study, and community engagement through service-learning activities.

The faculty evaluates the curriculum on a regular basis to make appropriate changes. We do not have any immediate plans to change the curriculum. We are considering how writing is taught across the curriculum and are exploring ways to better support student growth of writing skills.

H.3.e. Course Availability

With regard to the general education requirements, we had some difficulty sequencing coursework in math in order to prepare students for some courses in the major. Specifically, students rely on algebraic and trigonometric principles for our classes in acoustics (SLHS 267), hearing science (SLHS 380), and principles of audiology (SLHS 483). We worked with the Math Department to develop a new course MATH 108 (Modeling with Algebraic and Trigonometric Functions) that includes both college algebra and trigonometry and is specifically designed for SLHS. This was implemented Fall 2019 and will greatly improve students' ability to move forward with coursework in a timely manner.

We do not have problems with course availability. In order to assure that our undergraduate majors get all of the courses they need in a timely manner, our undergraduate advisor controls enrollment in a manner that prioritizes upperclassman. Room scheduling has been challenging at times, but this has improved very recently with changes to the university Room and Course Scheduling policies and procedures. The pathway to course completion in the major is well-sequenced and students can complete the degree in the four-year time frame. Of course, there are some circumstances where a student decides later than usual regarding the major or gets out of sequence for some other reason. To provide students with an opportunity to "catch up" or accommodate a double major, we offer several specific classes during the summer. These classes are not taught by tenure-track faculty so that their summer research time is protected.

- SLHS 340 Language Science Summer Session I
- SLHS 380 Hearing Science Summer Session I
- SLHS 483R&L/583R&L Principles of Audiology (3+1) Summer Session II

H.3.f. Course Consistency

We do not have multiple sections of the same class, but some classes have multiple sections for the lab. They all use the same syllabus with the same learning outcomes. Summer courses are entirely consistent with the equivalent course taught during the academic year.

H.3.g. Active Learning Strategies

The Department offers many learning opportunities that facilitate active student learning within and beyond the classroom. A number of our faculty members have focused on integrating active learning teaching techniques within their "lecture classes" and were approved to conduct their classes in the collaborative learning spaces on campus developed over the past seven years (e.g., Alt, Bunton, Beeson, Kapa, Marrone, Wong).

Our discipline lends itself to case-based instruction as there is a clear correlate to application of concepts to clinical service delivery. For example, the Language Acquistion course (SLHS 441/541) is an active learning course that is taught in a collaborative learning space and delivered in a format that "chunks" lecture time so that it is typically less than 10 minutes at a time. Before class, students have access to lecturettes so that class time can be used to engage with the material and ask questions. Opportunities for applied learning are stressed with this structure. For example, students read about theories of language acquisition before class, then in class, they worked in groups to decide how a daycare might structure snack time in order to best facilitate language (as supported by different



Laura Coco, PhD Student, teaches UG students about noise exposure and its relation to hearing loss using a mannequin to test how loud music is with a sound level meter.

language development theories). The group examples were shared with the class to highlight the main points of the theories and how they look in application.

Another course that integrates engaged learning is the SLHS 255 Hearing, Health, and Society course using activities such as the following: a) students test the output of their headphones while learning about protecting their ears and the potential dangers of noise-induced hearing loss, or b) measuring classroom noise levels with a sound level meter application downloaded to their phones. These types of strategies help to make the material personally meaningful to the students. Furthermore, this past spring (2020), the course also engaged students in a "Citizen Advocacy" project which allowed them to identify a community need, brainstorm practical solutions, and formulate a prototype/blueprint of a product that would address the need. The project allowed students to utilize design thinking principles and to apply learned concepts in a meaningful way for their own community. Student projects demonstrated depth, creativity, and innovation.

We also have courses that incorporate complementary laboratory components to allow for practical application of theoretical concepts. At the undergraduate level three of our required courses include "hands-on" laboratory experiences:

- SLHS 261 Anatomy and Physiology of the Speech Mechanism includes laboratory experience related to physiology of speech production (i.e., application activities to demonstrate how anatomy works to produce speech). This includes the use of existing anatomicalmodels, model building activities (e.g., building larynx from clay), and demonstration of respiratory system analogy (balloon).
- SLHS 380 Hearing Science laboratory provides activities related to the anatomy and function of the auditory system.
- SLHS 473 Principles of Audiology laboratory activities allow students to learn how to use instrumentation to test hearing.

A number of SLHS courses also provide engaged learning through activities beyond the classroom. Observation of clinical activities in our on-campus Speech, Language, and Hearing Clinic is available to students, with the appropriate advance education to protect privacy (HIPAA). Structured observations are part of the seminar entitled Advanced Clinical Observation, Analysis, & Writing (SLHS 496a). There are also opportunities for undergraduates to participate in our Clinician Assistant Program (CAP, SLHS 458/459) that engages students in clinical planning and service delivery through structured mentoring from a graduate student clinician and faculty member. In the CAP program, the undergraduate students have the opportunity to engage in clinical care and learn about what is involved in clinical service. The CAP program has been formalized to allow academic credit for the experience using independent study registration. Clinical observations are also encouraged in a less intensive manner, as clinical observation hours are a prerequisite to clinical work at the graduate level.

All faculty engage students in directed research activities within their labs (SLHS 392/492) and independent study opportunites (SLHS 399/499), which are often "active learning" at its best. These experiences may include opportunities for students to present their work at poster presentation sessions or in other formats. An undergraduate capstone experience is available for students to pursue an individualized project under faculty direction. Students at the undergraduate level also have the opportunity to participate in department colloquium, which is a forum where the faculty and graduate students present research and engage in discussion about topics within the field. Students may enroll in credit for the colloquium series, or simply attend without enrollment. Preceptorships (SLHS 491) are also available that provide undergraduate students with early teaching experience allowing them to operate as non-grading teaching assistants.

Our department also recently experimented with a co-teaching course design in some undergraduate courses to enhance learning and faculty-to-student contact. The SLHS 367 Clinical Phonetics for Clinical Practice was co-taught by Drs. Kapa and Alt in Spring 2020, thanks to a generous minigrant on co-teaching from the UArizona Office of the Provost. This grant supported course redesign to incorporate principles of active learning (e.g., engagement with material, interleaving, exploration) and to execute a

"learning teams" model in a collaborative learning space. The course had a Lead Instructor (Kapa), a Learning Researcher (Alt, whose role is to monitor learning in the course in real time and provide feedback to the team), one Instructional Manager (who relieved the burden of the day-to-day operations from the Lead Instructor), and Internal (3 total) and External (5 total) Learning Assistants, who assisted learners with both in-class and out-of-class practice. The Instructional Manager and Learning Assistant roles were all filled by undergraduate students who had previously completed the course with an A or B grade. The co-instructors are part of a University-wide professional learning community with other educators who are using this model.

H.3.h. Instructional Technology

As a group, our faculty are highly skilled in the use of technology in general, so that the application of technology for teaching is natural. Instructional faculty use a variety of technology within the undergraduate course curricula. Faculty from 17 of our undergraduate course offerings were surveyed regarding the types of instructional technology utilized in their undergraduate courses. All of our faculty utilize the **Desire to Learn (D2L)** online platform to support instruction in undergraduate courses and this was the most common type of instructional technology utilized by faculty. Other common technologies used for instructional purposes included YouTube, Panopto, and Zoom. Some of our larger enrollment courses have also started to integrate response devices (SLHS 207 - Fall 2019, and SLHS 255 – Spring 2020) to create a more interactive environment and to provide the instructor with real-time feedback regarding knowledge attainment. For further description of specific types of technology used, see APPENDIX H. (Data source: Faculty survey conducted on 12/11/2019). Of course, the pandemic required a shift to remote teaching of our entire curriculum beginning in March 2020, so the use of instructional technology drastically increased in every course. The prior, consistent use the Desire 2 Learn (D2L) platform for course information and management provided the scaffolding for transition to synchronous and asynchronous teaching on-line via Zoom technology. As reviewed in Section G, our faculty actively engaged in education to develop and strengthen use of technology and teaching strategies to better meet the constraints of the remote teaching context.

H.3.i. Online Education

We do not have an online curriculum or degree program. Faculty discussions of online curricula have been intertwined with consideration of a post-baccalaurete certificate specifically aimed toward preparation for clinical graduate programs in speech-language pathology and audiology. Such a certificate would target individuals who have undergraduate degrees in areas other than communication sciences and disorders. Our proposal draft for such a certificate was initiated in 2017, with the following description:

- The Postbaccalaureate Bachelor of Science program is designed for students who want to pursue a clinical Master's degree in Speech-Language Pathology, but currently hold a degree outside the speech, language, and hearing sciences discipline.
- Individuals who earned a bachelor's degree or another advanced degree in a discipline other than speech and hearing sciences (also referred to as communication sciences or disorders) are not qualified to apply directly to a Master's degree program in Speech-Language Pathology.
- Completion of the one-year course (Fall, Spring, Summer Session I, Summer Session II, Fall) provides students from outside disciplines with the necessary academic foundation in the biological foundations of speech, language, and hearing; speech acoustics and perception; and physiology and perception, as well as the nature of language, speech and hearing disorders in children and adults and the clinical processes involved in the identification, prevention and remediation of these disorders.

Unfortunately, we were not able to pursue this certificate option as a moratorium was in place for undergradate certificates, and we were not able to gain traction as an "exception." As an alternative, we explored the option of a graduate certificate for this program, but this was not appropriate as the curriculum draws primarily from undergraduate coursework. In our view, the certificate description is relevant to the potential for an online program, as it would have a natural target audience and the targeted coursework is clear.

With the past year of experience of delivering all courses in a remote format, we can more easily conceptualize the work needed to design a fully online certificate program. As with the development of any online program, there is a need for dedicated personnel to design and implement the coursework; we do not have adequate personnel to add to the faculty workload. Again, our experience from the pandemic has provided a clearer view of how we might engage additional professionals (including tapping resources outside of the Tucson area) in order to develop an online program. We also recognize the excellent support available from the office of the <u>Vice Provost of Online and Distance Education</u> and the availability of models provided by current <u>Arizona Online</u> programs.

One other area that might be considered for online education is our graduate level Multicultural/Bilingual Certificate in Speech-Language Pathology and in Audiology. As described in **Section I**, the certificate includes SLHS coursework that might be adapted to be fully online. One challenge is the inclusion of supervised clinical practicum experiences with targeted clinical populations that would need to be addressed in a different manner, possibly engaging qualified clinical preceptors in other regions of the country and the inclusion of telehealth service delivery. In summary, we have the conceptual framework for online certificate program(s) that might be developed in the future if they align with department priorities and Arizona Online guidelines.

H.3.j. Undergraduate Student Handbook

Our <u>Undergraduate Student Handbook</u> is readily available to students from our <u>public website</u>, our internal <u>SLHS resources website</u> for students and faculty, and hard copy versions are available at our front office or from the undergraduate academic advisor. These documents have been reviewed and approved by the Office of Curricular Affairs.

H.4. Undergraduate Students

H.4.a. Quality of Undergraduate Students

The students in our undergraduate program represent a broad range of ability, including many who distinguish themselves by strong classroom performance and engagement in learning and service opportunities outside of class. Data available from standardized college admissions tests (ACT and SAT) show that, on the average, these students enter college with skills in reading, math, writing, and reasoning that are above the 67th percentile (see **TABLE H.4.a.i.**). Using these metrics, the SLHS students appear to be on par with those who major in Psychology, but not as strong as those who chose Linguistics or the larger cohort in the College of Science. We consistently have a large number of excellent students who connect with faculty to work in research labs and clinical contexts, to preceptor undergraduate courses, and to participate in outreach activities. We also have some students who struggle and we make concerted efforts to provide the scaffolding for academic success through our department and university resources.

	SL	HS	Psych	Psychology Linguistic			College of Science		
	Average Average ACT SAT		AverageAverageAverageAverageACTSATACTSATACT		Average SAT	Average ACT	Average SAT		
2012	24.48	1090	23.14	1090	28.13	1178	24.71	1154	
2013	22.62	1102	23.59	1071	25.67	1071	24.94	1147	
2014	23.73	1045	23.11	1081	22.78	1139	25.20	1157	
2015	22.43	1027	23.99	1089	24.67	1146	25.71	1159	
2016	25.60	1184	23.88	1099	27.11	1294	25.76	1163	
2017	23.21	1180	23.74	1156	26.00	1262	25.45	1163	
2018	24.56	1155	24.67	1205	28.25	1230	26.44	1263	
%iles*	76 th	67 th	76 th	74 th	89 th	79 th	79 th	82 nd	

TABLE H.4.a.i. Average ACT and SAT scores for incoming Undergraduate Students

ACT scores out of 36, with an average of about 20. SAT out of 1600, with an average of about 1060. Data not available for Neuroscience. *Percentile scores for 2018 from PrepScholar

Student performance in the classroom is within an expected range, with overall grade point averages around 3.3 (on 4-point scale). As shown in **TABLE H.4.a.ii.**, this is on par with comparison units. The average time to complete the Bachelor of Science degree has been just under 4 years, as expected with most students beginning in August of their Freshman year and ending in May of their Senior year (See **TABLE H.4.a.iii.)**. This timely completion rate affirms our success with course sequencing and availability.

Unit	2012-13	2013-14	2014-15	2015-16	2016-17	2017-18	2018-19		
SLHS	3.36	3.37	3.26	3.36	3.31	3.29	3.39		
Psychology	3.1	3.11	3.14	3.15	3.1	3.12	3.15		
Linguistics	3.39	3.44	3.44	3.36	3.46	3.42	3.43		
Neurosci/Cog Sci	3.74	3.46	3.45	3.43	3.52	3.41	3.56		
College of Science	3.21	3.23	3.23	3.25	3.22	3.14	3.26		

TABLE H.4.a.ii. Average Undergraduate Grade Point Average for B.S. Degree Completions

TABLE H.4.a.iii. Time to Complete Undergraduate Degree

		Year								
	2013	2014	2015	2016	2017	2018	2019	Average		
SLHS	3.98	3.87	4.1	3.95	3.76	4.04	3.96	3.95		
Linguistics	3.7	3.96	4	4.16	3.9	3.99	4.15	3.98		
Psychology	3.96	4.1	4.1	4.04	4.14	4.25	4.01	4.09		
College of Science	4.08	4.06	4.08	4.23	4.26	4.1	4.65	4.21		

While traditional metrics such as those already discussed are helpful in describing the quality of our undergraduate students, we would be remiss not to comment on our students' notable accomplishments and significant contributions in terms of service to the campus and community. We highlight here two strong undergraduate student clubs that are facilitated by students in our

department and focus on service and engagement. The University of Arizona Chapter of the National Student Speech-Language-Hearing Association is led by a team of undergraduate students and an average membership of 65 students who are connected by their interest in the profession. Over the past seven years their accomplishments have included: Fundraising and donating approximately \$5,000 for patient therapy scholarships and supplies for our on-campus Speech, Language, and Hearing Clinic.

- Volunteering with organizations including the Autism Society Southern Arizona, Apraxia Kids Arizona, Make A Wish Arizona, The ALS Association Arizona Chapter, UA Food Pantry, Arizona Schools for the Deaf and Blind, Tucson Buddy Walk, Arizona Chapter American Parkinson Disease Association, and the Child Language Center Wings on Words.
- Establishing study and work groups in conjunction with facilitators and support from Career Services and Kaplan. These groups assist students in studying for tests such as the GRE, and with preparing applications for graduate school (e.g., guidance with personal statements).
- Awarding scholarships for current and future leaders to attend the National Collegiate Leadership Conference.



NSSLHA Undergraduate Students

A new undergraduate student club in our department, Speech-Language and Hearing Cats of Color (discussed more in the next section), was started in 2019. The student initiative to develop and establish this club is another indicator of the quality of our students. While outside of the study period (in 2020), this group has been active in professional leadership with submission of poster abstracts to state and national meetings to discuss efforts related to equity and inclusion in the profession. They have also been invited to participate in University-wide initiatives including representation at a collaborative Town Hall co-sponsored by the University of Arizona and the National Academies of Sciences, Engineering, and Medicine in January 2020.

H.4.b. Gender/Race/Ethnicity of Undergraduate Students

Contrary to undergraduate programs where women are not well represented, SLHS programs in the US are typically dominated by women, and our program is no different. As shown in **TABLE H.4.b.**, we have averaged 94% female versus 6% male students. This is consistent with national averages from about 250 programs nationally in communication sciences and disorders (CSD) contrasts with the gender distribution in the College of Science that is more balanced at 54% female versus 46% male.

	S	SLHS by Academic Year (Fall Data in Percent)						College Science	AZ Census ¹	US Census ¹	Nať l CSD ²
	2012	2013	2014	2015	2016	2017	2018	2018	2019	2019	2018 Report
Gender											
Female	93	92	95	94	95	95	94	54	50.3	50.8	95.3
Male	7	8	5	6	5	5	6	46	49.7	49.2	4.7
Race/Ethnicity											
African American*	2.4	0.6	1.5	1.9	2.5	3.3	2.9	4.7	5.2	13.4	-
American Indian/ Alaska Native*	0.8	0.6	0.6	0.3	0.4	0.8	1.7	1.3	5.3	1.3	-
Asian American*	3.8	4.6	7.1	7.1	5.5	4.5	3.8	8.2	3.7	5.9	-
Hispanic/Latino*	26.0	27.4	29.1	32.1	28.7	31.8	30.7	29.4	31.7	18.5	-
Pacific Islander*	0.0	0.0	0.0	0.3	0.4	0.0	0.0	0.2	0.3	0.2	-
Two or more races*	4.6	5.2	7.4	4.2	4.6	5.4	5.9	5.6	2.9	2.8	-
*Subtotal Students of Color	37.6	38.4	45.7	45.9	42.1	45.8	45	49.4	48.9	41.8	29.5
White (non- Hispanic/Latino)	61.5	60.9	53.4	53.2	56.5	53.3	53.4	49.0	54.1	60.1	69.5
Unreported	0.8	0.6	0.9	1.0	1.3	0.8	1.7	1.5	-	-	-
Nonresident (Internat'l Students)	0.8	0.6	0	1	0.8	0.8	1.2	9.9	13.3	13.6	1.0

TABLE H.4.b. Gender and Race/Ethnicity of Undergraduate Students (shown as percent)

¹ <u>United States Census Bureau Quickfacts</u>. Estimated population, July 1, 2019, for state of Arizona and US as a whole.

*Students of Color as defined by <u>UAIR Enrollment Fact Book</u>.

TABLE H.4.b. provides race/ethnicity data for our undergraduate students over the past 7 years. It is noteworthy that diversity has changed over time as reflected by the increase in the proportion of students of color from 37.6 to 45%. Recent proportions are relatively comparable to the College of Science (49.4%) and the state (48.9%), and we have greater diversity than the average undergraduate program in our discipline (37.6%). The proportion of Hispanic/Latino students (30.7%) is on par with the state proportion of (31.6%), but the representation of Native American students is low (1.7%) in relation to the state proportion (5.3%).

² <u>2019 Communication Sciences and Disorders (CSD) Education Survey</u>. 2018-2019 Academic Year

Activities Supporting Recruitment and Retention of Students from Underrepresented Groups

Our faculty have long-standing involvement in supporting undergraduate students from underrepresented backgrounds. As noted in our faculty review, many members have provided student mentorship research through laboratory rotations and programs such as the Minority Access to Research Careers (MARC), Arizona Science **Engineering & Math Scholars** (ASEMS), and Border Latino & American Indian Summer **Exposure to Research** (BLAISER). Additionally, SLHS faculty members are dedicated to expanding access to care for underserved populations. This



Speech-Language Hearing Cats of Color Inaugural Executive Board (2019-2020).

commitment provides opportunities to undergraduate students for participation in 'high impact activities.' A recent consensus report titled, "Transforming STEM Education in Hispanic Serving Institutions in the United States" identified themes and critical focus areas for improving STEM education at Hispanic Serving Institutions. One of the themes focused on research training and high impact practices, recommending that these experiences should be culturally relevant to the students, including challenges that Hispanic communities face (Lozano, Franco, and Subbian, 2018)¹. Our department is committed to serving our communities on a national and local level and this is reflected in our clinical services and research expertise. These culturally relevant experiences including research with bilingual communities and others facing health disparities have attracted many undergraduate students from underrepresented backgrounds to our department and provide opportunities for them to learn and serve in a way that can be both personally and professionally meaningful.

As stated earlier, our department formed an Equity and Inclusion committee in 2017. This group has been extremely active over the past several years. One of the primary goals of this committee has been to support and engage students from underrepresented backgrounds who are interested in the field of speech, language, and hearing sciences. Given the paucity of diverse professionals in the field, this committee has focused efforts on undergraduate student recruitment, hoping to increase the pipeline from undergraduate students to graduate students and then professionals. The Success Targeting Academic Readiness (STAR) Project was executed in 2018 (Led by faculty members Wong and Hernandez). The objectives of this project include:

- 1. Identification of student needs and potential barriers to college success and career readiness.
- 2. Identification of already existing resources that could help to foster student success.
- 3. Development of new resources to help foster academic success and career readiness.
- 4. Increasing knowledge of students, faculty, and staff members of available resources.

¹ Lozano, Guadalupe and Franco, Marla and Subbian, Vignesh, Transforming STEM Education in Hispanic Serving Institutions in the United States: A Consensus Report (April 12, 2018). Available at SSRN: https://ssrn.com/abstract=3238702. or http://dx.doi.org/10.2139/ssrn.3238702

Outcomes of the STAR project included identification of facilitators/barriers to student success, areas of need, existing resources on campus, and potential collaborators in other units. Information found was disseminated to faculty members at our departmental meetings and to students in-person and through informational hand-outs on our department website. See Undergraduate Resources tile at: https://slhs.arizona.edu/students/undergraduate-experience

Efforts toward diverse student recruitment and retention have been spearheaded not only by faculty and staff, but also by undergraduate students themselves. In the summer of 2019, undergraduate student leaders in the SLHS department developed a new university club, Speech-Language and Hearing Cats of Color (Club Advisor: Wong). This club seeks to provide a space for underrepresented students and allies where they can find community and connect with other students interested in the profession. This club also engages in outreach activities including recruitment at high schools in our community and has strengthened our department's connection with other cultural centers on campus, such as the LGBTQ Affairs Center. The SLHS department has also supported student leaders interested in developing skills related to leadership and diversity with a new engaged learning course titled, "Exploring Leadership and Diversity in Speech, Language, and Hearing Sciences." This project-based leadership experience, for which students were able to enroll in independent study credit, provided an avenue for professional development and allowed students to explore topics at the nexus of leadership and diversity within the profession. It also served as a 100% engagement experience for students. This course provided intensive mentoring, leadership training, and the opportunity for undergraduate students to dialogue with faculty and leadership within and outside of our institution.

H.4.c. Honors Students

The SLHS Department has good representation of honors students, and the majority of undergraduate courses offer the option to enroll for honors credit as indicated in **TABLE H.3.b.** Overall, about 12% of our undergraduate students are in the Honors College (see **TABLE H.4.c.**). This is comparable to the Department of Psychology but falls below the proportion in the College of Science overall (20.3%) and the Neuroscience/Cognitive Science degree program (43.4%). The NSCS program attracts a large number of honors students, including many pre-med students. Our faculty are also engaged in mentoring NSCS students; for example, there are currently five NSCS students completing their honor's thesis under the mentorship of SLHS faculty. These students will show up as Honor's students under NSCS, rather than SLHS. Our faculty are happy to contribute to the MBB program.

With regard to student recruitment, many of our faculty are involved in Honors College activities and our Undergraduate Committee actively contributes to the College of Science undergraduate outreach. We have increased the composition and scope of the Undergraduate Committee over the past three years to assure that we engage in available recruitment activities, as well as our own outreach. As is evident in the review of faculty activites, we have strong involvement in a broad array of university level programs for undergraduate students that expose them to the major, including, for example, the Undergraduate Biology Research Program (UBRP). We also provide guest lectures in related units, such as Linguistics, Psychology, Education, Neuroscience, and the School of Medicine. As described below, we also support our student groups in their outreach activities.

Year	SLHS		Psychol	logy	Lingui	stics	Neuroso	cience	College of S	cience	
(Fall)	Honor/Tot	% Honor	Honor/Tot	% Honor							
2012	51/372	16.3%	232/2040	11.4%	43/144	29.9%	126/293	43%	1,248/6,139	20.3%	
2013	37/327	9.9%	224/2040	11%	43/160	26.9%	165/371	44.5%	1,314/6,491	20.2%	
2014	41/326	12.5%	206/1934	10.7%	34/157	21.7%	196/458	42.8%	1,334/6,768	19.7%	
2015	35/315	10.7%	192/1795	10.7%	32/140	22.9%	200/485	41.2%	1,336/6,875	19.4%	
2016	34/239	10.8%	208/1815	11.5%	43/148	29.1%	198/477	41.5%	1,344/6,764	19.9%	
2017	29/244	12.1%	220/1873	11.7%	37/121	30.6%	244/513	47.6%	1,431/6,969	20.5%	
2018	31241	12.7%	231/1980	11.7%	38/126	30.2%	252/592	42.6%	1,565/7,141	21.9%	
Avg	37/295	12.1%	216/1925	11.2%	39/142	27.3%	197/456	43.4%	1,367/6,735	20.3%	

TABLE H.4.c. SLHS Majors in the Honors Program in relation to other Units

H.4.d. Undergraduate Advising

We have a fulltime academic advisor who is committed to guiding undergraduate students toward successful completion of the degree. All students are scheduled to meet with the advisor on an individual basis at least one time per semester. These meetings provide an opportunity to assure that students understand the degree requirments and that they stay on target with regard to general education, the major and minor coursework. One-on-one meetings allow the advisor the opportunity to understand the needs and interests of individual students and to make specific recommendations. The advisor provides frequent email communication to all students with information related to opportunities, deadlines, and the like. Group advising opportunities are also available, and students can schedule additional meetings with the advisor whenever they have a concern. As appropriate, the advisor engages faculty members to provide advice. The advisor works closely with the chair of the curriculum committee (Bunton) so that there is good alignment between the planned course sequence and advice.

During their first semester at UArizona, new majors and transfer students are encouraged to take a course designed specifically for SLHS majors: SCI 195: Student Success Strategies taught by our Academic Advisor. The course provides structure for group advising and an overview of the SLHS major and opportunities for independent/elective experiences. There have not been any barriers or challenges related to advising.

H.4.e. Graduation Outcomes and Views of Program

A survey is sent to graduating seniors within a week of finishing their final semester. Students are asked to rate their proficiency related to three core learning outcomes, to provide feedback regarding their undergraduate experience, and to indicate their post-graduation plans. As shown in **TABLE H.4.e.i.**, students judged their learning to be good to excellent in relation to overarching objectives.

	Average student rating *(1 = Excellent)
Outcome 1. Students will demonstrate knowledge of basic human	1.53/5.0
communication including the appropriate biological, neurological,	Range: 1 - 3
acoustic, and linguistic bases.	
Outcome 2. Students will demonstrate application of knowledge of basic	1.46/5.0
human communication to human communication disorders.	Range: 1 - 3
Outcome 3. Students will communicate effectively using written materials.	1.48/5.0
	Range: 1 - 3

TABLE H.4.e.i. Student Judgment of Learning (as detailed in Taskstream) 2017-20

*5-point rating scale, where 1=excellent; 2=good; 3=average; 4=poor; 5=terrible

As shown in **TABLE H.4.e.ii.** the vast majority of our undergraduate students plan to attend graduate school (75%). This is consistent with faculty perception that most students are preparing for careers in speech-language pathology or audiology. We also note that 8% of students pursue the speech-language pathology assistant program, a good career alternative.

TABLE H.4.e.ii. Reported Plans for Post-Graduate Activity (2017 – 2020)

	Percent
Employment	18.6%
Graduate or Professional School	75%
Volunteer Activity	1.8%
Speech-Language Pathology Assistant Program	8%

Other options in survey receiving 0% were Starting or raising a family, military service, other.

H.5. Undergraduate Student Learning Outcomes Assessment

In the broad perspective, the educational mission of the SLHS undergraduate program is to provide academic and pre-clinical education to students that is sufficient to master foundational knowledge and skills necessary for advanced learning at the graduate level. Learning objectives are tied to the standards set by the American Speech-Language-Hearing Association (ASHA) that are to be fully achieved at the graduate level. By the completion of the program, undergraduate students are expected to:

- 1. Demonstrate understanding of basic principles of biological and physical sciences, mathematics and the social and behavioral sciences. (ASHA Standard III A)
- 2. Demonstrate knowledge of basic human communication and swallowing processes, including their biological, neurological, acoustic, psychological, developmental, and linguistic and cultural bases. (ASHA Standard III B)
- 3. Demonstrate knowledge of the nature of speech, language, hearing, and communication disorders and differences and swallowing disorders, including the etiologies, characteristics, anatomical/physiological, acoustic, psychological, developmental, and linguistic and cultural correlates. (ASHA Standards III C)
- 4. Demonstrate basic understanding of principles of assessment and intervention over the range of communication disorders specified in the current scope of professional practice for audiology and speech-language pathology. (ASHA Standard III D)
- 5. Demonstrate adequate writing skills for scientific and clinical report writing. (Standard IV B)

Consistent with University of Arizona expectations, student learning outcomes have been reported and evaluated using the Accountability Management System (AMS) in Taskstream since its implementation in 2017. We have worked hard to establish assessment methods that provide feedback regarding student learning and directions for change. Outcomes documentation using AMS is included in **APPENDIX I**, for 2017-18 and 2018-19. To capture the learning progression, we evaluated content knowledge at early and later time points in the degree program. As depicted in **TABLE H.5.**, learning was tracked across pairs of courses where the first course focused on introduction of concepts to build the knowledge base and the second course focused on the application of knowledge to the relevant disorders. Prior to the AMS system, assessment information was uploaded to Office of Instruction and Assessment outcomes website. Assessment outcomes from this earlier time period are accessible on the UA Outcomes Website archives.

Course 1	Focus in early course	Course 2	Focus in later course
SLHS 261	Knowledge of laryngeal anatomy and	SLHS 477	Application of laryngeal anatomy and
	physiology		physiology to voice disorders
SLHS 362	Knowledge of basic neuroanatomy	SLHS 473	Application of neuroanatomy to adult
			acquired language disorders
SLHS 380	Knowledge of basic anatomy and	SLHS 483R/L	Application of anatomy and physiology
	physiology of the ear		of the ear to types and characteristics
			of hearing loss
SLHS 367	Knowledge of process of speech	SLHS 471	Application of knowledge related to
	production and use of the international		speech production to understanding
	phonetic alphabet		speech sound disorders
SLHS 340	Knowledge of fundamental structures	SLHS 441	Application of fundamental language
	within language (phonology, morphology,		structure to understanding
	semantics, syntax, and pragmatics).		developmental language disorders.

TABLE H.5. Course Pairings	to Track Learning	Outcomes (2017-current)
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GRADUATE STUDENTS DEGREE PROGRAMS AND OUTCOMES

I. GRADUATE STUDENTS, DEGREE PROGRAMS AND OUTCOMES

I.1. Graduate Program Description

The Department offers three graduate degrees:

- Master of Science (MS) in Speech, Language, and Hearing Sciences
- Doctor of Audiology (AuD)
- Doctor of Philosophy (PhD) in Speech, Language, and Hearing Sciences

The programs are classified according to the National Center for Educational Statistics under the Classification of Instructional Program (CIP) codes as follows:

M.S. and Ph.D. in Speech, Language, and Hearing Sciences

CIP Code 51.0201

Title: Communication Sciences and Disorders, General.

CIP Definition: A program that focuses on the application of biomedical, psychological, and physical principles to the study of the scientific



Audiology and Speech-Language Pathology Students involved with the LEND (Leadership Education in Neurodevelopment Disabilities) program attend the Nogales Sonora Cross Border Tour, December 2019

bases, development, and treatment of speech, language, hearing, and cognitive communication problems caused by disease, injury, or disability. Includes instruction in language science, hearing science, speech and voice science, biology of communication, behavioral linguistics, psychology, and applications to the development of diagnostic and rehabilitative strategies and technologies.

Doctor of Audiology

CIP Code 51.0202

Title: Audiology/Audiologist

CIP Definition: A program that prepares individuals to diagnose and treat hearing loss and other disorders involving the ear, advise patients on means to use their remaining hearing, and select and fit hearing aids and other devices. Includes instruction in acoustics, anatomy and physiology of hearing, hearing measurement, auditory pathology, middle and inner ear analysis, rehabilitation therapies and assistive technologies, and pediatric and other special applications.

Bilingual/Multicultural Certificate Program in Speech-Language Pathology or Audiology

CIP Code: 13.1012

Title: Education/Training of Individuals with Speech or Language Impairments CIP Definition: Title: Education/Teaching of Individuals with Speech or Language Impairments. Definition: A program that focuses on the study and design of educational services for children or adults with speech and language impairments which adversely affect their educational performance and that may prepare individuals to teach such students. Includes instruction in identifying students with speech and language impairments, developing individual education plans, teaching and supervising students with speech disabilities, counseling, and applicable laws and policies. The Bilingual Certificate in Speech-Language Pathology and Audiology was first offered in Fall 2013 with the first graduates in 2015. The program allows graduate students to specialize in evidencebased methods of assessment, diagnosis, and treatment of bilingual children and adults with speech, language, and hearing impairments. From inception to the end of 2019, 66 students have graduated from our Bilingual Certificate Program.

We also offer a post-bachelor's training program for Speech-Language Pathology Assistants that was initiated in the Summer 2011 in response to needs within the state. The Speech-Language Pathology Assistant program runs during the summer sessions and typically included 10 students per summer. The program was not held during 2020 due to the pandemic which strained our ability to meet the clinical experiences of the students in our MS program.

We also note that our graduate program is flexible to accommodate students who wish to pursue both a clinical and research degree. Specifically, students can combine the MS and PhD programs or the AuD and PhD programs, wherein the student completes the degree requirments for both degrees. As discussed below, we are highly individualized and flexible in the sequencing of the combined degree requirements, as well as accommodating breaks in education to complete the Clinical Fellowship Year (SLP) or the Audiology externship.

I.1.a. Master of Science Degree in Speech, Language, and Hearing Sciences

The Master of Science degree in Speech, Language, and Hearing Sciences is typically a 2-year course of study. The majority of students seeking this degree have an emphasis in clinical speech-language pathology, so it is referred to here as the MS-SLP. Through academic coursework and supervised clinical practicum experiences, students are prepared for the professional practice of speechlanguage pathology. Academic coursework covers speech, language, and hearing sciences and the nature and treatment of communication disorders across the lifespan (a minimum of 36 graduate credit hours); clinical practicum provides experience across an array of disorder types. The program



Madeline Wollersheim (Graduate Student) with Dr. Jessie Brown (Mentor) presenting at the UA Research Showcase, February 2019

is accredited by the Council on Academic Accreditation of the American Speech-Language-Hearing Association (ASHA) in Speech-Language Pathology. Thus, the required coursework and clinical training address all of the ASHA Standards for the necessary knowledge and skills for speech-language pathology.

The clinical graduate programs are accredited by the Council on Academic Accreditation (CAA) of the American Speech-Language-Hearing Association. The accrediting body stipulates major components of the clinical and academic training programs. The undergraduate curriculum is designed so that the prerequisite knowledge and skills are gained for students who pursue graduate degrees in our field.

The MS-SLP program is designed to be completed within 2 years for students entering with previous academic preparation (e.g., an undergraduate degree in SLHS). The 2-year program includes the summer term between years 1 and 2. We also offer a 3-year MS program for students who have undergraduate majors outside of the field. The first year of this 3-year program is designed to allow students to complete prerequisite coursework that will provide a solid foundation and ensure success in the master's program. The final 2 years of the three-year program are identical to the 2-year MS program. An overview of the course requirements is detailed in **APPENDIX J**.

The non-clinical Master of Science degree in Speech, Language, and Hearing Sciences (MS-SLHS) also includes 36 units of coursework, but does not include clinical practicum experiences, and students are not held accountable for the knowledge and skills that are clinical in nature.

I.1.b. Doctor of Audiology (AuD)

The Doctor of Audiology (AuD) program is a 4-year course of study for a professional degree with a clinical emphasis in audiology. The program is accredited by the Council on Academic Accreditation of American Speech-Language-Hearing Association (ASHA), which is distinct from the accreditation in speech-language pathology. The required coursework and clinical training address all of the ASHA Standards for the necessary knowledge and skills for audiology. Through academic coursework and supervised clinical practicum experiences, students are prepared for the professional practice of audiology. Academic coursework covers hearing sciences and the nature and treatment of hearing and balance disorders across the lifespan clinical practicum provides experience across an array of disorder types.

The University of Arizona Au.D. curriculum includes a prescribed list of 59 semester units of coursework covering all major topic areas included in the audiology scope of practice, and 16 semester units of clinical practicum enrollment. The AuD courses and typical sequence are described in **APPENDIX K.** Students must also successfully complete a mentored research project and a series of three comprehensive exams. An additional 18 units of coursework is also required but may have been taken at the undergraduate level. These units include coursework in statistics, research methods, speech/language development, speech/language disorders and speech perception.

I.1.c. Doctor of Philosophy in Speech, Language, and Hearing Sciences (PhD)

The Doctor of Philosophy (Ph.D.) program prepares students for academic and research careers through coursework and participation in research projects. Our goal is the development of



Doctoral Student Kristen Ackley presenting at the 2019 Arizona Speech-Language-Hearing Association Convention

independent researchers and teachers. Graduates gain a broad base of knowledge about human communication sciences and disorders and significant in-depth preparation in their special areas of concentration within the discipline. An overview of the curriculum guidelines is included in **APPENDIX L**, which details the required courses (about 12 units) of the 36-unit minimum. Students typically take coursework during the first 2 years, as they also gain research skills in the context of research rotations and engage in ongoing research in the lab of the primary mentor. All students complete an original dissertation research project.



Dr. Mary Alt (Mentor) with Genesis Arizmendi, PhD presenting at Symposium on Research in Child Language Disorders in Madison, Wisconsin, June 2019

We note here that we offer the option for students to combine their curriculum in order to complete a clinical degree (MS-SLP or AuD) as well as the PhD. There is no one prescribed way to achieve this goal; some students complete the degrees in sequence, whereas others have some overlap in coursework toward the two degrees. Typically, at least the first two years of the clinical degree are completed before applying for the PhD program. For students in speechlanguage pathology, they may insert a clinical fellowship year at some point after completing the MS, and prior to completion of the PhD requirements. Students in audiology may complete the externship in the typical fourth year, or they may defer it until the end of the PhD program. We have referred to this combined program as a dual degree program,

but that is not meant to indicate that it is a unique degree program; it simply refers to accomplishing both a clinical degree and a PhD.

I.1.d. Multicultural/Bilingual Certificate Program

The Multicultural/Bilingual Certificate in Speech-Language Pathology allows students to specialize in evidence-based methods of assessment, diagnosis, and treatment of bilingual children and adults with speech, language, and hearing impairments. Students who earn this certificate will demonstrate knowledge of how the structure of common languages spoken in the United States compares and contrasts with English, how to appropriately assess and treat all languages in the bilingual or multilingual individual, how to train and implement the use of interpreters, and cultural awareness and sensitivity in the clinical setting. Students are required to take 11 credits: (1) SLHS 435/535 Bilingualism, Multiculturalism, and Nonmainstream Dialects (3 units); (2) a bilingual clinical practicum supervised by a bilingual speech-language pathologist in one setting or an accumulated number of contact hours across clinical placements with culturally and linguistically diverse populations; (3) a phonetics course in a language other than English (outside of our Department), and (4) one elective course outside or within our Department related to bilingualism and/or multiculturalism (11 credits).

I.2. Graduate Program - Curriculum and Courses

All conventional classes are taught as one section, but there are sections of laboratory enrollments and for clinical practicum. We have a relatively small number of courses that are cross listed at the 400/500

level (See **TABLES E.4.a & b**). In all cases, the course syllabus clearly indicates the requirements that are specific for each enrollment level. For example, the requirements for the graduate enrollment for *SLHS 554 Audiologic Rehabilitation across the Lifespan* differ from undergraduate *SLHS 454* in that the graduate students have two written assignments (journal reviews) and lead two journal review sessions. To assure that such information is included, all syllabi are reviewed prior to the start of the semester by the Student Services Coordinator (in collaboration with the Curriculum Chair). All SLHS course <u>syllabi</u> are archived on our internal department website where they are visible to all students. For examples, see:

SLHS 441/541 Language Acquisition (3) <u>Syllabus</u> SLHS 454/554 Audiological Rehabilitation: Lifespan (3) <u>Syllabus</u> SLHS 471/571 Speech Sound Disorders (3) <u>Syllabus</u> SLHS 483/583 Principles of Audiology (3+1) <u>Syllabus</u>

To date, we have not had courses offered through Arizona Online, nor do we have classes taught in varying formats.

I.2.a. Adequacy of Graduate Curriculum and Courses

The graduate coursework offered within SLHS adequately covers all of the course requirements for the degrees offered. Coursework, clinical practicum, and research opportunities are available for all three areas: speech, language, and hearing. As noted, the clinical programs (MS and AuD) meet the extensive academic requirements for <u>ASHA certification in Speech-Language Pathology</u> (Master of Science clinical program) and for <u>ASHA certification in Audiology</u> (Doctor of Audiology), respectively. To maintain our national accreditation, we must affirm the adequacy of the curriculum in relation to the standards of the Council on Academic Accreditatoin in Audiology and Speech-Language Pathology (CAA) each year. For the PhD, we consistently provide the required core courses along with topical seminars designed to meet changing interests and needs over time.

I.2.b. Active Learning Strategies

Classroom: There are ample opportunities for active learning in the classroom, through clinical practica, and research endeavors. The clinical degree programs are inherently designed to provide foundational knowledge and clinical application so that translational activities are common in most, if not all, of the graduate classes. For example, in the graduate class regarding Developmental Language Disorders from Birth to 5 years (SLHS 555) students are prompted to apply a concept from the required reading to a specific clinical issue. Specifically, after reading a research article about outcomes for children with hearing loss, students wrote about those outcomes in lay language that would be easily understood by the parents of a child with hearing loss. Another example from the class that focuses on Adult Language Disorders (SLHS 544), students learn how to evaluate the nature and severity of the acquired language impairment by watching and scoring the performance of an actual individual with aphasia in the classroom setting or via videotape. Class discussions flow from such experiences as students move toward a deeper understanding. At the PhD level where the focus is on research, active learning scenarios are common wherein doctoral students take an active lead in conveying content (e.g., in doctoral seminars). The grant-writing class not only guides students through the application process for writing NIH Fellowship proposal, but students take on the role as "mock reviewers" of the proposals that are generated.

Laboratory Classes: Graduate courses that have complementary laboratory components provide students with hands-on opportunities to apply clinical concepts and use equipment. An example for the

audiology program is the the Amplification 1 (SLHS 581A) laboratory where students disassemble hearing aids to visualize and manipulate the component parts that they learned about in class. Practical clinical procedures are learned by experience, such as hearing aid verification. The active learning environment provides the opportunity to test a broad range of scenarios and variables that may not necessarily occur in their practicum experience. Laboratory classes often provide students the opportunity to experience clinical procedures prior to working with patients, thus preparing them for the practical challenges of clinic.

Clinical Practicum: The supervised clinical practica that are critical components of the MS degree in speech-language pathology and the AuD program are the essense of "active learning." Students prepare and implement clinical services with children and adults in our on-campus University of Arizona Speech, Language, and Hearing Clinic. Clinical faculty adjust the level of support over time as students gain knowledge, experience, and independence. Students ultimately



Dr. Aileen Wong (Audiologist) with Lauren Grusenmeyer (Graduate Student) in the Audiology Clinic

rotate to practicum sites in a variety of off-campus locations to gain experience in a range of settings with a variety of clinical populations (e.g., Tucson public schools, local hospitals and medical centers, and children's agencies). They are mentored by community professionals who act as preceptors (Designated Campus Colleagues). SLHS clinical faculty maintain close communication with these offcampus preceptors and our students to assure strong learning experiences. Clinical rotations are also arranged outside of the local area during summers and the fourth-year externship in Audiology.

Teaching Preceptorships: PhD students who plan an academic career are encouraged to gain mentored teaching experience during their doctoral program. Students have a range of mentored teaching opportunities at various levels including individual lectures, selected unit(s) of a course, or an entire course. They are involved in preparing a course syllabus, learning objectives, lecture notes, and exams. Students are observed and evaluated by their faculty mentor or other faculty designate, and they also have the option of peer-review by other doctoral students.

Research Experiences: Students in the professional programs (SLP and AuD) have the opportunity to participate in ongoing research in faculty laboratories. MS-SLP students have the option of completing a formal thesis or may participate in research labs for independent study credit. The AuD students all complete a doctoral project that may comprise an empirical research project or other approved project that is relevant to their professional preparation. PhD students are required to do a minimum of at least two research lab rotations, one outside of the primary mentor's lab. These rotations allow students to actively engage in research projects that often lead to co-authorship on presentations and/or papers. It also provides the opportunity to observe how a given lab is organized and managed, an important aspect of preparing for a research career. Our graduate students often engage in research that is presented at both local and national conferences which allows for engagement with a broader network



Rosemary Lester, PhD recognized as the SLHS Outstanding Scholar with Brad Story, PhD (Mentor) at the College of Science Awards Event, 2014

I.2.c. Instructional Technology

of scholars within the profession and associated fields.

Colloquium: A weekly colloquium series sponsored by the Department provides an excellent complementary learning experience for students. Presentations typically occur 3 times per month and are open to all. Student presentations are among those that make up the schedule, along with members of the SLHS faculty, other UA departments, local resources, and visiting scholars. Students typically present work completed under the direction of supervising research or clinical faculty, this includes formal prospectus presentations for PhD students. Attendance at the colloquia is particularly appropriate during the first year of graduate school as a means to learn more about the research and clinical activities in the department. Students are to enroll in the colloquium for academic credit a minimum of one semester during their graduate program. To do so, students register for SLHS 595a for 1 unit of credit.

As described in the undergraduate **Section H.3.h**., our faculty are highly skilled in the use of technology in the classroom, laboratory, and clinical settings. All of the technologies used with undergraduate students are used with graduate students. In addition, graduate level teaching involves greater use of instrumentation and software that are relevant to the nature and treatment of communication sciences and disorders. Classroom teaching in speech-language pathology often includes a wide array of video/audio recordings of typical and disordered communication that provide learning opportunities for descriptive analysis, differential diagnosis, and to demonstrate teaching principles. Instrumentation used to analyze, evaluate, and treat speech, language, and hearing processes are included in many teaching contexts including, for example, spectrographic analysis of speech output, detection/measurement of otoacoustic emissions, electrophysiological measures of hearing, and various brain imaging techniques and analysis software packages.

A review of of instructional technology utilized in our graduate coursework (41 courses) was conducted prior to the shift to all remote teaching in March 2020 due to the pandemic (see **APPENDIX H**). The Desire-2-Learn online platform was used in all SLHS classes with the exception of some independent study enrollments. Graduate teaching also included use of complementary technology including Panopto, YouTube, and Zoom. The high use of technology prior to the COVID pandemic was relevant in that the transition to fully remote teaching was not particularly daunting in some respects. Given that Zoom technology easily interfaced with our D2L platform, faculty were able to shift to remote instruction relatively easily. This allowed for attention focused on other issues related to remote instruction, including remote learning assessment and facilitating student engagement in a virtual environment. Many faculty members participated in workshops provided by the <u>Office of Instructional</u> <u>and Assessment (OIA)</u> designed to support the shift to remote instruction with additional technology and teaching strategies, as well as discussions in the context of Faculty Learning Communities and the Teaching Meetings that were implemented biweekly in SLHS starting in Summer 2020.

I.2.d. On-Line Courses

Prior to the pandemic, we did not offer any fully on-line coursework, and we do not currently anticipate the development of on-line coursework at the graduate level because of the need for clinical education to complement the M.S. and AuD clinical programs.

I.2.e. Adequacy of Resources

Office, Lab, and Clinical Preparation Spaces for Graduate Students. The graduate students in the clinical programs have several common workspaces provided and maintained specifically for them. This includes a large "grad room" on the 4th floor (Room 405) that includes couches, desks, tables, computers, refrigerator, and bookshelves for their use. A smaller collaborative space is available for audiology students on the 1st floor (in Room 107). Graduate students also have individual lockers in which to store personal items during the day. There are two secure computer rooms for report writing, video analysis, and clinical planning. Computer update and refresh has occurred regularly, so that the equipment operates well and fast. An extensive supply of standardized test materials and supplies for the conduct of clinical practice are provided in large storage closets on the 1st and 4th floors. Funds from clinical course fees cover the cost of consumables and some of the materials update.

As described in **Section G. Unit Resources**, considerable effort has been directed toward improving the learning environment for students in our Department. This has included updating of lab spaces with modern seating, desks, and tables that allowed for increased numbers of students to contribute to the research activities. Most computers and equipment costs are covered by the associated researcher, but the Department also helps to support the needs of research labs through indirect cost revenues and other discretionary funds.

All PhD students have office space within the Department, either within the laboratory of their mentor, or in designated office space for doctoral students, or both.

Student Travel. Support for student travel was provided through an open call for applications throughout the period under review. Students were encouraged to apply for support when they were traveling to present a paper or poster at a professional meeting. Awards were relatively modest (between \$200 - \$400), with essentially all applicants who were going to present at a meeting received support. Travel funds came from designated or unrestricted gifts to the Department and using some of the revenue generated by continuing education conferences conducted by the Department. Each year about 10 – 15 travel awards were awarded, totalling \$2,000 - \$4,000 per year.

Printing and Photocopy. Three central printing/photocopy machines in the building are available to students for appropriate uses that include support of teaching, clinical activities, and research. The central photocopy machine on the 2nd (main floor) is connected by network to all faculty offices and research labs where students have access as they are involved in specific projects or teaching support. The clinic office houses a photocopy machine that is used for clinical reports and other paperwork related to service delivery accessible from the protected clinical server system. Printers are available in

student workroom as needed for clinical materials, and a large capacity printer on the 4th floor provides another area for printing clinic-specific documents.

I.2.f. Interdisciplinary Education

All thirteen PhD students who earned their degrees over the past 7 years completed minors in other disciplines at the university. Thus, 100% of our PhD students are engaged in coursework outside the department for at least the minor, and additional coursework is often completed to obtain tools or knowledge needed for their chosen area of research. As shown in **TABLE I.2.f.i.**, minor areas of study included Cognitive Science, Neuroscience, Psychology, and Special Education & Rehabilitation.

	2013	2014	2015	2016	2017	2018	2019
# SLHS PhDs completed	1	1	1	1	6	1	2
Minor	CogSci	Neurosci	Cog Sci	Cog Sci	Cog Sci (2) Neurosci (2) Psychology (1) Spec Ed & Rehab (1)	Cog Sci	Cog Sci (2)

TABLE I.2.f.i. SLHS PhD Minor Areas of Study

As shown in **TABLE 1.2.f.ii.**, three PhD students from other academic departments completed their minors in SLHS. This is less than 1% of those graduating with PhDs during the review period. This number does not fully capture the mentorship offered by SLHS faculty for PhD minors because half of our faculty are members of Graduate Indisiciplinary Programs (GIDPs) as elaborated in **Section K** and mentoring occurs for the GIDP minor in that context (e.g., Alt as mentor for Cognitive Science minor). Some of our graduate-level courses also attract PhD students from other departments, including those from Cognitive Science, Psychology, and Linguistics. Some SLHS doctoral seminars or workshop courses include enrollment of PhD students from other units, including the Grant Writing course offered by Plante that has broad application.

The SLHS course with the greatest interdisciplinary engagement is Survival Skills and Ethics (SLHS 649) taught by Dr. Jenny Hoit. Survival Skills and Ethics was created in 1996 by SLHS and within a few years became a university-wide course. For many years, the course attracted about 20-25 graduate students from across campus, but for the past 5 years enrollment has been 45-50 pre-doctoral students and post-doctoral fellows from approximately 20 different departments/units and more than 10 colleges. This course is either required or strongly recommended by several departments/units (SLHS, BME, Neuroscience, Medical Pharmacology, Pharmachology/Toxicology, Nutritional Science, and the T32 training grant in Computational Biomedical Sciences). The course covers a wide range of professional skills (effective speaking and writing for diverse audiences, grantspersonship, teaching/mentoring, career preparation) and ethical issues are woven throughout the topics. Successful completion of this course earns the students a Responsible Conduct in Research (RCR) certificate and can count as credit toward the Certificate in College Teaching and the Certificate in Science Communication.

	2015	2018
# PhD completers who minored in SLHS	1	2
Major	Linguistics	Linguistics Spanish
Total PhD completers in other disciplines	494	399
Proportion	.20%	.50%

TABLE I.2.f.ii. PhD completers OUTSIDE of the discipline who minored in SLHS

Students in the Doctor of Audiology degree program also complete a minor that is typically outside of the major department (85% - 90%). Common minors of choice include Public Health, Cognitive Science, and Psychology. Within SLHS, the curriculum for the Multilingual/Bilingual Certificate program is an approved option for the minor. Students also have the option to complete an approved multidisciplinary minor, drawing on coursework from several units with an overarching theme.

I.2.g. Graduate student handbook

Students all receive a hard copy of the Student Handbook for their program. The handbooks are available on the respective pages of the SLHS website.

- <u>M.S. Student Handbook</u> is available on the SLHS department <u>website</u>
- <u>AuD Student Handbook</u> is available on the SLHS department <u>website</u>
- <u>PhD Student Handbook</u> is available on the SLHS department <u>website</u>

I.3. Graduate Students

I.3.a. Recruitment and Quality of Students

Student recruitment efforts are embedded in a myriad of faculty activities that provide excellent exposure for our program. This includes:

- Faculty presentations at national conventions and conferences, as well as invited talks around the country (and internationally)
- Professional service and leadership in our profession and related interdisciplinary contexts
- Strong collegial relations within the profession
- Contributions to the scientific literature and scholarly chapters and books

Additional recruitment activities include:

- Annual participation at graduate recruitment centers at large national meetings, such as the American Speech-Language-Hearing Association and the American Academy of Audiology.
- Career fairs at the University of Arizona and community
- Prospective student visitation to the Department is welcome at any time, but we also host two or three full days with a visitation schedule each spring for prospective graduate students to come visit.
- Virtual visit days were added in Spring 2020 and continued into 2020-21 academic year. These are conducted using Zoom technology, with photos shown along with a live narrative to highlight student activities in the classroom, clinic, and research contexts. The events are facilitated by faculty in both speech-language pathology and audiology, with breakout chat rooms for discipline-specific discussions.

Our current graduate students are play a role in recruitment as they present peer-reviewed papers and

posters at local, state, national, and international conferences. Their co-authorship on publications also attests to the strength of their graduate experience (see website for list of <u>student presentations and</u> <u>publications</u>). Similarly, graduate student involvement in service to the profession through national committee work offers excellent testimony to strong mentoring from our faculty.

We consistently have strong applicants to our graduate programs. The applicants for the MS-SLP program are among the strongest applicants to any of such programs in the nation, based on data reported by the American Speech-Language-Hearing Association EdFind website (see TABLEs I.3.a. i-iii below). [Of course, we do not have a basis to compare other important qualitative characterstics that are reflected in our applicant pool.] The number of applications for the M.S. with an emphasis in Speech-Language Pathology is typically over 250 per year, and the selectivity is high in that an



PhD Student Chelsea Privette and Associate Professor Leah Fabiano-Smith Volunteer at the 2018 Graduate Fair Booth

average of 15% of the MS-SLP applicants are admitted. The number of applications to the AuD program is approaching 100, with approximately 24% of applicants are admitted; they are similarly of high quality (TABLE 1.3.a.ii).

	University of Iowa	Purdue Unversity	Univ. of Pittsburgh	Univ. Texas - Austin	Univ. NC - Chapel Hill	University of Arizona
Applications Received	180	201	365	292	258	269
Admissions offers	62	61	118	80	54	84
Offers w/ Funding	5	9	N/A	12	10	17
Newly Enrolled	23	29	35	34	26	27
Total Enrollment	45	68	70	62	54	65
Degrees Granted	25	37	35	25	28	30
Characteristics of Acce	pted Students					
GPA Range	3.07-4.0	3.39-4.0	3.08-4.0	3.61-4.0	3.2-4.0	3.27-4.0
Average GRE Verbal	158	157	156	154.32	157	157
Reasoning	80%ile	76%ile	73%ile	65%ile	76%ile	76%ile
Average Quantitative	155	154	154	151.06	154	153
Reasoning	56ile	53%ile	53%ile	41%ile	53%ile	49%ile
Average GRE	4.60	4.60	4.40	4.13	not	4.4
Analytical Writing	~83%ile	~83%ile	~76%ile	~62%ile	reported	~76%ile

TABLE I.3.a.i.	Admission Data	: Master's Deg	ee in Speech-L	anguage Patholo	gv (SLP) 2019
			ce in opecen E		

Data retrieved from the American Speech-Language-Hearing Association EdFind website, 2019.

	University of Iowa	Purdue Unversity	Univ. of Pittsburgh	Univ. Texas - Austin	Univ. NC - Chapel Hill	University of Arizona
Applications rec'd	70	52	130	69	120	97
Admissions offers	22	20	76	22	15	36
Offers w/ Funding	4	8	N/A	N/A	14	7
Newly Enrolled	7	11	12	6	10	10
Total	24	37	55	36	37	40
Enrollment						
Degrees Granted	9	7	11	10	12	10
Characteristics of Adm	nitted Student	ts				
GPA Range	3.08-4	3.69-4	2.9-4	3.38-4.0	3.56-4.0	2.9-4.0
Average GRE Verbal	155	154	154	151	156	157
Reasoning	68%ile	64%ile	64%ile	51%ile	73%ile	76%ile
Average Quantitative	155	153	152	148	155	153
Reasoning	56%ile	49%ile	45%ile	30%ile	56%ile	49%ile
Average GRE	5.3	4.3	4.2	3.8	4.6	4
Analytical Writing	95.6%ile*	71.4%ile*	66.6%ile*	49.8%ile*	83%ile*	57%ile

TABLE I.3.a.ii Admissions Data Clinical Doctorate in Audiology (AuD) 2019

*Data retrieved from the American Speech-Language-Hearing Association EdFind website, 2019. Data for the University of Wisconsin was not available. Percentiles for the GRE Analytical Writing Score were estimated when needed.

With regard to PhD applicants, it is evident in **TABLE 1.3.a.iii** that the number of individuals applying to PhD programs is small in all of the top programs in our field. The small size of admitted cohorts at programs across the nation makes it inappropriate to display scores on standardized tests; however, we note that students admitted to our program often have standardized test scores that are comparable with the admitted MS-SLP and AuD students. This has reinforced our inclination to encourage students in our clinical programs who demonstrate interest in research and academia to consider pursuing a PhD. This strategy of recruitment to the PhD program from our clinical programs has been particularly successful during this time under review. In fact, nine of the last 14 PhD graduates completed their clinical degrees at the University of Arizona. While we appreciate the benefit that students may experience from completing their graduate degrees at different institutions, and that there also can be benefit from a work experience between clinical and research degrees, our experience speaks to strong advantages of the flexible, personalized dual degree program that we have in place. As detailed below, we found that the combined time to complete the clinical degree and the PhD (and clinical fellowship in many cases) is shorter than a traditional sequential plan.

TABLE I.3.a.iii.	Admissions	Data: Doct	or of Philoso	phy	(PhD)	2019
				P	····-/	

	University	Purdue	Univ. of	Univ. Texas	Univ. NC -	University of
	of Iowa	Unversity	Pittsburgh	- Austin	Chapel Hill	Arizona
Applications Received	10	22	11	17	10	9
Number Admitted	4	6	4	10	4	4
Newly Enrolled	4	2	4	5	4	2
Target class size	4	22	4	7	4	6
Total Enrollment	13	15	16	23	16	13
Degrees Granted	3	1	4	6	2	2

*Data retrieved from the American Speech-Language-Hearing Association EdFind website, 2019. Data for the University of Wisconsin was not available.

I.3.b. Gender/Race/Ethnicity of Graduate Students

Consistent with our undergraduate student population, women are well represented (over-represented, actually) in SLHS graduate programs. As shown in **TABLE I.3.b.i**, all of our graduate programs have more than 70% women. This contrasts with census data indicating nearly equal proportions of females and males in Arizona (50.3% Female) and the U.S. (50.8% Female). As is evident in the UArizona comparison groups, the Graduate College is relatively close to state/national gender distribution, whereas the College of Science as a whole, has an underrepresentation of women. We would like to achieve a better gender balance and recognize the importance of recruitment efforts from our undergraduate and graduate students pursuing clinical degrees.

Academic Plan (Percent)	Gender	Fall 2012	Fall 2013	Fall 2014	Fall 2015	Fall 2016	Fall 2017	Fall 2018	Fall 2019	COS Fall 2019	Grad College Fall 2019	CSD Nat'l*
AUD	F	79.4	76.5	72.2	80.0	71.1	77.8	80.0	80.0	44.7	53.2	87.8
	М	20.6	23.5	27.8	20.0	28.9	22.2	20.0	20.0	55.3	46.5	12.1
	Unk	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.3	0.0
MS/SLHS	F	94.5	96.3	98.1	95.0	90.9	88.3	86.4	92.2	44.7	53.2	96.1
	М	5.5	3.7	1.8	5.0	9.1	10.0	13.6	7.8	55.3	46.5	3.8
	Unk	0.0	0.0	0.0	0.0	0.0	1.7	0.0	0.0	0.0	0.3	0.0
PHD/SLHS	F	83.3	77.8	70.0	75.0	64.3	66.7	66.7	71.4	44.7	53.2	77.4
	М	16.7	22.2	30.0	25.0	35.7	33.3	33.3	28.6	55.3	46.5	22.3
	Unk	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.3	0.0

TABLE I.3.b.i. Gender of Graduate Students in SLHS, College of Science, UA, and National Comparison

*National Data Source: 2019 Communication Sciences and Disorders (CSD) Education Survey, 2018-2019 Academic Year

With regard to the distribution of race/ethnicity in our graduate degree programs, students of color are represented in the MS, AuD, and PhD programs as follows: 16.7%, 32.5%, and 41.6, respectively (see **TABLES I.3.b.ii** – iv). The diversity of the MS program has varied over time, with past two years falling below that of graduate students in our College of Science (16.7% vs. 28% in the College) and in relation to the national survey of graduate programs in Communication Sciences and Disorders (21.3%). In contrast, the AuD program has consistently included 30% or more students of color, which is notably higher than the national data in our field, which is currently at 15%. Our PhD program shows the greatest diversity, ranging from 30 - 40% students of color during the period under review. In light of the paucity of PhDs in our profession and the limited diversity, we are pleased that our program is contributing to the diversity of new PhDs in our field.

Race/Ethnicity (Perce	ent)							College of	AZ	US	CSD
								Science	Census	Census	Nat'l
MS - SLP	Fall	2018-19	2019	2019	2019						
	12	13	14	15	16	17	18				
African American*	1.8	0.0	1.8	1.7	3.6	3.3	3.0	3.1	5.2	13.4	-
American Indian*	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.8	5.3	1.3	-
Asian*	3.6	3.7	7.3	6.7	5.5	1.7	6.1	6.4	3.7	5.9	-
Hispanic*	9.1	11.1	15.0	15.0	12.7	6.7	6.1	14.1	31.7	18.5	-
Pacific Islander*	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.3	0.2	-
Two or more races*	0.0	0.0	0.0	5.0	5.5	5.0	1.5	2.5	2.9	2.8	-
*Subtotal	14.5	14.8	24.1	28.4	27.3	16.7	16.7	28.0	48.9	41.8	21.3
Students of Color											
White (alone)	80.0	79.6	72.7	70.0	70.9	71.7	74.2	47.0	54.1	60.1	77.2
Unreported	3.6	3.7	1.8	1.7	1.8	10.0	7.6	6.3	-	-	-
Nonresident (Internat'l Students)	1.8	1.9	1.8	0.0	0.0	1.7	1.5	18.7	13.3	13.6	1.5

TABLE I.3.b.ii Race/Ethnicity of Master of Science Students (shown in percent)

¹ <u>United States Census Bureau Quickfacts</u>. Estimated population, July 1, 2019, for state of Arizona and US as a whole.

² 2019 Communication Sciences and Disorders (CSD) Education Survey. 2018-2019 Academic Year

*Students of Color as defined by UAIR Enrollment Fact Book.

TABLE I.3.b.iii Race/Ethnicity of Doctor of Audiology (AuD) Students (shown in percent)

Race/Ethnicity (Percent)								College	AZ	US	CSD
								of	Census ¹	Census ¹	Nat'l ²
	r	r	1	1	1	1	1	Science			
AuD	Fall	2018-19	2019	2019	2018						
	12	13	14	15	16	17	18				
African American*	2.9	2.9	2.8	0	0	0	0	3.1	5.2	13.4	-
American Indian*	0	0	0	0	0	0	0	1.8	5.3	1.3	-
Asian*	8.8	8.8	8.3	8.6	10.5	13.9	15	6.4	3.7	5.9	-
Hispanic*	14.7	11.8	13.9	14.3	13.2	16.7	12.5	14.1	31.7	18.5	-
Pacific Islander*	0	0	0	0	0	0	0	0.1	0.3	0.2	-
Two or more races*	5.9	5.9	8.3	5.7	7.9	5.6	5	2.5	2.9	2.8	-
*Subtotal % Students of Color	32.3	29.4	33.3	28.6	31.6	36.2	32.5	28.0	48.9	41.8	15.4
% White (non-	61.8	67.6	61.1	68.6	65.8	63.9	67.5	47.0	54.1	60.1	82.6
Hispanic/Latino)											
Unreported	2.9	2.9	5.6	2.9	0	0	0	6.3	-	-	-
Nonresident	2.9	0	0	0	2.6	0	0	18.7	-	-	2%
(Internat'l Students)											

¹ <u>United States Census Bureau Quickfacts</u>. Estimated population, July 1, 2019, for state of Arizona and US as a whole.

² 2019 Communication Sciences and Disorders (CSD) Education Survey. 2018-2019 Academic Year

*Students of Color as defined by UAIR Enrollment Fact Book.
	-	•				•					
Race/Ethnicity (Po	ercent)							CoS	AZ Census ¹	US Census ¹	CSD Nat'l ²
SLHS-PHD	Fall 12	Fall 13	Fall 14	Fall 15	Fall 16	Fall 17	Fall 18	2018-19	2019	2019	2019 Report
% African American*	0	0	0	16.7	14.3	17.0	8.3	3.1	5.2	13.4	-
% American Indian*	0	0	0	0	0	0	0	1.8	5.3	1.3	-
% Asian*	0	0	0	0	0	0	8.3	6.4	3.7	5.9	-
% Hispanic*	33.3	11.1	30.0	25.0	16.7	16.7	16.7	14.1	31.7	18.5	-
% Pacific Islander*	0	0	0	0	0	0	0	0.1	0.3	0.2	-
Two or more races*	0	0	0	0	0	8.3	8.3	2.5	2.9	2.8	-
*Subtotal % Students of Color	33.3	11.1	30.0	41.7	31.0	33.7	41.6	25.4	48.9	41.8	17.3
% White (non- Hispanic/Latino)	58.3	88.9	70.0	58.3	75.0	58.3	50.0	47.0	54.1	60.1	63.0
% Unreported	0	0	0	0	8.3	0	8.3	6.3	-	-	-
% Nonresident (Internat'l Students)	8.3	0	0	0	0	0	0	18.7	-	-	19.7

TABLE I.3.b.iv Race/Ethnicity of PhD Students (shown in percent)

¹ United States Census Bureau Quickfacts. Estimated population, July 1, 2019, for state of Arizona and US as a whole.

² 2019 Communication Sciences and Disorders (CSD) Education Survey. 2018-2019 Academic Year

*Students of Color as defined by UAIR Enrollment Fact Book.

Efforts to Increase Underrepresented Groups at the Graduate Level

As discussed in previous sections, we have made intentional efforts to grow our department in ways that foster and support diversity. For graduate students, our programmatic efforts toward strong clinical preparation for service delivery to multicultural/bilingual populations is a natural draw, as well as culturally relevant research. The cultural and linguistic diversity of Tucson and the proximity to the US/Mexico border provides the context for clinical and research experiences that uniquely educate and prepare students for their future. Some students come to the University of Arizona with the multicultural experience in mind, but others discover it once they are here. At the doctoral level, recruitment is often tied to the specific research focus of faculty members. The work by Fabiano-Smith attracts students interested in bilingual speech and language acquisition. In audiology, the novel work by Nicole Marrone and colleagues offers a context for clinical and research training while tackling healthcare disparities in audiologic rehabilitation. Recruitment of students from under-represented groups is addressed directly by the recent success of Dr. Mary Alt and her collaborators at Arizona State University to extablish a doctoral training program with the focus: Preparing Researchers in Early Intervention for Children with Disabilities from Multicultural Environments. The project includes the much-needed doctoral funding that will support growth of our PhD program.

Another effort with strong potential to enhance student diversity was the careful evaluation and revision of our graduate school admissions process. In 2017, our admissions committee engaged with departmental leadership and broader faculty to re-envision our graduate admissions process intending

to achieve a more holistic, equitable, and inclusive approach. As part of this process, we aimed to recognize the value of non-traditional experiences and to de-emphasize the weighting of standardized test scores. As Dr. Aileen Wong was a Fellow with the Hispanic Serving Institution (HSI) office, she had the insight to seek a mini-grant from the UArizona STEM-in-HSI Working Group to support to support an adaptive case study of the process of re-examining our admissions processes. In 2018, mandatory weighting of the GRE as part of the application was eliminated, but the scores remained accessible as a transition stage. Feedback from the admissions committee and other faculty input led to the decision to discontinue the GRE requirement for all three graduate programs (MS, AuD, and PhD), effective 2021 admissions. Dr. Wong and colleagues shared lessons learned from this experience in a submitted manuscript to the *American Journal of Speech-Language Pathology* (Wong, Marrone, Fabiano-Smith, Beeson, Franco, Subbian, & Lozano, under revision).

Increased awareness and incorporation of inclusive teaching practices are also being considered within our department. The SLHS Equity and Inclusion Committee is currently editing a guide for faculty in the department that can help them to foster inclusive learning spaces. This guide involves self-reflection activities and practical recommendations for faculty members. This tool provides a helpful resource for faculty members teaching at both the undergraduate and graduate levels and can help to create a learning environment that supports student retention.

Our department graduate students have also taken action to increase underrepresented student retention and to support professional diversity. In 2019, the Speech, Language, and Hearing for Underrepresented Students (SLH-US) Club was developed. This club is for underrepresented graduate students and allies in the profession. The club has provided a safe space and supportive community for our graduate students who are underrepresented in the professions.

I.3.c. Graduate Stipends and Assistantships and Travel Support

Our Graduate Teaching Assistants are supported by funds allocated through the College of Science, whereas Graduate Research Assistants and Associates are funded by grant and Department monies. As shown, there was some decline in the number of graduate student positions funded in the past two years, coupled with an increase in the total number of graduate students (see **TABLE I.3.c.i**.). Thus, there was a recent decline the proportion of graduate students who received GTA or GRA positions. All PhD students were funded, but the number of MS and AuD students receiving the GTA/GRA opportunities declined. The salary schedule for these student positions is indicated in **TABLE I.3.c.ii**, which is consistent with College of Science guidelines. Benefits (tuition and insurance) are also attached to the awards.

With regard to adequacy of stipends, as we prioritize the funding of PhD students, the reduced funds allocated toward students in the MS and AuD program certainly reduces our ability to compete with other programs across the country; we are aware of specific instances where a strong student chose another institution on the basis of funding. Beyond recruitment, we know that many graduate students who enter our program face financial hardship that causes stress and requires that they work outside of the university, despite the fact that our clinical graduate programs require fulltime engagement. At the PhD level, we are committed to funding students for four years taking advantage of a variety of sources in addition to GTA/GRA funds. This includes some gift funding for fellowships and hourly employment within the department. Student success in obtaining NIH Pre-doctoral funding (F-30 and F-31 mechanisms) provides support during the dissertation research stage, freeing up funds for PhD students earlier in their career. Overall, however, our sources of graduate funding are not adequate to support growth of the PhD program. Our commitment to improve such resources are consistent with faculty efforts toward external grant funding.

	Fiscal Year 2012-13 2013-14 2014-15 2015-16 2016-17 2017-18 20 177 177 19 22 21 17 17 170 17 19 22 21 17 17 9 12 9 8 7 8 1 4 7 6 7 4 2 1 30 36 35 37 34 27 1						
UA Title	2012-13	2013-14	2014-15	2015-16	2016-17	2017-18	2018-19
Graduate Assistant, Teaching	17	17	19	22	21	17	13
Graduate Associate, Teaching			1		1		
Graduate Assistant, Research	9	12	9	8	7	8	8
Graduate Associate, Research	4	7	6	7	4	2	
Graduate Assistant, Other					1		
Total:	30	36	35	37	34	27	21
Total # SLHS Graduate Students	93	101	97	101	107	107	108
% of All Graduate Students Funded by GTA/GRA	32%	36%	36%	37%	32%	25%	19%

TABLE I.3.c.i. Number and Funding of Graduate Teaching Assistants and Graduate Research Assistants

TABLE 1.3.c.ii Salary Range of Stipends for Half-Time Research and Teaching Assistants

	2012-13	2013-14	2014-15	2015-16	2016-17	2017-18	2018-19
UA Title							
Grad Assistant,		\$30,160	\$30,160	400.400	\$30,160	\$30,160	\$30,160-
Teaching				\$30,160			\$36,800
Grad Associate,		\$30,160	\$30,160		\$30,160	\$30,160	
Teaching							
Grad Assistant,		\$27,656-	\$27 <i>,</i> 656-	\$27,656-	\$27,656-	\$27,656-	\$39,350-
Research		\$29,000-	\$39,350	\$39,350	\$29,000	\$39 <i>,</i> 350	\$46,800
Grad Associate,	\$30,000-	\$39 <i>,</i> 350-	\$39,350-	\$38,667-	\$39 <i>,</i> 350-	\$39 <i>,</i> 350-	\$40,000
Research	\$40,000	\$40,000	\$40,000	\$40,000	\$40,000	\$40,000	

Travel Support. Funding for student travel comes from a number of sources. As described in Unit Resources (**Section G**), we have an open call for student travel support from the department; we consistently provide up to \$300 for students who are presenting at relevant professional meetings. Graduate students are also mentored to apply for travel grants from a wide array of funding sources. Students have had marked success in receiving external funds for travels as shown in **TABLE 1.3.c.iii**.

Travel Award	Year: Student
National	
Acoustical Society of America Student Travel Award	2016, 2015, 2012: Megan Kittleson (Willi)
American Academy of Audiology Foundation, Fellows-in-Training Travel Grant	2019: Bryan Wong
American Auditory Society Mentored Student Poster Travel Award	2017: Alireza Pourjavid
	2014, 2013: Spencer Smith
American Speech-Language-Hearing Association Audiology/Hearing Science	2019: Alyssa Everett, Bryan Wong
Research Travel Award (ARTA)	2018: Alireza Pourjavid
	2017: Barrett St. George
	2013: Spencer Smith
American Speech-Language-Hearing Association Research Mentoring-Pair Travel	2018: Alyssa Sachs (with Beeson)
Award	2016: Jessie Erikson (with Alt)
Association for Research in Otolaryngology, Post-Doctoral Travel Award (\$750)	2017: Laura Coco
International Hearing Loss Conference Travel Award (\$600)	2019: Alyssa Everett
Internet and Audiology Conference Student Investigator Travel Award	2017: Laura Coco
Internet and Audiology International Meeting Travel Award (\$1500)	2019: Laura Coco
NIH Research Travel Award, International Conference on Auditory Cortex (\$750)	2017: Barrett St. George
NIH Travel Award for the American Auditory Society Meeting	2013: James Shehorn
Student Travel Award, Symposium on Research in Child Language Disorders (\$700)	2016: Jessie Erikson
Symposium on Research in Child Language Disorders Travel Award	2012-13, 2016, 2017: Trianna Oglivie
University Awards	·
University of Arizona Graduate and Professional Student Council Travel Grant	2019: Kristen Ackley
	2018: Alyssa Sachs, Alexander Tucci
	2017: Jessie Erikson
	2016: Jessie Erikson, Alyssa Sachs
	2015, 2012: Megan Kittleson (Willi)
University of Arizona Graduate Interdisciplinary Program Carter Travel Award	2018: Alyssa Sachs
	2016: Trianna Oglivie

TABLE 1.3.c.iii Externally Funded Travel Awards to SLHS Graduate Students

I.3.d. Thesis/Dissertation Supervision, Graduate Exit Interview, and Graduate Student Employment After Graduation

Thesis/Doctoral Project/Dissertation Supervision. Students in the clinical M.S. program are not required to complete a thesis, but each year about 2-3 students choose to do so. All AuD students complete a mentored project referred to as the Audiology Research Project (ADP), and all PhD students complete a doctoral dissertation. The scholarly work is typically mentored by a faculty member who teaches in the specific degree program. That is, faculty members in speech or language are typically the primary mentors for MS theses in the area of speech-language pathology, whereas Audiology faculty are the primary mentors for the ADP. Doctoral dissertations for the PhD are supervised by the primary mentor. Faculty committees for thesis/ADP/dissertation work have at least three members, including SLHS faculty across specialities and may include faculty from the minor area of study.

In examining the average student/faculty ratio for supervision of thesis/ADP/dissertation, we consider the degree programs separately. For the MS degree, the number of theses completed is small, individual faculty mentor one student (two at the most). MS thesis committees typically include three SLHS faculty members. The average student/faculty ratio is less than one thesis per faculty member (as Chair or committee member). This allows for ample time for MS thesis mentorship.

The number of completed Audiology Doctoral Projects is equal to the number of graduates for a given year. In TABLE 1.3.d.i., we show the completion count for the ADPs, but student work extends over at least two years of the degree program. Primary mentorship for the ADPs is distributed across the 3 to 4 tenure-eligible faculty (Cone, Dai, Marrone) along with three careertrack faculty (Velenovsky, Norrix, DeRuiter). All audiology faculty serve on ADP committees, along with faculty with speech or language specialties and representatives from the minor. The table below shows the average student/faculty ratios for Chairing the ADP and for committee members. With the support from Career-Track faculty, the average load for ADP supervision is to chair one ADP and to serve on an average of three ADP committees. In practice, the load for an individual faculty member can be much higher, as experienced by Marrone in 2014-15 as she chaired 7 ADPs from one cohort. Subsequently, a more active effort toward distribution across faculty was implemented, but the small size of the audiology tenure-track faculty is particularly noted in the context of ADP supervision. Comparison data from other programs are not available for ADP supervision and programs vary with regard to the scope of such projects.



Bryan Wong and Guest Family Member at the Annual Audiology Doctoral Project Symposium

Completed	AY 2013	AY 2014	AY 2015	AY 2016	AY 2017	AY 2018	AY 2019	Stud/Fac Ratio Chair	Stud/Fac Ratio Committee
Masters Theses	0	2	2	3	3	3	2	.19	.58
Audiology Doctoral Projects	7	7	11	4	9	5	10	1.18	3.54
Dissertations	1	1	1	1	6	1	2	.13	.39
TT Faculty (full FTE)	14	15	15	14	13	14	15		
Faculty to Direct Speech-Lang Audiology*	10 6	11 6	12 6	11 6	10 7	11 7	12 7		

TABLE I.3.d.i. Thesis/ADP/Dissertation Completion in Relation to Faculty

*includes non-tenure eligible faculty who mentor ADPs

Mentorship of PhD Dissertations is distributed among the tenure-track faculty. As shown in **TABLE 1.3.d.i.**, the student to faculty ratio is under one. In reviewing the actual distribution across faculty members, the largest number of students completing dissertation work at one time under the same mentor is two. Overall, there is capacity for more PhD students, and the recent training grant to support doctoral students in the area of child language (Alt, Co-PI) will help with recruitment in that area.

Graduate Exit Survey

The SLHS Department has conducted a written exit survey as a means to obtain student feedback regarding their confidence in their academic and clinical preparation. The results from the past three years are presented in **TABLE I.3.d.ii**. Students rated their knowledge and preparation highly, with average ratings between excellent (1) and very good (2).

TABLE I.3.d.ii. SLHS Graduate Student Exit Interview Responses

Question	2018	2019	2020	Mean			
How do you rate your level of preparation in each of the following	ow do you rate your level of preparation in each of the following						
areas:							
 Rate your competency and mastery of concepts related to 							
assessment, treatment, and management of individuals with a	-	1.89	1.74	1.82			
variety of communication disorders across the lifespan.							
 Rate your skills in oral and written communication or other 		1 22	1 / 2	1 20			
forms of communication for entry into professional practice.	-	1.55	1.42	1.50			
 Rate the quality of your clinical education 	1.60	1.95	1.85	1.80			
 Rate your knowledge of evidence-based practice 	1.81	2.15	2.10	2.02			
Rate your knowledge of current research	2.00	2.22	2.06	2.09			
Rate how prepared do your feel for clinical practice	2.15	2.30	2.21	2.22			
 Rate your knowledge of professional issues 	2.00	1.96	1.95	1.97			
Average by Year	1.91	1.97	1.90	1.90			

Graduate Student Employment after Graduation

Clinical Program Graduates. Student employment in desired positions after program completion is reported at 100%. For those in speech-language pathology, the primary settings were schools, health care (including acute or rehabilitation hospitals, skilled nursing facilities), followed by private practice (see **TABLE I.3.d.iii**). The audiology graduates work primarily in healthcare, including private practice or medical settings (**TABLE I.3.d.iv.**). Some were in university settings, including those who earned the AuD and PhD.

TABLE I.3.d.iii Employment Settings of Recent MS-SLP Graduates

Employment Setting	2016 (of 23)	2017 (of 25)	2018 (of 22)	2019 (of 32)
Healthcare	52%	32%	23%	19%
Private Practice	0%	0%	14%	22%
School (Pre-K - 12)	39%	56%	55%	59%
College/University	0%	12%	5%	0
Unknown	4%	0%	5%	0
Other	4%	0%	0%	0
Not Employed	0%	0%	0%	0

Employment Setting	2016 (of 4)	2017 (of 8)	2018 (of 6)	2019 (of 8)
Healthcare (incl Private Practice)	75%	87%	83%	87.5%
School (Pre-K - 12)	25%	0%	0%	0%
College/University	0%	13%	17%	12.5%
Not Employed	0%	0%	0%	0%

TABLE I.3.d.iv Employment Settings of Recent AuD Graduates

Ph.D. Graduates. Thirteen individuals completed their PhDs during the period under review (with one more in May 2020). As shown in **TABLE I.3.d.v.**, the majority (11 of 14) of the graduates accepted post-doctoral fellowships immediately after completing their degrees from the University of Arizona. Four of those graduates went on to tenure-track faculty positions, along with two who went directly to academic positions. Four are currently in research positions, and one works in a clinical context.

TABLE I.3.d.v. Employment Settings of Ph.D. Graduates (2012-2019)

Post-Doctoral Fellowships

- Post-doctoral Fellow, Post-doctoral Fellow, Northwestern University Department of Communication Sciences and Disorders Hearing Aid Laboratory (Davidson) [2020 update]
- Post-doctoral Fellow, Cincinnati Children's Hospital Pediatric Research (Aguilar)
- Post-doctoral Fellow, University of New Mexico Dept. of Individual, Family and Community Education (Arizmendi)

Post-doctoral Fellow, Georgetown University Medical Center, Cognitive Recovery Lab (DeMarco) Post-doctoral Fellow, Northwestern University (Everett)

Post-doctoral Fellow, Moss Rehabilitation Research Institute-Einstein College of Medicine (Mailend) Post-doctoral Fellow, University of Nevada Las Vegas-Psychology (Vitela)

Post-doctoral Fellow, Northwestern University, followed by faculty position (Lester)

Post-doctoral Fellow, Northwestern University, followed by faculty position (Smith)

Post-doctoral Fellow, Arizona State University, followed by faculty position (Willi)

Post-doctoral Fellow, University of Arizona Dept. of Psychiatry, followed by research position (Dailey)

Research Positions

Research Scientist*, University of Arizona, Dept. of Psychiatry (Dailey)

Research Scientist, University of Arizona, SLHS (Oglivie)

Research Audiologist, Hauser Hearing Institute (Shehorn)

Institute Scientist*, Moss Moss Rehabilitation Research Institute-Einstein College of Medicine (Mailend)

Faculty Positions

Instructor and undergraduate program director, Dept of Communication Sciences and Disorder University of South Florida (Carbonnel)

Assistant Professor, University of Colorado Boulder, Speech, Language and Hearing Sci (Meyers-Denmen)

Assistant Professor*, University of Texas at Austin, Speech, Language and Hearing Sci (Smith) Assistant Professor*, University of Texas at Austin, Speech, Language and Hearing Sci (Lester-Smith) Assistant Professor*, Dept. of Communication Sciences and Disorder, California State University at Chico (Willi)

Other

Child Life Specialist* (Vitela)

*indicates position after Post-doctoral Fellowship

I.3.e Graduate Student Scholarship Activities

Publications and Presentations

Graduate students in our program have excellent opportunities to participate in scholarship activities that include mentored research experiences, presentations, and peer-reviewed publications. Faculty mentorship is evident in the biosketches included in **APPENDIX P**, with student authorship denoted. We maintain a list of student presentations and publications on our <u>SLHS public website</u>, which attests to the high level of scholarship and productivity. **TABLE I.3.e.i.** summarizes student co-authorship over the past 7 years displayed on the website. Thera are many opportunities for students to share their work within the department in our



Audiology Graduate Student Kayla Ichiba presents her research at the American Auditory Society in March 2018

colloquium series and on campus in a variety of settings, including the annual Graduate Interdisciplinary Programs reception (Dec.), Cognitive Science poster session (May), and other special events sponsored by SLHS and the School of Mind, Brain, and Behavior. These presentations are an excellent training ground where students receive feedback, experience, and provides a model for other students.

	2013	2014	2015	2016	2017	2018	2019
Peer-reviewed publications	17	17	11	15	13	17	25
Peer-reviewed presentations	6	28	28	30	40	24	33

TABLE I.3.e.i. Student Co-Authorship on Peer-Reviewed Publications and Presentations

Scholarship toward External Funding

Students in the PhD program receive strong, focused mentorship regarding grant writing. Over the past seven years, six students have received NIH Pre-doctoral fellowship funding through the NIH/NIDCD Ruth L. Kirschstein National Research Service Award mechanism, and three received funding through the post-doctoral mechanism. Three diversity supplements were also funded through NIH/NIDCD. A summary by funding mechanism is included in **TABLE I.3.e.ii**, with full details in **APPENDIX M**. The consistent effort toward the preparation of grant applications and the accumulated success provides our PhD students with excellent training for this critical skill as they aim for academic careers.

Fellowship Grants (by Type)	# Submitted	# Funded	Amount
F30 NIH Ruth L. Kirschstein National Research Service Award (NRSA) Pre-doctoral fellowship	1 F30	1 F30	\$109,029
F31 NIH Ruth L. Kirschstein National Research Service Award (NRSA) Pre-doctoral fellowship	7 F31	5 F31	\$421,838
F32 NIH Post-doctoral Fellowship	3 F32	3 F32	\$580,696
NIH/NIDCD Diversity supplement	3 Div. Supp.	3 Div. Supp.	\$215,833
Total	14 Submitted	12 Funded	\$1,327,396

TABLE I.3.e.ii Summary of Mentored Pre- and Post-doctoral Grant Proposals (2012-present)

I.3.f. Enrollment Trends and Time to Graduate for SLHS Graduate Degree Programs

Our total graduate student enrollment has increased in recent years from about 100 students to 118 students.

- We increased our targeted yearly enrollment for the MS-SLP program from about 25 to about 32 for the two-year program, and we also admit a small cohort of three-year MS students who come with a background other that communication disorders. As shown in **TABLE I.3.f.i**, the combined M.S. enrollment has increased by about 10 students (from 55 to 65).
- The annual targeted admission for the AuD program is 10 students, so we aim for a total cohort of 40 students in the 4-year program. Over time we increased from a total of 34 to 40 students.
- Enrollment of PhD students is dependent upon individual matches between candidates and mentoring faculty. In recent years, the cohort size has fluctuated between 12 14 students.
- The Bilingual Certificate program began in Fall 2015 with a four-semester enrollment. By Fall 2018, we were able to reduce the enrollment time to three semesters to offer greater flexibility and to reduce the cost to students. This allowed MS students to begin certificate enrollment in Spring semester of the first year; AuD students can enroll in the certificate as they choose to begin the coursework during the first three years of their program.

Progran	1	Fall 2012	Fall 2013	Fall 2014	Fall 2015	Fall 2016	Fall 2017	Fall 2018	Fall 2019
Master's Stude	nts (MS)	55	54	55	60	55	60	66	64
Clinical Doctora	te (AuD)	34	34	36	35	38	36	40	40
Doctorate (I	Doctorate (PhD)		9	10	12	14	12	12	14
Degree Plan	Totals	101	97	101	107	107	108	118	118
Bilingual Certificate Program	AuD	-	-	-	2	1		1	1
	SLHS MS	-	-	-	13	11	7	14	16
Certificate t	otals				15	12	7	15	17

TABLE I.3.f.i. Graduate Student Enrollment by Program (Fall census)

	Number	of Degree (Completior	IS			
Degree	2012-13	2013-14	2014-15	2015-16	2016-17	2017-18	2018-19
SLHS MS	25	24	21	23	26	22	32
Bilingual Certificate - MS			6	8	7	7	14
Doctor of Audiology (AuD)	7	7	11	4	9	5	10
Bilingual Certificate -AuD			0	2	0	0	1
SLHS PhD	1	1	1	1	6	1	2
Total Degrees	33	32	33	28	41	28	44
Total Bilingual Certificates			6	10	7	7	15

TABLE I.3.f.ii Graduate Degrees Awarded by Year

Time to Graduate and Completion Rates.

As shown in **TABLE I.3.f.iii**, our Master of Science degree students typically complete their degree in a 2year time frame, unless they enter the degree program without a background in SLHS. In the latter case, a prerequisite year is required to complete the degree, so 3 years is the expected completion time. The completion rates are high for both groups. the 2-year and 3-year programs at about 96%.

MS Program	# Students Entered	Complete in 2 yr	Tot Complete in 3.0 yr.*	#Complete in > 3 yr.	Did not complete	Overall Completion rate
2-year program	150	140 93.3%	142 94.6%	2	6 of 150	144/150 = 96.0%
3-year program*	45	NA	43 95.6%	0	2 of 45	43/45 = 95.6%
Combined	195		185 94.8%	2	8	187/195 = 95.8%

TABLE I.3.f.iii. Completion Information for MS-SLHS Students (2012-19)

*The 3-year program is designed for students who do not have pre-requisite undergraduate coursework in SLHS. [Note that APR Dashboard does not differentiate between 2- and 3-yr programs, so computed from department records.]

Students in the Doctor of Audiology program consistently complete the program in the required 4 years. This includes three years of coursework and one externship year. As shown in **TABLE 1.3.f.iv.**, the completion rate for the AuD degree was 81.7%. This completion rate is lower than desired with 13 of 71 students choosing to discontinue the program. Contributing factors appear to be the relatively long time commitment for the degree (4 years), and the loss of a few students who could not meet the academic and clinical rigors of the program.

TABLE I.3.f.iv. Completion Information for Doctor of Audiology Students

AuD	# Students	Complete AuD	Completed in	Did not	Overall Completion
	Entered	in 4 yr	6 years	complete	Rate
4-year program	71	53 76.4%	58 81.7%	13 of 71	58/71 = 81.7%

In the SLHS Ph.D. program, 13 students completed the degree in the past 7 years; the median time to completion was 5 years, with a range from 3 to 7 years. We tailored the display of the completion data in **TABLE I.3.f.v**, because the majority of the PhD students in this cohort (8 of 13) also completed a

clinical degree from our program (MS degree or AuD). In each of those instances, the students also completed their clinical fellowship (for Speech-Language Pathology) or externship (for audiology). When the break for the clinical fellowship was essentially a "hold" on the PhD curriculum, we did not count that year in the time to completion. In most instances the degrees were completed in sequence with relatively little overlap, but in one or two cases, an overlap year was counted as .5 toward the PhD. These adjustments allowed us to capture a true representation of the time enrolled in the PhD program. Of particular interest was the finding that the time to complete the PhD degree was often shorter in the combined program. All but one student completed within a six-year window, and all students completed the degrees within an 8-year window. Overall, there we 16 students who entered the PhD program, with all but 2 completing the degree.

hD	# Students Entered	Completed Clinical Year during PhD	Median time to complete PhD	Did not complete	Overall Completion Rate
PhD only	5	NA	5.5 yrs. (range = 5 – 7)	0 of 5	100%
MS/PhD	7	6	5.0 yrs. (range = 3 – 5.5)	1 of 7	85.7%
AuD/PhD	4	2	4.0 (range = 3.5 – 4)	1of 4	75.0%
Combined	16	8	5.0 (range = 3 – 7 yrs)	2 of 16	87.5%

TABLE I.3.f.v.	Completion	Information	for Doctor	of Philosop	hv Students
				0	

I.4. Graduate Student Learning Outcomes Assessment

In accordance with University of Arizona guidelines, graduate student learning outcomes are evaluated and reported to the centralized Accountability Management System (AMS) using Taskstream software since implementation in 2017. We established a systematic means of characterizing student learning in relation to targeted outcomes, and documenting directions for change as warranted. Taskstream reports are included in **APPENDIX I** for all three graduate programs. Assessment outcomes prior to 2017 are accessible via the legacy <u>UA Outcomes Website</u> archives.

The program assessment includes outcomes in relation to the following: For the MS in Speech-Language Pathology (APPENDIX I)

- Comprehensive examination that occurs toward the end of the second year of the MS program.
- Exit survey to gather student ratings of competency and mastery of key concepts For the Doctor of Audiology (APPENDIX I)
 - Comprehensive examination that occurs toward the end of the fourth year of the AuD program.
 - Evaluation of the Audiology Doctoral Project as a written product
- Exit survey to gather student ratings of competency and mastery of key concepts For the Doctor of Philosophy (APPENDIX I)
 - Comprehensive examination required to move to candidacy
 - Evaluation of the dissertation as a written product
 - Oral defense of the dissertation
 - Exit survey to gather student ratings of competency and mastery of key concepts

ADDITIONAL PROGRAM LEARNING OUTCOMES

The Master of Science Degree with a clinical focus in Speech-Language Pathology is designed to meet all of the required knowledge and skills to meet the <u>Standards for the Certificate of Clinical Competence in</u> <u>Speech-Language Pathology</u>. Similarly, the Doctor of Audiology degree requires that students meet all the knowledge and skills set forth in the <u>Standards for the Certificate of Clinical Competence in</u> <u>Audiology</u>. As an accredited program, the assessment process and documentation of learner outcomes must meet national standards and are subject to annual review, with reaccreditation every eight years. The assessment plan is too comprehensive to review here, but it involves the following:

- A matrix of all required knowledge and skills in relation to all coursework in the degree program.
 - \circ $\;$ Documentation that each student achieves mastery of required course content.
 - If a student fails to reach established mastery, a remediation plan is established and documented.
- An assessment plan is in place to document the progressive mastery of required clinical skills using a dedicated software program that tracks all clinical experiences across disorder types and age span.
 - Clinical tracking software is used by students and clinical faculty, as well as off-campus preceptors, to document the nature of each clinical experience and the demonstration of skills.

When assessment findings indicate that students are not meeting learner outcomes as expected, the faculty are prompted to review, evaluate, and modify aspects of coursework and/or clinical training. This is a natural aspect of curricular refinement and adjustment that occurs each year

An additional assessment tool that offers data regarding overall learning outcomes is the <u>Praxis[®] exam</u> in speech-language pathology and the equivalent in audiology. A passing score on the exam is a required component of ASHA certification standards and it provides an index of knowledge acquired. Although students are not required to take that exam as part of their academic program, most students take the exam before they graduate. The exam scores are shown in **TABLE I.4.a**. for speech-language pathology and **TABLE I.4.b**. for audiology.

TABLE I.4.a. S	LHS Graduate Stu	dent Performance o	n National Certi	ification Examinat	ion in Speech-Language
Pathology (PF	AXIS)				

FY		University	of Arizona		National*			
	# taking	Average	Passing	Percent	n	National	Percent Passed	
	exam	Score	Score	Passed		Mean (SD)	(%)	
		(of 200)	(of 200)	(%)				
2018/19	24	192.1	162	100	9178	175 (11)	89.5	
2017/18	21	191.9	162	100	8833	176 (11)	91.5	
2016/17	22	190.1	162	100	9682	176 (11)	90.8	
2015/16	21	188.5	162	100	9132	176 (11)	90.5	
2014/15	21	190	162	100	8454	176 (12)	90.3	
2013/14	23	761.7	600	100	8011	684 (64)	90.1	
2012/13	22	762.3	600	100	7477	684 (65)	89.5	

*<u>National Summary Report</u>: Descriptive Statistics of PRAXIS Examination Scores for the Speech-Language Pathology Specialty Test

FY		University o	f Arizona			National*	
	# taking	Average Score	Passing	Percent	n	National	Percent
	exam	(of 200)	Score	Passed		Mean (SD)	Passed
				(%)			(%)
2018/19	6	174.8	170	100	576	177 (9)	81.6
2017/18	1	185	170	100	733	177 (10)	82.1
2016/17	6	183.8	170	100	730	178 (9)	87.1
2015/16	3	184.3	170	100	712	179 (9)	90.6
2014/15	4	177.5	170	100	672	178 (10)	85.6
2013/14	4	180.5	170	100	653	176 (10)	85
2012/13	2	174.5	170	100	539	175 (10)	80.5
	9	778	600	100		630 (111)ª	

TABLE I.4.b. SLHS Graduate Student Performance on National Certification Examination in Audiology (PRAXIS)

*National Summary Report: Descriptive Statistics of PRAXIS Examination Scores for the Audiology Specialty Test for Test Administration Years 2008-2009 through 2018-2019 (https://www.asha.org/uploadedFiles/PraxisScoresAud.pdf) a) ETS implemented a new scaled score range for the audiology exam in January 2013. The new scaled score range of 100-200. The old score range was 250 to 990. The means and standard deviations for both exams administered during the 2012-2013 test year are presented. The revision resulted in a much broader distribution of scores and associated increase in the standard deviation.



ACADEMIC OUTREACH

J. ACADEMIC OUTREACH

Outreach to the community is a natural activity of our Department as we provide direct service to individuals regarding the assessment and treatment of communication disorders. Our on-campus speech, language, and hearing clinics provide high quality evaluation and management of communication disorders across the lifespan to some 3,000 individuals each year, with off-campus service delivery to at least another 2,000 people -- but we do much more than that. Our contributions include a) model clinical service delivery programs, b). continuing education for professionals, c). community lectures and health education for the lay public, and d). advocacy for



Assistant Professor Meghan Darling-White presenting the Grunewald-Blitz Workshop in 2019 on assessment and treatment of dysarthria in children.

individuals with communication disorders. The activities and outcomes are highlighted below.

Community Leadership and Service

- Current Leadership
 - President, Arizona Speech-Language-Hearing Association, Casteix, 2019-present
 - Vice President of Audiology, ArizonaSpeech and Hearing Association, Barakat, 2019present
 - o Board Member, Arizona Audiology Coalition (AAC), Hansen, 2016-present
 - Volunteer supervisor in the Hearing Health Clinic at the Arizona-Sonora Borders, Projects for Inclusion, Velenovsky, 2015- present
 - o Professional Advisory Council, Autism Society Southern Arizona, Casteix, 2015-present
 - o Tucson Chapter leader, National Stuttering Association, Hawley, 2014-present
 - o United Way First Focus on Kids Early Advocacy Committee, Jensen, 2019
 - Developer and facilitator of the Tucson Arizona Bilingual Speech Pathologists and Audiologists (ABISPAS) clinical outreach program, **Fabiano-Smith**, 2013-present
 - Sponsor, Community Speech-Language Pathology Collaborative Learning Series, Alt, 2008-present
 - o Manager, Sertoma Arizona Hearing Aid Bank, Tucson, AZ, Muller, 1998-present
- Professional Development Committee, Arizona Speech-Language-Hearing Association, **Barakat**, 2017-2018
- Cultural and Linguistic Diversity Committee, Arizona Speech-Language-Hearing Association, Hernandez (Co-Chair, present), Wong (Member, 2020-present)
- Executive Board Member, Arizona Speech-Language-Hearing Association, Casteix, 2016-2018
- Organizer, Aphasia Awareness Walk, Tucson, AZ, Hawley, 2014-2015
- United Way Optimizing Early Intervention Committee, Jensen, 2014
- Advisory Board, Chapel Haven West (program for young adults on autism spectrum), **Beeson**, 2013-2017

- Arizona State Department of Education Committee on Diagnostic Eligibility for Speech Language Pathology Services, **Fabiano-Smith**, 2011-2016
- Festival of Hope SLHS Coordinator, Tucson, AZ, Muller, 1999-2018

Service and Outreach

 Outreach to the local community is an exceptional strength of this department. In addition to service delivery to individuals with communication disorders in our speech, language, and hearing clinics, we consistently provide education to the professional and lay community in the form of workshops and lectures.

Specialty Clinical Programs: Our

Department offers specialty programs for individuals with communication disorders that have become local, state, and national models of service delivery. Like all of our clinics, these programs benefit the participants and provide training for our students, but several programs are worthy of specific notice because they also served as national models of service delivery.

 Aphasia Groups – for more than two decades, the University of Arizona has been recognized as a leader in group treatment for individuals with aphasia. The



SLHS Clinical Instructor, Dr. Dori Scholer, shares vocal hygiene concepts with Pueblo High School's Mariachi Summer Camp in 2018

weekly groups provide a functional context for individuals with acquired communication impairment to develop and practice conversational skills. The program has been featured in book chapters, educational videos, and the popular press. Professionals from other institutions visited our program prior to developing their own programs. The program was also the inspiration for other group programs throughout Tucson and Arizona, so that the impact extends far beyond our current groups.

- Living with Hearing Loss Groups Another innovative program for the community is our Living with Hearing Loss program. The program conducts three to six week training sessions with individuals with hearing loss and their communication partners to train them in strategies to maximize communication success. Information about this program has been shared at numerous national conferences and recognized by the American-Speech-Language-Hearing Association as a model program.
- The Wings on Words preschool is a program located near to campus where children with specific language impairment receive education in an environment that is specifically designed to promote language development. Many of our MS-SLP students receive clinical training in this unique environment as part of their clinical rotations.

Community Outreach: Our Department interfaces with the community on a daily basis, but also maintain an active schedule of outreach activities. TABLE J.1 gives summary numbers, but a glance at APPENDIX N shows the range and consistency of our contact with the community in the form of lectures, health fairs, and special programs. We highlight three programs below:

- Tucson Hope Fest
 - The Tucson Hopefest is a large-scale health and services fair for low income and homeless Tucsonans.
 Each year our clinical faculty and students provide hearing and speech screenings and referrals for approximately 100 individuals ranging from newborn to elderly.
- Pima County Hearing Aid Bank
 - The Pima County Hearing Aid Bank is a cooperative program of the Community Outreach Program for the Deaf, Midtown Sertoma, and the University of Arizona Hearing Clinic through which low-income elderly adults can obtain reconditioned used hearing aids at very little cost, \$70



University of Arizona Student Academy of Audiology Students Participate at the Walk4Hearing, 2017

per aid. The U of A Hearing Clinic provides all clinical care from evaluation, through fitting and follow up for years. We serve approximately **70 new patients per year** and spend approximately **600 hours per year** providing these services.

- La Clinica at St. Andrews, Nogales
 - Once a month, our clinical faculty and students provide hearing evaluations and help with the provision of hearing aid verification through this multidisciplinary clinic for low income children given special permission to cross the border from Nogales Mexico. We have been involved in this program for more than 15 years.



SLHS Faculty and Kathy Hoffman (SLHS Alum, MS⁷13; third from right) who is the current Arizona Superintendent of Public Instruction

Advocacy and Legislative Service: Our faculty are active in state and local issues that affect the quality of speech, language, and hearing services provided to the public. Both tenuretract and clinical faculty serve on state committees to advocate, protect, and regulate service delivery for those with communication disorders. Examples include participation on statewide Decision Theatre: *Solutions to the Shortage of Speech-Language Pathologists in*

Arizona's Schools, ethics committees, early childhood development task force, and the like.

Continuing Education for Professionals: SLHS faculty are committed to advancing our own education and promoting continuing education within the professional community. To do so, we sponsor professional lectures and full-day workshops on a variety of topics. Some events are taught by our faculty, others by other local professionals, and by national and international experts as well. All of the professionals in the community who serve as clinical preceptors for our graduate students are provided at least one complementary workshop per year. A summary of the number of events is listed below, and a more complete history is included in **APPENDIX N.**



Many of our SLHS Faculty have been featured on NPR's Arizona Science Today, including SLHS and Neuroscience Assistant Professor Julie Miller, PhD, (Arizona PM Episode 163, 2019).

Dr. Leah Fabiano-Smith featured on KGUN News for Research Studying Speech Assessments to Benefit Bilingual Children (2018).

Academic Year	12/13	13/14	14/15	15/16	16/17	17/18	18/19	19/20	Totals
Workshops/Conferences	7	5	6	4	4	4	5	3	38
# Participants	326	245	320	284	152	280	586	1222	3,415
Continuing Ed Hours*	26	22.5	24	17.5	11	20.5	33	27	181.5
Public Lectures &	2	2	5	2	3	1	3	0	18
Community Talks									

TABLE J.1. Summary of Educational and Outreach Events Offered by SLHS (see details in Appendix N)

*Actual hours of continuing education; CEU credit through ASHA



COLLABORATION WITH OTHER UNITS

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K. COLLABORATION WITH OTHER UNITS

The Department of SLHS engages in extensive interaction with other academic units at the University of Arizona. Virtually every member of our faculty has substantial interactions with colleagues in other departments. These interactions include involvement in interdisciplinary programs, courtesy appointment, service on mentoring committees. **APPENDIX O** provides a table to indicate the specific collaborations that are highlighted here:

> At least eight faculty members have courtesy appointments in other other units, including Biomedical



Collaborators on the Oyendo Bien Research Project Joining Faculty Members in Spanish/Translation Studies (Sonia Colina, pictured) and Maia Ingram from College of Public Health (pictured), 2016.

Engineering; Linguisitics; Neurology; Otolaryngology, Head & Neck Surgery; Pediatrics, Spanish/Portuguese; School of Public Health; and the BIO5 Institute

- Half of the faculty are members of a **Graduate Interdisciplinary Programs**, including Cognitive Science; Neuroscience; Second Language Acquisition and Teaching; and Applied Intercultural Arts Research GIDPs (see details in **APPENDIX O**).
- Interdepartmental research collaborations include:
 - Main campus departments: Athletics; Psychology, Linguistics, Education, Spanish/Portuguese, Chemistry, Optical Sciences
 - University of Arizona Health Sciences Center: Pediatrics, Neurology, Nursing, Radiology, Surgery (Division of Otolaryngology)
 - School of Music
 - School of Public Health: Family & Child Health, Health Promotion, Environmental and Occupational Health
 - o Bio5 Institute
- Graduate Interdisciplinary Program Membership
 - o Cognitive Science: Alt, Beeson, Dai, Fabiano-Smith, Kielar, Plante, Story
 - o Second Language Acquisition and Teaching: Alt, Fabiano-Smith, Story
 - Neuroscience: Miller
 - Applied Intercultural Arts Research: Story
 - Research Collaborations with Faculty from Other Units
 - Animal and Comparative Biomedical Sciences: Miller
 - Athletics: Brown
 - Bio5: Brown, Kielar, Miller
 - Biomedical Engineering: Miller
 - Center on Aging: Samlan
 - Center for Innovation in Brain Science: Miller
 - o Linguistics: Kielar
 - College of Medicine (Otolaryngology, Head and Neck Section): Samlan

- o School of Medicine, Department of Neurology, Brown, Beeson, Kielar
- School of Music: Samlan
- Physiology: Bunton
- o Psychology: Alt, Brown, Hoit, Kielar, Marrone, Miller, Plante
- Public Health: Marrone
- Spanish/Portuguese: Marrone
- Student Health Center: Brown
- Courtesy appointment with other Departments/Units
 - Linguistics: Fabiano-Smith, Kielar, Story
 - o Biomedical Engineering: Story
 - Neurology: Beeson, Miller
 - Otolaryngology, Head & Neck Surgery: Samlan
 - Spanish/Portuguese: Fabiano-Smith
 - School of Public Health: Marrone
 - o BIO5 Institute: Beeson, Kielar, Miller
- Guest Lectures
 - Cognitive Science: Kielar
 - Engineering/Robotics: Casteix
 - Geology: Alt, Beeson
 - Graduate College: Hoit
 - Linguistics: Beeson, Kielar, Story
 - Mathematics: Story
 - Music: Samlan, Monahan, Scholer
 - o College of Medicine: Alt, Beeson, Marrone, Velenovsky, Cazzato, Casteix
 - o Otolaryngology, Head & Neck Surgery: Samlan, Monahan, Scholer, Cazzato
 - College of Nursing: Velenovsky, Casteix
 - Neuroscience and Cognitive Sciences: Darling-White
 - Physics: Story
 - Physiology: Hoit
 - o Public Health: Marrone
 - Richard F. Caris Mirror Laboratory: Velenovsky
 - Theater: Samlan, Scholer
 - Service Committees (e.g., search committee, APR review, operations)
 - Graduate College: Hoit, Career Counselor Search Committee
 - Neuroscience: Hoit, P&T Committee ;
 - Neuroscience: Miller, Faculty Search Committee, APR self-study Committee, Department Chair Five Year Review Committee)
 - College of Science: Hoit, Strategic Planning Committee; Galileo Circle Fellows Selection Committee
 - English: Academic Program Review Committee, Hoit
 - SLAT: Academic Program Review Committee, Alt
 - Psychology: Faculty Search Committee, Alt
 - Dean of College of Science 5-year review committee (Alt)
 - Neurology Academic Program Review: Beeson
 - NSCS curriculum, Kielar, Miller
 - NSCS executive steering committee (Miller)
 - MRI operations: Plante, Kielar, Beeson
 - o TBRI 3T Advisory committee, Kielar

- Higher Learning Commission Faculty Associate, Bunton
- Music: Cone, Faculty search committee
- Neuroscience GIDP: Miller-Seminar Selection Committee & Graduate Admissions Committee
- Mentoring Students from Other Units
 - Electrical and Computing Engineering: Dai
 - Ecology & Evolutionary Biology: Miller
 - Linguistics: Bunton, Kielar, Story, Velenovsky
 - School of Music: Samlan, Story
 - Neurosicence/Cognitive Science (Honor's theses): Kielar, Miller
 - Psychology: Kapa
 - School of Public Health: Marrone



FACULTY PLANNING FOR OUR FUTURE

SECTION L: FACULTY PLANNING FOR OUR FUTURE

The SLHS faculty members are enthusiastic about many aspects of our current program, but we always have a vision for how we could be better. As we consider the future, we return to our strategic priorities:

- STUDENT SUCCESS: To provide exemplary education programs that prepare the next generation of scientists, clinicians, educators, and leaders in the field of communication sciences and disorders.
- FACULTY EXCELLENCE: To recruit, mentor, and retain strong, diverse faculty, and enhance the infrastructure for excellence in teaching and research.
- SCHOLARSHIP: To conduct state-of-the-art basic, translational, and clinical research in communication sciences and disorders.
- QUALITY CARE: To enhance access to culturally competent, evidence-based clinical care for people with communication needs.
- OUTREACH To engage in outreach activities that directly benefit professional colleagues, students, and individuals and their families in the community.



As we consider these strategic priorities and our collective view of the future, we recognize two imperatives: First, the need to strengthen the economic base for the department. Second, the need to support faculty retention and growth, including increased diversity. We pair these needs with our commitment to further advance the quality of our educational programs, and we have the scaffolding for action plans that provide support for all of our strategic priorities.

Toward Strengthening the Economic Base for the Department

We will examine current strategies and new directions to:

- Increase undergraduate enrollment (recruitment and retention)
- Explore revenue opportunities that align with our goals, including post-baccalaureate certificate program and online education options leveraging experiences from COVID-19 remote teaching
- Further develop clinical contracts that offer excellent clinical education opportunities with a strong financial return (similar to our contracts with Banner University Medical Center)
- Increase external grant funding
- Increase donor base and giving to the department

Supporting Faculty Retention and Growth

We will elaborate plans to:

- Foster faculty success by protecting time and providing adequate support for scholarship and teaching
- Enhance the infrastructure to support research including increased administrative support for the grant process
- Actively explore means to provide stronger, more accessible statistical support for researchers

- Promote an equitable and inclusive culture that fosters collegiality, peer elevation, and respect
- Advocate and strategize for the hiring of additional tenure-track and career-track faculty to maintain robust programs with significant impact

Maintain and Advance Excellence for Our Educational Programs

We will direct our efforts toward:

- Advancing integrated programmatic development that bridges classroom and clinical education including innovative clinical service delivery
- Maintaining and advancing high educational standards
- Advancing cultural competence
- Balancing the size of degree programs in relation to resources

In closing, we summarize that SLHS is a highly motivated, innovative, and productive department that represents the University well in local, state, national, and international contexts. As a group, we love our work, enjoy our students and colleagues, and have great appreciation for Arizona and its residents. We conduct science, teach students, and improve the lives of individuals and families living with communication disorders. Thus, the alignment of our program mission with the Strategic Plans for the University is natural and genuine. We each strive to do better in the individual roles that we play in the department and are dedicated to continued advancement of our program as a whole.



OLD MAIN

SPECIAL CONSIDERATIONS: THRESHOLD FOR PRODUCTIVE PROGRAMS

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SECTION M: SPECIAL CONSIDERATIONS: THRESHOLD FOR DEFINING PRODUCTIVE PROGRAMS

Our undergraduate and graduate programs meet the threshold requirement for number of degrees granted over the most recentl three-year period set forth by the Arizona Board of Regents.

Type of Degree	ABOR requirement	SLHS 3-year total
Baccalaureate	24 or more	202 BS
Masters	9 or more	80 MS
Doctorate	6 or more	24 AuD
Doctorate	6 or more	9 PhD

TABLE M.1. Number of Degrees Granted by SLHS in Relation to ABOR Requirement



APPENDICES

Faculty Name	2012-13	2013-14	2014-15	2015-16	2016-17	2017-18	2018-19	2019-20
Alt, Mary	Assoc Prof	Assoc Prof	Assoc Prof	Assoc Prof	Assoc Prof	Assoc Prof	Assoc Prof	Prof T+
	T+	T+	T+	T+	T+	T+	T+	Assoc DH
Beeson, Pélagie	Prof T+	Prof T+	Prof T+	Prof T+	Prof T+	Prof T+	Prof T+	Prof T+
	Dept Head	Dept Head	Dept Head	Dept.Head	Dept.Head	Dept.Head	Dept.Head	Dept.Head
Brown, Jessica						Asst Prof TE	Asst Prof TE	Asst Prof TE
Bunton, Kate	Assoc Prof	Assoc Prof	Assoc Prof	Assoc Prof	Assoc Prof	Assoc Prof	Assoc Prof	Assoc Prof
	TE	TE	TE	T+	T+	T+	T+	T+
Cone, Barbara	Prof T+	Prof T+	Prof T+	Prof T+	Prof T+	Prof T+	Prof T+	Prof T+
Dai, Haunping	Assoc Prof	Assoc Prof	Assoc Prof	Assoc Prof	Assoc Prof	Assoc Prof	Assoc Prof	Assoc Prof
	TE	TE	T+	T+	T+	T+	T+	T+
Darling-White,				Asst Prof	Asst Prof	Asst Prof	Asst Prof	Asst Prof
Meghan				TE	TE	TE	TE	TE
DeDe, Gayle	Asst Prof TE	Assoc Prof T+	Assoc Prof T+					
Fabiano-Smith,	Asst. Prof	Asst. Prof	Asst. Prof	Asst. Prof	Asst. Prof	Assoc Prof	Assoc Prof	Assoc Prof
Leah	TE	TE	TE	TE	TE	TE	T+	T+
Hoit, Jeannette	Prof T+	Prof T+	Prof T+	Prof T+	Prof T+	Prof T+	Prof T+	Prof T+
Kapa, Leah							Asst Prof TE	Asst Prof TE
Kielar, Aneta					Asst Prof TE	Asst Prof TE	Asst Prof TE	Asst Prof TE
Lotto, Andrew	Assoc. ProfT+	Assoc. Prof T+	Assoc. Prof T+	Assoc. Prof T+	Assoc. Prof T+			
Maas, Edwin	Asst Prof TE	Asst. Prof TE	Asst. Prof T+					
Marrone, Nicole	Asst Prof	Asst Prof	Asst Prof	Asst Prof	Asst Prof	Asst Prof	Assoc Prof	Assoc Prof
	TE	TE	TE	TE	TE	TE	T+	T+
Miller, Julie ^{.40 FTE}			Asst Prof TE ^{.40}	Asst Prof TE ^{.40}	Asst Prof TE ^{.40}	Asst Prof TE .40	Asst Prof TE ^{.40}	Asst Prof TE ^{.40}
Musiek, Frank .70 FTE			Prof NTE .70	Prof NTE .70	Prof NTE .70	Prof NTE .70	Prof NTE.70	Prof NTE. ⁷⁰
Plante, Elena	Prof T+	Prof T+	Prof T+	Prof T+	Prof T+	Prof T+	Prof T+	Prof T+
Samlan, Robin		Asst Prof	Asst Prof	Asst Prof	Asst Prof	Asst Prof	Asst Prof	Assoc Prof T+
		TE	TE	TE	TE	TE	TE	Assoc DH
Story, Brad	Assoc Prof T+	Prof T+	Prof T+	Prof T+	Prof T+	Prof T+	Prof T+	Prof T+
	Assoc DH	Assoc DH	Assoc DH	Assoc DH	Assoc DH	Assoc DH	Assoc DH	Assoc Dean
Wilson, Stephen	Asst Prof TE	Asst Prof TE	Asst Prof TE	Asst Prof TE				
Total Faculty FTE	14	15	16.10	15.10	15.10	15.10	16.10	16.10

APPENDIX A. ACADEMIC FACULTY EMPLOYMENT HISTORY (TE = Tenure Eligible; T+ = Tenured; NTE = Nontenure-Eligible)

NOTE: FTE = 1.0 unless indicated otherwise.

APPENDIX B. SLHS CAREER-TRACK FACULTY OVER TIME

B1. Senior Lecturer & Clinical Professor FTE allocated to teaching (FTE = 1.0 unless indicated otherwise; RET = retired)

Career Track	2012-13	2013-14	2014-15	2015-16	2016-17	2017-18	2018-19	2019-20
Teaching								
Dean, James	Sr Lecturer ^{.80 FTE}	Sr Lecturer	Sr Lecturer	Sr Lecturer	Sr Lecturer	Sr Lecturer RET 6/2018		
Velenovsky, David	Sr Lecturer	Sr Lecturer	Sr Lecturer	Sr Lecturer	Sr Lecturer	Sr Lecturer	Sr Lecturer	Sr Lecturer
DeRuiter, Mark						Clinical Prof 0.50 FTE	Clinical Prof 0.50 FTE	Clinical Prof 0.50 FTE
NT Teaching FTE	1.8	2.0	2.0	2.0	2.0	2.5	1.5	1.5

B2. Audiology Clinical Faculty FTE allocated to clinical education/service delivery (FTE = 1.0 unless indicated otherwise; DEP = departed; RET = retired)

Clinical Faculty	2012-13	2013-14	2014-15	2015-16	2016-17	2017-18	2018-19	2019-20
Audiology								
Adamovich,		Clinical	Clinical	Clinical				
Stephanie		Asst Prof	Asst Prof	Asst Prof				
Barakat, Fadyeh					Clinical	Clinical	Clinical	Clinical
					Instructor	Instructor	Asst Prof	Asst Prof DEP 2/20
Dean, James	Clin Inst .20 FTE	Shift to fulltime Sr. Lecturer						
DeRuiter, Mark						Clinical	Clinical	Clinical
(Admin)						Prof ^{0.0 FTE}	Prof ^{0.0 FTE}	Prof ^{0.0 FTE}
Hansen, Erica					Clinical	Clinical	Clinical	Clinical
					Instructor	Instructor	Asst Prof	Asst Prof
Harris, Frances	Clinical	Clinical Assoc						
	Assoc Prof .50 FTE	Prof RET 1/14						
Muller, Thomas	Clinical	Clinical	Clinical	Clinical	Clinical	Clinical	Clinical	Clinical
	Assoc Prof	Assoc Prof	Assoc Prof	Assoc Prof	Assoc Prof	Assoc Prof	Assoc Prof	Assoc Prof
Norrix, Linda	Clinical	Clinical	Clinical	Clinical	Clinical	Clinical	Clinical	Clinical
	Asst Prof	Asst Prof	Asst Prof	Asst Prof	Assoc Prof	Assoc Prof	Assoc Prof	Assoc Prof
Peterson, Julie	Clinical	Clinical	Clinical	Clinical				
	Instructor	Instructor	Instructor	Instructor				
Smith, Diane								Clinical
.49 FTE								Instructor 0.25 FTE
Wong, Aileen		Clinical	Clinical	Clinical	Clinical	Clinical	Clinical	Clinical
.80 FTE OVERALL		Instructor 0.50 FTE	Instructor 0.50 FTE	Instructor 0.50 FTE	Instructor 0.33 FTE	Instructor 0.33 FTE	Instructor 0.33 FTE	Asst Prof 0.33 FTE
Clinical Faculty FTE for Aud	3.7	4.5	4.50	4.50	4.33	4.33	4.33	4.24

Clinical Faculty	2012-13	2013-14	2014-15	2015-16	2016-17	2017-18	2018-19	2019-20
S-L Pathology								
Al Jurf, Soha .49 FTE				Clinical	Clinical	Clinical		
Main Campus				Instructor .49 FTE	Instructor ^{.49 FTE}	Instructor .49 FTE		
Casteix, Jennifer	Clinical	Clinical						
Main Campus	Asst Prof	Asst Prof	Asst Prof	Asst Prof	Assoc Prof	Assoc Prof	Assoc Prof	Assoc Prof
Cazzato, Kathleen						Clinical	Clinical	Clinical
Main & Banner North						Asst Prof	Asst Prof	Asst Prof
Faux Muller, Cass	Clinical	Clinical Assoc						
Main Campus	Asst Prof	Assoc Prof	Prof RET 1/20					
Hawley, Janet	Clinical	Clinical						
Main Campus	Asst Prof	Assoc Prof	Assoc Prof					
Hernandez, Rui					Clinical	Clinical	Clinical	Clinical
Main Campus					Instructor	Asst Prof	Asst Prof	Asst Prof
McGrath, Kathe ^{.80 FTE}	Clinical	Clinical	Clinical	Clinical	Clinical Assoc			
Main Campus	Asst Prof .80 FTE	Prof .80 RET 7/17						
Monahan, Natalie							Clinical	Clinical
Banner North							Asst Prof ^{.80}	Asst Prof ^{.80}
Scholer, Dori							Clinical Instructor	Clinical
Banner North							.80	Instructor ^{.80}
Wymer (Jensen), Carole	Clinical	Clinical	Clinical	Clinical	Shift to Child Lang			
Main Campus	Asst Prof	Asst Prof	Asst Prof	Asst Prof	Center (below)			
Clinical Faculty FTE SLP	4.8	4.8	4.8	5.29	4.29	5.49	6.6	6.6
Main Campus + Banner								
Kiernan, Barbara Child Lang Center/WOW	Director, CLC	Director, CLC	Director, CLC	Director, CLC .50 FTE	Director, CLC .50 FTE RET 1/17			
Wymer (Jensen), Carole					CLC Director .50	CLC Director .50	CLC Director .50	CLC Director .50
Child Lang Center/WOW					Clin Asst Prof ^{.50}	Clin Asst Prof ^{.50}	Clin Asst Prof .50	Clin Asst Prof ^{.50}
Kaplan, Tracey	Clinical Asst Prof							
Cuzner, Lea ^{.80 FTE}	Clinical Asst Prof ^{.80 FTE}	Clinical Asst Prof ^{.80 FTE}	Clinical Asst Prof ^{.80 FTE}	Clinical Asst Prof ^{.80 FTE}	Clinical Asst Prof ^{.80 FTE}	Clinical Asst Prof ^{.80 FTE}	Clin Asst Prof ^{.80} FTE DEP 6/19	
Reeb, Kristen								Clinical
Child Lang Center/WOW								Instructor
Clinical Faculty FTE for	1.8	.80	.80	.80	1.3	1.3	1.3	1.5
Child Lang Center/WOW								
Total Clinical FTE in S-L	6.6	5.6	5.6	6.09	5.59	6.79	7.9	8.1
Pathology								

B3. Speech-Language Clinical Facult	v FTE allocated to clinical education/service delivery	V (FTE = 1.0 unless indicated otherwise; DEP = departed; RET = retired)
	/ · · · · · · · · · · · · · · · · · · ·	γ

Research	2012-13	2013-14	2014-15	2015-16	2016-17	2017-18	2018-19	2019-20
Professionals								
Figueroa, Cecilia	Research SLP	Research SLP	Research SLP	Research SLP	Research SLP	Research SLP	Research SLP	Research SLP
Oglivie, Trianna							Research	Research
							Scientist	Scientist
Patterson,	Asst Comp	Asst Comp	Asst Comp	Asst Comp	Asst Comp	Asst Comp	Research	Research
Dianne .75 FTE	Manager	Manager	Manager	Manager	Manager	Manager	Scientist	Scientist
Rising, Kindle	Research SLP	Research SLP	Research SLP	Research SLP	Research SLP	Research SLP	Research SLP	Research SLP
Vance, Becky	Laboratory Sr	Laboratory Sr	Research SLP					
	Manager	Manager						
Wong, Aileen					Research Aud	Research Aud	Research Aud	Research Aud

B4.	Research Professionals over	Time (externally	y funded) (FTE = 1.0 unless indicated otherwise)
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APPENDIX C. SLHS STAFF EMPLOYMENT HISTORY (FTE = 1.0 unless indicated otherwise; DEP = departed; RET = retired)

C1. SLHS Department Support Staff (Department funding)

Name	2012-13	2013-14	2014-15	2015-16	2016-17	2017-18	2018-19	2019-20
Area								
Phelan, Kevin	Business	Coordinator,	Coordinator,	Coordinator,	Coordinator,	Coordinator,	Coordinator,	Coordinator,
Business	Manager	Business	Business	Business	Business	Business	Business	Business
Jacobs, Sherry	Assoc	Assoc	Assoc	Assoc				
Business Support	Accountant	Accountant	Accountant	Account RET 11/15				
Lavine, Debra .60 FTE								Office Specialist
Business Support								.60 FTE
Veatch, Stephanie	Office Specialist	Office Specialist	Office Specialist					
Front Office								
Curran, Mary				Admin	Admin			
Front Office				Assistant	Assistant			
Sasser, Kim						Office Specialist	Office Specialist	Admin Assistant
Front Office						.80 FIE	.80 FTE	1.00 FTE
Minopoli, Denise	Admin	Coord Student						
Student Services	Assistant	Services	Services	Services	Services	Services DEP 1/18		
Bridgewater, Susan						Coord Student	Coord Student	Coord Student
Student Services						Services Start 5/18	Services	Services
Fay, Cathy	Admin	Admin	Coordinator	Coordinator	Coordinator			
Development	Associate	Associate	Development	Development	Develpmt RET 1/17			
Eriksson, Dana					Outreach/Com	Outreach/Com	Outreach/Com	
Development					Relations .80 FTE	Relations .80 FTE	Relations .80 FTE	
Low, Sarah								Outreach/Com
Development								Relations DEP 3/20
Radosevic, Denise								Office Specialist
Development								.60 FTE
SLHS Staff FTE	5	5	5	4.8	4.8	3.4	3.6	4.4
SLHS Funded								

C2. SLHS Clinic Support Staff (Department funding)

CLINICAL STAFF	2012-13	2013-14	2014-15	2015-16	2016-17	2017-18	2018-19	2019-20
Enneking, Lacy	Assoc	Coordinator	Coordinator	Coord Med				
Clinic Billing	Account	Med Billing	Med Billing	Billing RET 1/16				
Sellers, Elizabeth				Coord Med	Coord Med			
Clinic Billing				Billing	Billing RET 1/17			
Barakat, Feday					Admin Assoc	Admin Assoc	Coordinator	Billing &
Clinic Billing							Med Billing	Claims Supv
Sanchez, Patricia	Admin Asst	Admin Asst	Admin Asst	Admin Asst	Admin Asst	Admin Asst	Admin Asst	Admin Asst
Buteyn, Shaunna	Admin Asst	Admin Asst	Admin Asst	Admin Asst				
Smith, Pam				Admin Asst DEP 2/16				
Calderon, Julieta					Admin Asst	Admin Asst	Admin Asst	
Leffler, Joan					Admin Asst	Admin Asst	Admin Asst DEP 10/19	
Warren, Selina							Admin Asst	Admin Asst
Clinic Staff FTE-SLHS Funded	3	3	3	3	4	4	4	3

C3. Child Language Center/Wings on Words Preschool Support Staff (CLC funding)

CHILD LANGUAGE CENTER STAFF	2012- 13	2013-14	2014-15	2015-16	2016-17	2017-18	2018-19	2019-20
#CLC staff (variable FTE)	16	11	10	11	12	10	10	10

C4. Undergraduate Academic Advising (College of Science funding)

UNDERGRAD ADVISING	2012-13	2013-14	2014-15	2015-16	2016-17	2017-18	2018-19	2019-20
Wijeweera, Raini	Acad Advisor	Acad Advisor	Acad Advisor					
Morrell, Lindsay				Acad Advisor	Acad Advisor			
Palacio, Andrea						Acad Advisor	Acad Advisor	Acad Advisor

C5. SLHS Information Technology Staff (Split funding with School of Mind, Brain, & Behavior; SLHS FTE shown)

IT SERVICES	2012-13	2013-14	2014-15	2015-16	2016-17	2017-18	2018-19	2019-20
InAlbon, Peter		IT Manager	IT Manager	IT Manager	IT Manager	IT Manager	IT Manager	IT Manager
Reichenbacher, R.					Systems Admin	Systems Admin	Systems Admin	Systems Admin
Dept & School					.35 FTE SLHS	.35 FTE SLHS	.35 FTE SLHS	.35 FTE SLHS

APPENDIX D. RECOMMENDATIONS FROM 2012 ACADEMIC PROGRAM REVIEW

The following recommendations were made by the Academic Program Review Committee

- Continue to provide excellent programs at the UG and graduate levels in speech-language and hearing sciences
- Continue to promote a culture of seeking extramural research support
- Some of the research productive academic faculty have relatively heavy teaching loads, some relief in terms of teaching is needed
- Increase the resources to the PhD program by directing more of the faculty effort toward this aspect of student training;
- Given the dramatic increase in UG enrollment and majors, more TAs are needed
- Consider reallocating TA funding to PhD students, with rotations across TA and RA assignments this would help with recruitment of PhDs, provide teaching experience for students who will actually be teaching as part of their future positions (rather than engaging in clinical activities), and provide RAs for junior faculty without grant support
- Use the Neuroscience GIDP (Graduate Interdisciplinary Program) and Physiology GIDP as potential PhD student recruiting mechanisms
- Charge a professional program fee for MS and AuD programs to offset costs of clinical training consider increasing the current off-site practicum fee of \$100 and extending this type of fee to other aspects of clinical training to recover costs
- Should academic faculty positions become available, the areas that seem especially important include autism, bilingualism, and hearing science
- Attempt to increase faculty salaries to be more highly competitive to stave off recruitment of productive researchers by other universities, especially at the senior level. It should be noted that the review team had questions about the accuracy of the salary data for other institutions reported in TABLE E.11 (pg.29) of the self-study (it appears to be too high for some of the schools); this was discussed with the Department Head who is following up on this matter;
- Recent remodeling and amount of space is excellent, but there is some need for further remodeling in the clinic (e.g., adult hearing assessment); some of the current spaces preclude seeing more than one client at a time because of HIPPA privacy issues
- Increase the quality of IT support for the department
- Allow the department to specify the qualifications of the IT personnel needed to support the research and teaching missions; this may also include imp roving program and lab websites
- Allow the faculty to interview and participate in selection of IT personnel
- Consider instituting an undergraduate degree requirement for general biology in the SLHS curriculum
- The PhD program should have a statistics requirement; other PhD programs in this field typically require 2-3 statistics courses
- Continue to create intellectual diversity among new hires (as has been done recently with the academic assistant professors) in both the academic and clinical faculty by recruiting across disciplinary boundaries as well as graduates of other institutions
- Maintain the stellar quality of outreach to the community.

APPENDIX E. SLHS STRATEGIC PRIORITIES ELABORATED IN 2012

Strategic Priority 1: Promote and Retain Strong Faculty and Programs

- Retain current faculty with adequate resources to promote/maintain success
 - Continue to enhance research laboratories to maximize productivity and student engagement
 - Keep teaching load at levels that allow adequate time for active research
 - Better align and maintain salaries with local and national comparison programs
- Some growth in faculty over next 5 years
 - Add 2 or 3 faculty to extend the breadth of research and to share teaching responsibilities. This might include a combination of one or two tenure-track faculty members and a lecturer. We would target individuals with research in areas that complement or extend our current areas of emphasis, such as autism, bilingualism, hearing/hearing disorders, speech/speech disorders. A lecturer would likely be targeted who could cover some of the heavy teaching needs in speech science.
- Strengthen the national profile of the Audiology program
 - Continue efforts to promote the AuD program and increase national awareness of specific strengths at the UA (e.g., the model program in audiologic rehabilitation)
 - In the faculty expansion effort noted above, seek a strong mid-career or senior faculty member in audiology.
- Modest growth in clinical faculty to complement current cohort
 - Develop bilingual speech-language clinical experience in-house
 - Maintain and strengthen ties between clinical research and clinical training

Strategic Priority 2: Undergraduate Student Recruitment for Science Careers

- Increase exposure of SLHS major to students likely to have aspirations for research careers
 - Targeted recruitment in the Honor's college students and those declaring interest in science
- Maintain and enhance student involvement in research
 - Increase centralized support for student research from the Department and university in order to maximize student involvement in a meaningful way, yet protecting faculty time

Strategic Priority 3: Attracting and Supporting Graduate Students in Clinical Graduate Programs

- Increase the number of graduate stipends so that we yield more of the outstanding students that we admit.
 - o Increase allocation of resources to support graduate students
 - Update clinical facilities in order to maximize student training experience

Strategic Priority 4: Attracting and Supporting PhD Students and Post-Doctoral Fellows

- Increase the number of high-quality applicants for the PhD program
- Increase the number of doctoral students completing the program
- Develop seed funding for post-doctoral candidates
 - Facilitate external funding for post-doctoral fellows
Strategic Priority 5: Enhancing Diversity in SLHS Department

- Maintain and enhance diversity within student body
 - Implement bilingual/bicultural program, including undergraduate/graduate introductory course
 - Remain active in local and national programs that engage under-represented students at undergraduate and graduate levels
- Increase faculty diversity
 - Implement broad recruitment plan for next faculty hire(s) with open criteria for content and rank

Strategic Priority 6: Maintaining Strong Outreach Activities

- Maintain strong community relations
 - o Maintain strong continuing education programs for professionals
 - o Continue clinical and education outreach to lay community
 - Develop stronger advisory board for the Department
 - Update and maintain an effective website
- Increase connections with alumni
 - \circ $\;$ Increase social media connecting to the Department
 - o Continue alumnus activities (social, professional, educational)

APPENDIX F. STUDENT HONORS AND AWARDS (2012-2020)

Honors/Awards	Year: Student
International	
Sertoma International Scholarship	2019: Hannah Rosenberg Jones
National	
2013 Editor's Award, Journal of Speech, Language, and	2014: Jessica Aguilar
Hearing Research	
Acoustical Society of America, First Place Award for Best	2014: Rosemary Lester
Student Paper in Speech Communication	
Acoustical Society of America Student Travel Award	2016, 2015, 2012: Megan Kittleson (Willi)
American Academy of Audiology Foundation, Fellows-in-	2019: Bryan Wong
Training Travel Grant	
American Academy of Audiology Foundation	2017-2018: Alyssa Everett
Judith Blumsack and Roger Ruth Memorial	
Scholarship, (\$1,000)	
American Academy of Audiology Foundation, Sadanand Singh	2019: Bryan Wong
Memorial Scholarship	
American Auditory Society Mentored Student Poster Travel	2017: Alireza Pourjavid
Award	2014, 2013: Spencer Smith
American Auditory Society Mentored Student Research Award	2019: Barrett St. George
(\$1000)	2019: Alyssa Everett (Davidson)
American Speech-Language-Hearing	2019: Alyssa Everett, Bryan Wong
Association Audiology/Hearing Science	2018: Alireza Pourjavid
Research Travel Award (ARTA)	2017: Barrett St. George
	2013: Spencer Smith
American Speech-Language-Hearing Association Convention	2018: Mira Fein
Outstanding Student Poster	
American Speech-Language-Hearing Association Distinguished	2018: Laura Coco
Early Career Professional Award	
American Speech-Language-Hearing Association Foundation	2018: Trianna Oglivie
New Century Scholars Award (\$10,000)	2017: Laura Coco
American Speech-Language-Hearing Association Minority	2019: Jacqueline Penunuri
Student Leadership Program	2012: Trianna Oglivie
	Jinna Borgstrom
American Speech-Language-Hearing Association Research	2018: Alyssa Sachs
Mentoring-Pair Travel Award	2016: Jessie Erikson
American Speech-Language-Hearing Foundation Graduate	2019: Bryan Wong
Minority Student Scholarship	
American Speech-Language-Hearing Foundation Graduate	2012: Trianna Oglivie
Student Scholarship	2012: Marja-Liisa Mailend
American Speech-Language-Hearing Foundation Student	2018: Trianna Oglivie
Research Grant in Early Childhood Language Development	
American Speech-Language-Hearing Foundation	2018: Hannah Rosenberg Jones
Student Scholarship	
American Speech-Language-Hearing Meritorious Poster	2019: Kristen Ackley, Kylee Haller
Award	
Association for Research in Otolaryngology, Post-Doctoral	2017: Laura Coco
Travel Award (\$750)	
Audiology NOW! Academy for Research Conference (ARC)	2016: Barrett St. George
Poster Scholarship Recipient (\$750)	

Audiology NOW! Student Research Forum Award Recipient (\$500)	2019: Barrett St. George
Council of Academic Programs in Communication Sciences and Disorders PhD Scholarship	2017: Genesis Arizmendi
David W. Brewer First Place Award for Best Poster, Voice Foundation Symposium	2015: Rosemary Lester
International Hearing Loss Conference Travel Award (\$600)	2019: Alyssa Everett
Internet and Audiology First Place Poster Award	2019: Laura Coco
Internet and Audiology Conference Student Investigator Travel Award	2017: Laura Coco
Internet and Audiology International Meeting Travel Award (\$1500)	2019: Laura Coco
James and Susan Jerger Award for Excellence in Student	2017: Bryan Wong
Research, American Academy of Audiology Foundation – Audiology NOW! Convention	
Lessons for Success Mentee, American Speech, Language, and	2019: Laura Coco
Hearing Association	2016: Genesis Arizmendi
	2014: Spencer Smith, Christina Meyers
NIH Research Travel Award, International Conference on Auditory Cortex (\$750)	2017: Barrett St. George
NIH Travel Award for the American Auditory Society Meeting	2013: James Shehorn
NIH T-32 Ruth L. Kirschstein National Research Service Award	2012-2013: James Shehorn
	2012: Genesis Arizmendi
Plural Publishing Research Scholarship-Council of Academic Programs in Communication Sciences and Disorders (CAPCSD), (\$3000)	2019: Alyssa Everett
STAR NIH Travel Award, Symposium on Research in Child Language Disorders	2015, 2012: Genesis Arizmendi
Student Travel Award, Symposium on Research in Child Language Disorders (\$700)	2016: Jessie Erikson
Symposium on Research in Child Language Disorders Travel Award	2012-13, 2016, 2017: Trianna Oglivie
Veteran's Affairs Summer Traineeship Award	2016: Alyssa Everett
State Awards	
46 th Annual Arizona Rural Health Conference Scholarship (\$320)	2019: Laura Coco
NSSLHA James Case Award for Clinical Excellence	2020: Kaitlin Froese (AuD), Saskia van Hecke (SLP), 2019: Aaron Whitely (AuD), Eliza Hard (SLP) 2018: Whitney Mast (AuD), Elizabeth Dupuis (SLP) 2017: Dawn Reikowsky (SLP) 2016: Danielle Beebe (AuD), Jenna Lochner (SLP) 2015: Giau Le (AuD), Samantha Dietering (SLP) 2014: Ella Hauwiller (SLP), Aliza Robin (SLP) 2013: Lindsey Harrington (SLP) 2012: Chelsey Bayley (SLP)
University Awards	
Arizona Telemedicine Program Equipment Grant	2019: Laura Coco (\$2,545)
Centennial Achievement Award	2019: Genesis Hernandez
Galileo Circle Scholars (\$1,000 each)	2019: Ackley, Coco, Eriksson, Everett, Mettler, Pourjavid, Sachs, St. George, Tucci, Wong

	2018: Arizmendi, Coco, Erikson,
	Everett, Pourjavid, Privette, St. George, Tucci,
	Sachs, Mettler
	2017: Arizmendi, Coco, Erikson, Everett, Mettler, O
	glive, Pourjavid, Privette, Sachs, Shehorn, St.
	George, Tucci
	2016: Arizmendi,
	Dailey, DeMarco, Erikson, Kittelson, Mailend, Oglivi
	e, Privette, Shehorn, Smith
	2015: Aguilar, Arizmendi, DeMarco, Kittelson, Maila
	nd, Neely, Hellman, Rummary, Shehorn,
	Smith, Tinnemore
	2014: Lester, DeMarco, Meyers, Mailend, Smith,
	Olson, Chong, Neely, Shehorn
	2013: Carbonell, Lester, DeMarco, Mevers, Oglivie,
	Mailend
	2012: Carbonell, Crouse-
	Matlock, Lester, Reed, Veglia
Graduate Interdisciplinary Program Herbert E. Carter Travel	2018: Alvssa Sachs
Award	,
Louise Foucar Marshall Foundation Graduate Fellowship	2018: Genesis Arizmendi
Peter W. Likins Graduate Fellowship	2012: Andrew Couch, nominated - received
	Honorable Mention
Richard A. Harvill Graduate Fellowship	2012-2013: Giau Le
University of Arizona Graduate College Fellowship	2019: Genesis Arizmendi
University of Arizona Graduate and Professional Student	2019-2020: Barrett Victor St. George (\$900)
Council Research and Project Grant	2019-2020: Alyssa Everett (\$1000)
	2019: Kristen Ackley
	2016: James Shehorn
University of Arizona Graduate and Professional Student	2019: Kristen Ackley
Council Travel Grant	2018: Alyssa Sachs, Alexander Tucci
	2017: Jessie Erikson
	2016: Jessie Erikson, Alyssa Sachs
	2015, 2012: Megan Kittleson (Willi)
University of Arizona Graduate Interdisciplinary Programs,	2018, 2016: Trianna Oglivie
Best Cognitive Science Poster	
University of Arizona Graduate Interdisciplinary Program	2016: Trianna Oglivie
Carter Travel Award	
College of Science Awards	
Outstanding Graduate Student Nominees	2019: Scholarship/Research: Genesis Arizmendi
(Representing SLHS)	Service: Hannah Jones (won College Award)
	Teaching: Aaron Whitely
	2018: Scholarship: Laura Coco
	Service: Chelsea M. Privette
	Teaching: Trianna Oglivie
	2017: Scholarship: Genesis Arizmendi
	Service: Nicole Denny
	Teaching: Diane Cheek (won College Award)
	2016: Scholarship: Marja Liisa Mailend
	Service: Libby Coon
	Teaching: James Shehorn

2015: Scholarship: Maria Liisa Mailend
Service: Giau Le
Teaching: Andrew DeMarco
2014: Scholarshin: Becomany Loster
Z014: Scholarship: Rosemary Lester
2013: Scholarship: Rosemary Lester
Service: Lynnmarie Iverson
2012: Scholarship: Robin Samlan
Teaching: Rosemary Lester
Service: Mary Rose Durkin (won College Award)
SLHS Department (*unless otherwise noted)
Anthony B. DeFeo Endowed Scholarship for Clinical Studies in 2019-2020: Emily Thul, Saskia Van Hecke, Lauren
Speech-Language Pathology Mann
2013-2014: Samantha Deitering
2012-2013: Marissa Kryger, Matthew Ricca
2011-2012: Christine Dawson
Bill Bernett Memorial Fund Endowment 2019: Alyssa Sachs
Cassandra Davis Memorial Endowment Scholarship 2019-2020: Hernandez, Rosenberg-Jones.
for Undergraduate (UG) and Graduate (G) students Mitchell (G)
2018-2019: Boyd. Erv. Wollersheim
2017-2018: Dupuis (G), Woodson (G)
2016-2017: McPhilliamy (Grad) L Navarro (Grad)
2015-2016: Monti (Grad) Zeiger (Grad)
2013 2010: Monta (Grad), Zeiger (Grad)
(Grad) Ditallo (UG)
(Glad), Dicarlo (GG)
2013-2014: Ricks (G), Johns (OG), Cooper (OG)
2012-2013. Kaspizyk (G), Jensen (G), Maleiski (GG
Cindy Caughman Corona/Midtown Sertoma Memorial 2018-2019: Ann Miller
Scholarship 2017-2018: Brenden Bagnoli
2015-2016: Lua Hedayati
2014-2015: Jaciyn Heilmann
2013-2014: Curtis Huddleston Vanture
Excellence in Undergraduate Research 2019: Carson Pyatt
(Spring Commencement) 2017: Holly Durr
2016: Sarah MacKenzie
2015: Alexa Bautista
2014: Temre Brandt
2013: Julie Leclerc
Grunewald Foundation Fellowship 2020: Kristen Ackley, Kylee Haller
(for the academic year) 2019-2020: Katlyn Nickels
2018: Genesis Arizmendi
2017-2018: Chelsea M. Privette
2017: Heidi Mettler
2016-2017: Alireza Pourjavid
2015-2016: Trianna Oglivie
2014,2015: Megan Kittleson (Willi)
2013-2015: Christina Meyers
Jean R. Guloien Outstanding Graduate Student Award 2019: Maddie Wollersheim MS; Karla
Navarro, AuD
2018: Mira Fein. MS: Diane Cheek. AuD

	2016: Mara Goodman, MS: Giau Le, AuD
	2015: Danielle Encinas, MS: Stephanie Yagata.
	MS: Johnna Tanii, AuD
	2014: Kimberly Neely, MS: Breanna Reed, AuD
	2013: Katrina Jensen MS: Feng-Yi Chuang AuD
Pichard F. Curloo Momorial Scholarshin	2010 2020: Morgan Korn
	2019-2020. Morgan Kenn 2019-2010: Calias Dull
	2016-2019. Callas Dull 2017-2019: Noch Pohr
	2017-2016. Nudil Kulli 2016. 2017: Bari McDhilliamu
	2010-2017: Roll Micrimianly
	2013-2014: Tamra Kasprzyk
	2012-2013: M. Luna Iris
Susan and Tom Cordell Scholarship	2019-2020: Beatty, Vo, Pourjavid
	2018-2019: Beatty, Fry, Whiteley
	2017-2018: Bagnoli, Coco, Dupuis
	2016-2017: Navarro, Penkoff, Robbins
	2015-2016: Ngoc Le, Lochner, Hellmann
	2014-2015: Hellmann, Ngoc Le, Tanji
	2013-2014: Kasprzyk, Vanture, Sanchez
	2012-2013: Durkin, Iris, Quintero
Thomas J. Hixon Student Research Award	2018: Angelica McCarron, Valerie Brown, Hallie Niti
	do, Meira Abidov, Elizabeth Pullen
Timothy A Maddox Memorial Scholarship	2018-19: Eliza Hard (inaugural)
Undergraduate Outstanding Senior	2019: Lauren Mann
(Spring Commencement)	2018: Valerie Brown
	2017 [.] Meira Abidov
	2016: Angelica McCarron
	2015: Marisa Marsteller
	2014: Sarah Olson
	2014: Samantha Dietering
Lindergraduate Senier	2017: Conosis Hornandoz, Evcollonco in Posoarch
(Winter Commonscement) not even wear	2017. Genesis Hernandez, Excellence in Research
(Winter Commencement) – not every year	
"Outstanding Research in Cognitive Science Award (from the	
Cognitive Science Program)	2015: Genesis Arizmendi, Megan Kittleson
Community	
Arizona Community Foundations Deaf & Hard of Hearing Grant	2019: Laura Coco - \$18,800
Hearing Loss Association of America - Sun Lakes Hearing Loss	2019: Sarah Beatty
Association Outstanding AuD Student	2018: Sarah Broughton (inaugural)
Midtown Sertoma Club of Tucson Audiology Endowment	2019-2020: Barrett St. George
Award	2018-2019: Laura Coco
	2013-2014: Jinna Borgstrom
	2012-2013: Lua Hedavai
Minnie Billings Scholarshin, Wesley Foundation	2016 2017: Chelsea M. Privette
PEO Scholarshin	2010,2017: Chelsed Will Hitelde
Woodling-Sertoma Scholarchin (\$1000)	2010 2013. Thanka Ogivie
יייטטטוווצ-שבו נטוומ שנוטומושווף (אַדטטט)	2015 2016: Alyssa Everett
	2014 2016: James Sheharn
	2012, Sugar Smith
	ZUIS: Spencer Smith

Compiled as of March 2020. Data sources: Department website, departmental historical documents, self-report on student resumes.

APPENDIX G. SLHS BUILDING IMPROVEMENTS (2012-2020)

2012-13

- All PUBLIC areas (halls, stairwells, bathrooms) painted summer (late May, early June start).
- Roof repair, wall cracks repaired in 5th floor stairwell (April). Acoustic tile ceiling squares painted. All by Facilities Management (cost covered by UA).
- Room 228 renovated for Business Manager & Accountant with new paint and furniture.
- Front office room 224 renovated with new paint and furniture.
- Fax room (Room 220A) converted to office for Cathy Fay. Secure storage moved to room 210. Fax moved to 214.
- Room 232 (Fay office) to be converted to research lab space (Lotto).
- Conference room created (Room 222) painted, new conference table and chairs
- Classroom 205 new carpet. Paint and new desk surfaces over spring break.
- Teaching lab Room 203 desk shelving added, tables purchased, 30 chairs- to better accommodate teaching labs and conference meetings. Wiring and mounting of new projector.
- Room 228 conference room new flat screen monitor March (gift to department). Smaller screen to room 222.
- Room 308B converted to lab space (previously Beeson office) Beeson moved to 338 office.
- Room 309 2 NEW LABS and 2 offices -Renovation request approved March); work began in April.
- Room 408 new conference chairs purchased (Jan). Cabinets donated.
- Room 409 new whiteboards in classroom (April)
- Room 420 4th floor AV room (May). Painted. Move office for Living Well with Hearing Loss there (June).
- 4th floor halls repair and paint walls (May).
- 4th floor All clinical instructor offices renovated including rooms 414, 416, 422, 405C, 405D, 405E, 405F, 405G, and Muller office (Room 436) new paint and furniture.
- 2 new lab spaces added Rooms 511, 521 (5 seats; 9 seats) this space later converted to IT offices.
- Room 503 conference room new chairs. Mounted LCD screen. White boards updated.

2013-14

- Room 107 set up as teaching lab space. LCD monitor, table, chairs
- Hearing clinic rooms 105 updated desk, paint, carpet
- Room 130 Pediatric hearing booth-Updated workspace outside of booth. Furniture and carpet.
- Room 109 Marrone lab carpet
- Room 203 added teaching podium with computer.
- Room 513 (Story office) carpet, paint, furniture.
- Room 529 (Hoit office) carpet, paint, furniture.
- Room 517 (Dean office) carpet, paint, furniture.
- Room 533 (Fabiano-Smith office) carpet, paint, furniture.
- Room 514 (Bunton lab office) carpet, paint, furniture.

2014-15

- Room 229 Conference room renovation closed off doors, added soundproofing to walls. Removed panel and bookshelves on one wall. Added white board, mounted projector (moved flat screen to 503 b/c too small for room), adding sound and laptop computer. New chairs.
- Room 230 Office converted to MBB business office
- Room 526 Musiek office furniture, carpet, paint
- Update audiology clinic rooms paint, carpet, workspace, tables, chairs

- 5th floor offices added by reducing large hallway area (Rooms 503, 505, 515, 520)
- 5th floor closets added (Rooms 508, 531)

2015-16

- New audiology suites (2) installed in Room 105.
- Rooms 105, 105A, 105B, 105C New paint and carpet
- Elevator modernization implemented

2016-17

- Clinic reception window installed in clinic reception area, first floor.
- Business office for clinic moved to first floor renovation of clinic office space, paint, carpet, desks
- Child Language Center at 202 E. Speedway major renovation to add individual clinic rooms and observation windows. To be used by Plante camp in summer and treatment during the year.
- Room 501 converted to IT storage room.
- Major update of video-surveilance system for clinic. New cameras installed throughout the clinical and clinical research areas with proper security.

2017-18

- Acquired Room 411 (426 sq feet) from UITS begin planning for update added keypad. Will be used as second clinician workroom.
- Acquired Room 303 (274 sq feet) to be used as an IT control room
- New furniture for students planned for classroom 409
- New recycling bins throughout building
- Room 434 DeRuiter office renovated (start-up)
- Room 336 Brown office and Room 310 lab and eye-tracking lab
- Convert room 420 to AAC evaluation and workroom added keypad
- Fixed carpet problems in Hoit, Story, Motoyoshi offices
- Goodmans repaired Setu chairs in 305 and 309 (sagging on the top)

2018-19

- Office updates
 - Kapa office, Room 328 refresh completed (start-up)
 - Leah Kapa's lab (Room 334, formerly Plante lab) furnished (start-up)
 - New standing desk in clinical faculty office (Motoyoshi), Room 414
- Room 520 converted to Family Room (lactation room) with signage and refrigerator.
- New graduate student lockers on 4th floor hallway for personal belongings.
- New student mailboxes in Clinician workrooms Rooms 409 and 411.
- Renovation of Clinical Workroom room 411 paint, carpet
- Classroom renovation proposal to Provost for classroom 409 funded and completed Jan. 2019
- Audiology clinic room 102 (Cochlear Implant) renovated new paint, carpet, furniture, storage
- AC Fixed 3rd floor Summer 2018
- Elevator updated signage for safety instructions. Easier to see. Incorporates pictures.
- The loud noise caused by the heating system on the 3rd floor repaired by FM!
- Signs added for looping system in classrooms. Additional loop receivers will be ordered
- Coke machine and snack machines now both operational
- **Planned for Summer 2019** Public area renovations (flooring, bathrooms) timeline begin some in June, most in July. Targeted completion date December 2019.

2019-20

- Major renovation of Classroom 409 completed Jan. 2019: new technology, collaborative furniture, flooring, paint.
- Flooring renovation project: New vinyl tile installed in all public areas on all floors

- All bathrooms (all floors) wall tiles repaired and painted
- New carpet installed in the front office on the 2nd floor (room 214) and all clinic rooms on 1st floor
- Updates to the AV equipment in classroom 205
- Room 303: New carpet in the 3rd floor server room
- Room 312 (Research Professional office Vance): New carpet
- Room 320 (Plante research room): New carpet
- Room 316 (Faculty office Plante): New carpet
- Room 318 (Faculty office Alt): New tile flooring
- Room 518 (Faculty office Cone): New tile flooring and paint
- Elevator: New tile flooring and paint
- Room 506 (Fabiano-Smith lab): New counters, chairs, and table from Goodman's
- Front office staff moved offices: room 220A now an overflow office
- Several new toilets installed in women's restrooms on 1st, 3rd, 4th, and 5th floors
- Water pressure adjusted to repair drinking fountains on all floors of the building

2020-21

- Room 224 (Advisor office Palacio): New carpet
- Room 228 (Graduate Coordinator office Bridgewater): New carpet
- Room 232 (Development office): New carpet
- Room 222 (Front office conference room): New carpet
- 4th floor therapy rooms (408, 408A, 442): New carpet
- 4th floor observation rooms (412, 430, 440): New carpet

	Technology Use in Undergraduate Courses						
SLHS Course Number	D2L	Response Devices	YouTube	Zoom	Panopto	Tweet chats/ interactive media	Online proctored exams
207	Х	Х					
255	Х		Х				
261	Х						
263	Х		Х				
270	Х	Х	Х		Х		
340	Х			Х			
362	Х				Х		
367	Х				Х		
380	Х		Х				
441/541	Х	Socrative					
454/554	Х			Х			Х
471/571	Х						Х
477	Х						
483	Х						
496	Х						
497	Х						
499/599**							
Total % of Surveyed	94%	18%	24%	12%	18%	0	12%

APPENDIX H. INSTRUCTIONAL TECHNOLOGIES USED IN TEACHING (PRIOR TO COVID-19)

Table Notes: Data source = Survey conducted at faculty meeting on 12/11/2019.

*Use of podcasting was also surveyed, but no undergraduate instructors surveyed selected this as an instructional technology that they utilized for their course.

**Reported use of on-line document sharing

	Technology Use in Graduate Courses						
SLHS Course Number	D2L	Response Devices	YouTube	Zoom	Panopto	Tweet chats/ interactive media	Online proctored exams
501	Х						
510	Х			Х	Х		
511	Х		Х				
541/441	Х	Socrative					
543	Х						
544	Х				Х		
554/454	Х			Х			Х
555⁺	Х						
557	Х			Х	Х		
559/659	Х				Х		
560	Х						

562A	Х	Х	Х				
562B	Х		Х				
565++	Х						
566++	Х						
568	Х				Х		
571/471	Х						Х
572	Х						
574	Х						
575	Х						
580	Х	Х	Х				
581A	Х		Х				
581B	Х						Х
581C	Х				Х		
582A	Х	Х	Х				
584	Х				Х		
587	Х			Х	Х		
588A*	Х						
588B*	Х						
588C	Х	Х	Х		Х		
589	Х						
591	Х		Х				
596	Х						
596B	Х		Х				
596G	Х		Х				
597**	Х			Х	Х	Х	
599/499***							
649	Х			Х			
795	Х						
795A	Х				Х		
921	Х			Х			
Total % of	40/41	12%	24%	17%	27%	2%	7%
Surveyed	= 98%						

Table Notes: Data source = Survey conducted at faculty meeting on 12/11/2019. It should be noted that the 511 and 597 courses have multiple sections taught by different instructors – this chart reflects their combined use of technology.

⁺Reported use of online software Acadly.

⁺⁺Reported use of software including Matlab for demonstrations, animations developed in Matlab, and PRAAT speech analysis software.

*Students are trained on computer-based instrumentation and software

**Reported use of on-line document sharing for journaling on course assignments.

***Reported other use of Podcasts as well.

APPENDIX I. TASKSTREAM OUTCOME REPORTS (2017-2019)

To review files go to SLHS APR folder to open APPENDIX I Outcomes Reviews.pdf (not hyperlinked)

Appendix I includes:

Undergraduate Outcomes

• Taskstream B.S. Speech, Language, and Hearing Sciences, 2017-2018, 2018-19 Master of Science (MS-SLP) Outcomes

• Taskstream, M.S. Speech, Language, and Hearing Sciences 2017-2018, 2018-19 Doctor of Audiology (AuD) Outcomes

• Taskstream, Doctor of Audiology (AuD), 2017-2018, 2018-19

Doctor of Philosphy (PhD) Outcomes

• Taskstream, PhD., Speech, Language, and Hearing Sciences, 2017-2018, 2018-19 Outcomes review by Provost

APPENDIX J. MASTER OF SCIENCE PROGRAM OF STUDY 2019-2020

(from MS-SLP Student Handbook)

Course#	Fall - 1st year	Units	Course#	Spring - 1st year	Units
555	Developmental Language	3	552	Language Disorders School- Age	3
	Disorders			Children	
544	Adult Language Disorders I	3	543	Adult Language Disorders II	3
566	Preclinical Speech Science	4	557	Dysphagia	3
511	Tool School	1	512	Evaluation Process in	3
	(Clinical Preparation)			Speech-Language Pathology	
597	Workshop: Research Intro	1	597	Workshop: Research Methods	1
595A	Colloquium*	1	558	Clinical Practicum	2
558	Clinical Practicum	2			
571	Speech Sound Disorders	(3)			
	(if needed)				
Course#	Summer Session - 1st year	Units			
558/658	Clinical Practicum	3			
Course#	Fall - 2nd year	Units	Course#	Spring - 2nd year	Units
572	Speech Disorders I	3	574	Speech Disorders II	3
575	Neuromotor Speech Disorders	3	554	Auditory Rehabilitation (if needed)	(3)
501	Professional Issues	2	558/658	Clinical Practicum	3
558/658	Clinical Practicum	3		Elective	(1-3)
	Elective	(1-3)		Elective	(1-3)
Total units	required for MS degree	36			

Overview of Course Requirements for M.S Degree with emphasis in Speech-Language Pathology

Students are also expected to have a background that includes the following coursework required for ASHA certification:

- One course in Physical Science,
- One course in Biological Sciences,
- One course in Behavioral/Social Sciences
- Math course (college algebra or above)
- One statistics course
- Speech Sound Disorders (Articularion & Phonology)

Overview of Practicum Requirements

Students completing the MS degree in clinical sciences must have coursework and practicum experiences meeting the certification requirements of the American Speech, Language, and Hearing

Association (ASHA). The University of Arizona views the practicum courses as laboratory courses. As such, the University requires 45 hours of assigned experience for each unit of academic credit in practicum enrollment.

A minimum of 400 clock hours of supervised clinical practicum must be completed in the practice of speech-language pathology. This includes:

- 25 hours of clinical observation followed by 375 hours of direct contact
- Up to 75 hours of direct contact can be transferred from an undergraduate program
- At least 325 hours must be completed during graduate training in at least three distinct settings.
- ASHA allows for up to 75 hours to be obtained through alternative clinical education. These opportunities will be defined by the clinical faculty.
- A minimum of 10 hours of clinical practicum in audiology

Overview of the First Year for Three-Year Students

Students admitted to the Master's Degree Program with background in other fields will need to complete preliminary coursework during their first year. This first year (referred to as the leveling year) will include both undergraduate and graduate level coursework. Students must register for at least 9 units of graduate-level credit each semester. When a course is offered both on the 400- and 500-level, students should register for the 500-level course. The student's academic advisor will review academic records and recommend coursework for the leveling year.

Academic Requirements for Three-Year Program in SLP

<u>Fall</u>	SLHS 261	Anatomy & Physiology of the Speech Mechanism (4)
	SLHS 340	Language Science (3)
	SLHS 477	Communication Disorders I (3)
	SLHS 571	Speech Sound Disorders (3)
	SLHS 583R/L	Principles of Audiology (4)
	SLHS 599	Phonetics independent study (2)
		Elective (1-6)
		Other deficiency (1-4)
<u>Spring</u>	SLHS 473	Communication Disorders II (3)
	SLHS 541	Language Acquisition (3)
	SLHS 595a	Colloquium (1)
	SLHS 596a	Clinical Observations and Analysis (1)
	SLHS 558	Clinician Assistant Program (CAP) (2)
	Elective	SLHS 535 Bilingualism, Multiculturalism, & Nonmainstream
		Dialects (3) or other Graduate Elective (3 units)

All deficiencies identified during admission, should also be taken during the leveling year. Please meet with your advisor early in your first semester to determine what courses need to be completed.

Master of Science in Speech, Language, and Hearing Science without clinical training

Students, who elect to major in **basic** speech, language, or hearing science (without clinical training) must plan their courses of study with an advisor and have the plan reviewed, and approved by the Department's Masters Committee. Coursework will include basic sciences, clinical sciences, and the completion of a master's thesis.

APPENDIX K. DOCTOR OF AUDIOLOGY (AuD) PROGRAM OF STUDY 2019-2020 (from handbook)

Course#	Fall - 1st year	Units
511	(002)Tool School (Rocketship)	1
562A	Anatomy & Physiology of Aud & Vest System	3
562B	Acoustics and Auditory Perception	3
565	Acoustics and Perception of Speech	3
589R	Advanced Audiologic Evaluation	3
589L	Lab: Advanced Audiologic Evaluation	1
595A	Current Problems in SLHS: Colloquium	1
597	Workshop: Research Methods I	1

Suggested Sequence for Courses in Audiology (beginning Fall 2019)

Course#	Spring - 1st year	Units		
559	Clinical Studies	2		
581A	Amplification I			
581C	Practical Issues in	1		
	Amplification			
582A	Disorders of Hearing &	3		
	Balance			
596M	Tinnitus	1		
597	Workshop: Research	1		
	Methods II			
795A	(001)Clinical Issues	1		
	inAudiology			
	[Course in Minor]	(0-6)		

Course#	Summer Session - 1st year	Units
559	Clinical Studies	(2-3)
912	Audiology Doctoral Project	(0-3)
	[Course in Minor]	(0-3)

Course#	Fall - 2nd year	Units
501	Professional Issues	2
510	Counseling Techniques in Comm. Disorders	1
559/659	Clinical Studies	3
581B	Amplification II: Advanced Topics in Audiologic Rehab	3
588A	Physiological Eval of the Auditory System	3
588L	Lab: Physiological Eval of the Aud System	1
596B	Pharmacology for AuD (online) [offered in odd years]	1
596J	Seminar: Business Aspects of Audiology [offered in even years]	2
912	Audiology Doctoral Proj. Seminar	1
	[Course in Minor]	(0-3)

Course#	Spring - 2nd year	Units
559/65 9	Clinical Studies	3
586	Pediatric Audiology	3
588C	Eval of Auditory Perception & Cognition [offered in even years]	3
588B	Assess & Rehab Balance Sys	3
588Q	Lab: Assessment & Rehab of Balance Sys	1
587G	Practical Issues in Implantable Devices	2
795A	(002)Clinical Issues in Audiology	1
912	Audiology Doctoral Project	(0-3)
	[Course in Minor]	(0-3)
	[Course in Minor]	(0-3)

Course#	Summer Session - 2nd year	Units
559/659	Clinical Studies	(2-3)
912	Audiology Doctoral Project	(0-3)
	[Course in Minor]	(1-3)

Course#	Fall - 3rd year	Units
559/659	Clinical Studies	3
596G	Implantable Devices	2
596B	Pharmacology for AuD (online)	1
	[offered in odd years]	
596J	Seminar: Business Aspects of	2
	Audiology [offered in even years]	
912	Audiology Doctoral Project	(0-3)
	[Course in Minor]	(1-3)

Course#	Summer Session - 3rd year	Units
912	Audiology Doctoral Project	(0-3)
	[Course in Minor]	(1-3)

Course#	Spring - 3rd year	Units
559/659	Clinical Studies	З
580	CAPD	3
584	Occupational & Community Audiology	1
588C	Eval of Auditory Perception & Cognition [offered in even years]	N/A
912	Audiology Doctoral Project	(0-3)
	[Course in Minor]	(1-3)

Course#	Fall - 4th year	Units
912	Audiology Doctoral Project	(0-3)
921	Externship: Audiology	6

Course#	Spring - 4th year	Units
912	Audiology Doctoral Project	(0-3)
921	Externship: Audiology	6

APPENDIX L: OVERVIEW OF REQUIREMENTS FOR PHD IN SPEECH, LANGUAGE, AND HEARING SCIENCES

(Abstracted from "Quick Guide to Doctoral Program Requirements" in SLHS PhD Student Handbook)

Note: Each requirement is followed by either SLHS, GC, or UA. These refer to whether the requirement is departmental (**SLHS**), Graduate College (**GC**), or University policy (**UA**). In general, any **GC**-based requirement involves student and/or faculty action in *GradPath*.

Requirements

- Every student is required to have a **doctoral mentor/advisor** who is a member of the SLHS faculty. **(SLHS)**
- Every student must receive HIPAA training to participate in any clinical endeavor. (UA)
- Every student is required to complete the Human Subjects Protection Training Program approved by the University of Arizona. (UA)
- Students must obtain or be covered by **IRB approval** for research projects involving human subjects. Students should consult their mentors, research supervisors, and the chair of the departmental Human Subjects Review committee for clarification on when and how IRB should be obtained. **(UA)**
- Individuals who did not complete a master's thesis prior to enrolling in the doctoral program are required to **complete a thesis-equivalent research project and present this research in a public forum** (e.g. colloquium, seminar, conference, etc.). The topic and extent of this project, as well as the presentation venue, will be determined by mentor and student. This project must be completed prior to taking the comprehensive exam. **(SLHS)**
- Students are required to be involved in **laboratory-based research during each semester** of their doctoral program. This may be in the form of a laboratory rotation, project assignment by a mentor, independent study, or dissertation research. **(SLHS)**
- Students are required to complete a minimum of 36 graduate semester credits according to the plan of study approved by the student's mentor and Formative/Program Development committee. These credits are in addition to credits obtained via dissertation research and audits. (GC)
- Required courses (SLHS)
 - SLHS 649 Survival Skills and Ethics (3 credits)
 - SLHS 696A Doctoral Seminars in Speech, Language, and Hearing (4 credits)
 - SLHS 696A Grant Writing (2 credits)
 - SLHS 900 Laboratory research rotations (two registrations for 3 units each); one rotation must be in a lab other than that of the student's primary mentor.
- Students are required to complete or present ("take or show") coursework to the Formative/Program Development Committee that is equivalent to SLHS 500. (SLHS)
- The Graduate College requires that a student complete a formal **minor** course of study. The minor must consist of at least **9 credits** of graduate-level coursework. **(GC)**
- Students are required to file an **annual report** at the end of each spring (due April 1) and student progress will be reviewed annually by the faculty. Note that each student should document at least one research presentation per year. This could consist of a presentation at a lab meeting, colloquium, conference, or other venue. **(SLHS)**
- All students must take a **Formative Exam** and conduct a **Program Planning** meeting. These should both be completed in the first semester of the doctoral program but is flexible depending on the specific circumstances of the student's program. The department forms for **"Plan for**

Conducting the Formative Exam" and **"Results of the Formative Exam**" must be filed with the PhD Committee Chair (Story) and Susan Bridgewater. **(SLHS)**

- Must submit the **"Doctoral Plan of Study"** to the Graduate College. This is generally completed early in the second year of the doctoral program through *GradPath*. (GC)
- All students must take a Comprehensive Exam that includes representation from both the major and minor departments, and must include both written and oral portions. The first step is for the student to file the "Comprehensive Exam Committee Appointment Form" in *GradPath*. The "Announcement of Doctoral Comprehensive Examination" is scheduled by the student in *GradPath*. This will initiate an email sent to the committee chair that will contain a *GradPath* link for reporting the "Results of the Oral Comprehensive Examination for Doctoral Candidacy" to the Graduate College.
- Following successful completion of the Comprehensive Exam, and appointment of a dissertation committee, a student must **submit a "Committee Appointment" form** to the Graduate College via *GradPath*. This formalizes the student's Advancement to Candidacy for the PhD. (GC)
- All students are required to prepare a prospectus document and hold a prospectus meeting with their chosen dissertation committee. A copy of the prospectus document should be put into the student's file in the departmental office. In addition, the dissertation director and student should file the "Verification of Prospectus/Proposal" form via *GradPath* (GC).
- All students are required to **present a dissertation proposal** at a departmental colloquium. **(SLHS)**
- Prior to the dissertation defense, student must file the **"Announcement of Final Defense"** form in *GradPath*. This will initiate an email to the committee chair with a link to the **"Results of Final Defense"** form. This link should be saved and used at the completion of the defense. **(GC)**
- At least one week prior to the dissertation defense, the student must **submit an advertisement** of the defense to the departmental secretary. This will be distributed to faculty and students within the department, the School of Mind, Brain, and Behavior, and to other potentially interested parties outside the department. (SLHS)
- The dissertation defense must be held publicly and scheduled such that it does not conflict or coincide with the departmental colloquium. The defense should be scheduled in a classroom in the SLHS department. (SLHS/GC).

APPENDIX M. MENTORED PRE- AND POSTDOCTORAL GRANT PROPOSALS (2012 – PRESENT)

Principal	Funding	Amount	Funding period	Project Title
Mentor	source/ rype			
Privette, Chelsea	NIH/NIDCD NRSA	\$90,032	06/2019-	The Misdiagnosis of Speech
(PI)	Predoctoral		05/2021	Sound Disorders in Spanish-
Fabiano-Smith	Fellowship (F31)			Speaking Preschoolers Acquiring
(Mentor)				African American English
Hall, Jessica (PI)	NIH/NIDCD	\$181,118	09/2018-	Probabilistic Learning in
Plante (Mentor)	Post-doctoral		09/2021	Developmental Language
	fellowship (F32)			Disorder
Coco, Laura (PI)	NIH/NIDCD	\$ 236,390	07/2018-	Community Health Workers and
Marrone (mentor)	Post-doctoral		06/2021	Teleaudiology as a Culturally-
	fellowship (F32)			Relevant Approach to Improving
Mailand Maria		\$96.606	06/2015	Access to Hearing Health Care
Liisa (PI)	Predoctoral	\$80,090	06/2013-	Apravia of Speech and Aphasia
Beeson/Maas	Fellowshin (F31)		00/201/	Apraxia or speech and Apriasia
(Mentor)				
DeMarco, Andrew	NIH/NIDCD NRSA	\$77,656	12/2014-	Neural Correlates of Treatment-
(PI)	Predoctoral		12/2016	Induced Recovery of
Beeson (Mentor)	Fellowship (F31)			Phonological Processing in
				Chronic Aphasia
Kapa (PI)	NIH/NIDCD	\$163,188	11/2014-	The Development of Executive
Plante (Mentor)	Post-doctoral		10/2017	Function Among Preschoolers
Consittle Conserver D	fellowship (F32)	¢100.000	00/2014	With SLI
Smith, Spencer B.	NIH/NIDCD NRSA Productoral	\$109,029	08/2014-	Now Does the Efferent Auditory
(FI) Cone (Mentor)	Fellowshin (F30)		08/2017	Encoding and Percention of
	renowship (150)			Speech-in-Noise
Arizmendi, Genesis	NIH/NIDCD NRSA	\$66,255	08/2014-	Working Memory and Word
(PI)	Diversity		01/2016	Learning in Children with Typical
Alt (mentor)	Supplement			Development and Language
Sanchez, Adrianna	NIH/NIDCD NRSA	\$58,494	09/2013-	Reducing Disparities in Access to
(PI)	Diversity		08/2015	Hearing Healthcare on the U.S. –
Marrone (Mentor)	Supplement			Mexico border
Lester, Rosemary	NIH/NIDCD NRSA	\$83,422	08/2012-	Modulation of the Voice Related
(PI) Stars (Mantas)	Predoctoral		08/2014	to Tremor and Vibrato
Story (ivientor)		604.022	01/2011	
Viteia, Antonia (PI)	NIH/NIDCD NRSA	\$84,032	01/2011-	General auditory model of
Lotto (Mentor)	Fellowship (F31)		12/2012	adaptive perception of speech
Carbonell Kathy		\$01 08 <i>1</i>	12/2011-	Percention of Dysarthric Speech
(PI)	Diversity	<i>⊋∃</i> 1,004	06/2013	reception of Dysartinic speech
Lotto (Mentor)	Supplement		00,2010	
Sum FUNDED	F30 -1	\$1.327.396		
Fellowship Grants	F31 - 5	+ =,= = : ,000		
	F32 - 3			
	Diversity			
	Supplement - 3			

Tucci (PI)	NIH/NIDCD NRSA	\$ 62,410	09/01/2020-	Effects of Developmental
Plante (mentor)	Predoctoral	not funded	08/31/2021	Language Disorder on Writing
	Fellowship (F31)			for College Age Adults
Erikson (PI)	NIH/NIDCD NRSA	\$ 124,828	06/01/2020-	The Role of Vocabulary
Alt (mentor)	Predoctoral	not funded	05/31/2022	Knowledge in Science
	Fellowship (F31)			Achievement for Children with
				Developmental Language
				Disorder

APPENDIX N. SLHS OUTREACH ACTIVITIES

Workshops, Lectures and Other CE opportunities

Each year we offer a range of professional workshops and conferences, as well as community lectures that range from 1-hour to two-day events. Attendance is largely from the local region, but we also attract attendees from throughout the state/region along with some out-of-state attendees. Among our recurring events is the Grunewald-Blitz Conference (funded, in part, by the Abbey J. Grunewald Foundation), which focuses on pediatric communication disorders. We also offer an annual Audiology conference with varying topics of interest. With the advent of the pandemic, we shifted to a virtual format using the Zoom platform, with extended the geographic boundaries of the participants. Community lectures include those at sponsored local events and those that we iniate. Of course, individual faculty members also provide outreach as they share research opportunities and outcomes with various groups that are not tracked centrally.

Sep 20, 2012	Grunewald-Blitz Conference: Pediatric TBI: From Injury Through Recovery
	Claire Wells, MS, RN, PNP, Sydney Rice, MD, MS, Elena Plante, PhD
	Jess Salyers, OTR/L, Irene Topor, PhD, Jody Pirtle, Med, Jennifer Casteix, MS
	91 participants, 0.7 CEUS
Oct 9, 2012	Introduction to Normal Swallow Function: Clinical Evaluation of Swallowing, and Acute
	Dysphagia Management
	Ahnie Dysinger, MS, Rosemary Lesdter, MA
	2 participants, 0.2 CEUs
Oct. 19, 2012	Cognition and Hearing Aid Decisions for Children and Older Adults
	Pamela Souza, PhD, Andrea Pittman, PhD, Nicole Marrone, PhD, Gayle DeDe, PhD
	80 participants 0.7 CEUS
Nov 10, 2012	UA Arizona Homecoming, SLHS CEU Lecture
	New Research Findings in SLHS
	Mary Alt, PhD, Leah Fabiano-Smith, PhD, Nicole Marrone, PhD
	40 participants, 0.2 CEUs
Nov 14, 2012	Assessing Bilingual Children: Challenges with determining proficiency, diagnosing
	impairment and suggestions to overcome those challenges
	Mary Alt, PhD. Genesis Arizmendi, MS, Alycia Boggs, Julia LeClerc, Arlett Perez
	28 participants, 0.2 CEUs
Apr 18, 2013	Traumatic Brain Injury and Visual Rehabilitation
	Carla Engelke, OD
	15 participants, 0.2 CEUs
May 4, 2013	Ventilator-Supported Speaking and Swallowing Workshop
	Cori Daines, MD, Jeannette Hoit, PhD, Jennifer Casteix, MS
	70 participants, 0.4 CEUs
Sept, 2013	Working with Bilingual Populations: Evidence-Based Guidelines
	52 participants, 0.4 CEUs
Sep 20, 2013	Grunewald-Blitz Conference: AAC, Communication Partners, and You: Effective Skills for
	Everyone
	Cathy Binger, PhD
	72 participants, .75 CEUs
Oct 18, 2013	Innovations in Hearing and Balance
	Robert Burkard, PhD, Michael Cevette PhD, Barbara Cone, PhD, Abraham Jacobs, MD

	David Velenovsky, PhD, Tom Muller, AuD									
	66 participants, 0.7 CEUs									
Oct 24, 2013	Exploring Early Intervention: Overview of the Service Models, Evidence-Based Practices,									
	Community Collaboration, and Supports in the Natural Learning Environment									
	Lacey Miller, BA									
	33 participants, 0.2 CEUs									
Nov 11, 2013	New Research Findings in Speech, Language and Hearing Sciences									
	Kate Bunton, PhD, Edwin Maas, PhD									
	22 participants, 0.2 CEUs									
Sep 6, 2014	Diagnosis of Apraxia of Speech in Children and Adults: Current State of the Art									
	Edwin Maas, PhD									
	75 participants, 0.2 CEUs									
Sep 19, 2014	Grunewald-Blitz Conference: Common Core and SLPs in AZ & Voice Therapy in Children									
	Mary Alt, PhD, Elena Plante, PhD, Robin Samlan, PhD									
	29 participants, 0.7 CEUs									
Sep 27, 2014	Intention Therapy in Dysarthria									
	Kay Wiley, PhD, Dan Boone, PhD									
	53 participants, 0.4 CEUs									
Oct 3, 2014	Hearing Assistive Devices									
	Linda Thibodeau, PhD									
	73 participants, 0.7 CEUs									
Feb 21, 2015	School-Age Mealtime Challenges									
	33 participants, 0.2 CEUs									
Mar 11, 2015	Preparing the New Professional: Expectations, Challenges, and Rewards									
	Marilyn Wark, University of Memphis									
	57 participants, 0.2 CEUs									
Sep 11, 2015	Grunewald-Blitz Conference: Practical Intervention Strategies for Children and									
	Adolescents Who Stutter									
	Peter Ramig, PhD									
	111 participants, 0.6 CEUs									
Oct 24, 2015	Homecoming CEU Event: Research Findings in Speech and Language Sciences									
	SLHS Faculty									
	25 participants, 0.1 CEUs									
Nov 20, 2015	CAPD Diagnosis and Intervention: Practical Perspectives for Clinicians									
	Frank Musiek, PhD, Gail Chermak, PhD									
	110 participants, 0.75 CEUs									
Apr 16, 2016	Collaborating with Interpreters in Speech Pathology									
	Rui Motoyoshi, MA									
	Leah Fabiano-Smith, PhD, Jaime Fatas-Cabeza, MMA									
	38 participants, 0.3 CEUS									
Sep 16, 2016	Grunewald-Blitz Conference: Evidence-Based Vocabulary and Reading Comprehension									
	Instruction									
	Shelley Gray, PhD									
	82 participants, 0.6 CEUs									
Sep 29, 2016	Research Findings in Speech, Language, and Hearing Sciences									
	SLHS Faculty									
	20 participants, 0.1 CEUs									
Mar 30, 2017	Enhancing Current Treatments through New Discoveries in Learning									

	Elena Plante, PhD										
	26 participants, 0.1 CEUs										
Apr 8, 2017	Language Loss vs. Language Disorder in Bilingual Children										
	Leah Fabiano-Smith, PhD										
	24 participants, 0.3 CEUs										
Sept 15, 2017	Issues in Supervision: Coaching for our Future										
-	Mark DeRuiter, PhD										
	102 participants, 0.6 CEUs										
Oct 16, 2017	Changing Models of Audiology Service Delivery										
	Brian Taylor, AuD, Nicole Marrone, PhD, Gabrielle Saunders, PhD										
	Mark DeRuiter, PhD, Erica Hansen, AuD										
	79 participants, 0.7 CEUs										
Mar 17, 2018	Childhood Apraxia of Speech Advanced Training Workshop										
	Edythe Strand, PhD										
	56 participants, 0.45 CEUs										
Apr 7, 2018	Insight into Providing Services to Refugees: Tools for the Monolingual SLP										
	Manal Sabri, MS, Rui Motoyoshi, MA										
	43 participants, 0.3 CEUs										
Sep 21, 2018	Grunewald-Blitz Conference: Considerations in Language Assessment in Young Dual										
	Language Learners										
	M. Adelaida Restrepo, PhD										
	82 participants, 0.6 CEUs										
Oct 19, 2018	Insights into Clinical Assessment of the Auditory System										
	Brad Stach, PhD, Frank Musiek, PhD, Tom Muller, AuD										
	74 participants, 0.6 CEUs										
Jan 18-19,	6 th International Pediatric Feeding Disorder Conference										
2019	Experts in the field										
	350 participants, 0.8 CEUs										
Feb 16-17,	Get-Permission Approach to Anxious Eaters/Anxious Mealtimes										
2019	Marsha Dunn Klein, MEd										
	40 participants, 1.2 CEUs										
Apr 27, 2019	Bilingual IEP Meeting Toolkit										
	Leah Fabiano-Smith, PhD										
	40 participants, 0.1 CEUs										
Sep 20, 2019	Grunewald-Blitz Conference: Assessment and Treatment of Motor Speech Disorders in										
	Children										
	Meghan Darling-White, PhD										
	82 participants, 0.7 CEUs										
Jan 24-25,	CEU Sponsor for Feeding Matters 7 th International Pediatric Feeding Disorder										
2020	Conference (Virtual Live)										
	Experts in the field										
	460 participants, 0.8 CEUs										
Jan 25-Feb 24,	CEU Sponsor for Feeding Matters 7 th International Pediatric Feeding Disorder										
2020	Conterence (Video On Demand)										
	680 participants, 1.2 CEUs										

SLHS Public Lectures and Community Talks

Oct 13, 2012	Tinnitus: What's the Buzz? Causes, Research, and Solutions								
	Julie Peterson, MS, University of Arizona								
	David Velenovsky, PhD, University of Arizona								
	Lynn Iversen, BA, University of Arizona								
Oct 19, 2012	Eye Technology and other Speech Generating Devices for persons								
	with Motor Speech Disorders								
	Cass Faux, MS, CCC-SLP, University of Arizona								
Nov. 2, 2013	SLHS Public Lecture: Living Well with Hearing Loss (honoring Dr. Fran Harris)								
Feb. 8 <i>,</i> 2014	SLHS Public Lecture: Living Well with Hearing Loss: Using Assistive Devices								
Feb 4 <i>,</i> 2015	Saddlebrooke Community Lecture: Language in the Brain								
	Stephen Wilson, PhD, University of Arizona								
Mar 8, 2015	St. Phillips in the Foothills Elder Care Fair								
Mar 19, 2015	Current Research in Hearing, Listening and Learning								
	Nicole Marrone, PhD, University of Arizona								
Apr 1, 2015	Vocal Fitness: Keeping Your Voice in Shape								
	Jenny Hoit, PhD & Robin Samlan, Ph.D. University of Arizona								
Apr 15, 2015	Long-Term Effects of Non-Traumatic Noise on the Adult Auditory System								
	Jos Eggermont, PhD, University of Calgary								
Oct 17, 2015	SaddleBrooke Health Fair								
	Dana Eriksson, MS, University of Arizona								
Apr 19, 2016	Tinnitus Patient Management: What you need to Know Now, and What you will Need to								
	Know When You're in Practice								
	Robert W. Sweetow, PhD, University of California, San Francisco								
Nov. 5, 2016	SLHS Public Lecture: The Effects of Hearing Loss on the Family								
	Michael T. Hartley, PhD, CRC, UArizona, College of Education								
Apr 12, 2017	Lectures in Auditory Disorders and Sciences								
	Stephen Lomber, PhD, University of Western Ontario, Canada								
Apr 29, 2017	A Seminar on Music and Health: Hearing & Respiratory and Vocal Health								
	University of Arizona faculty from SLHS and Fred Fox School of Music								
Oct 19, 2017	Amory Park Center Health Fair								
	Dana Eriksson, MS, University of Arizona								
Oct 3, 2018	University of Arizona Alumni Association Lecture								
	Trouble Talking: The Realities of Communication, Language, and Speech Disorders,								
	Daniel Boone, PhD, Professor Emeritus, University of Arizona								
Oct 13, 2018	SaddleBrooke Health Fair, The Sertoma Arizona Hearing Aid Bank and Living Well with								
	Hearing Loss								
	Jessie Penkoff & Dana Eriksson, MS, University of Arizona								
Apr 18 , 2019	Lectures in Auditory Disorders and Sciences								
	Dr. Devin McCaslin								

APPENDIX O. FACULTY COLLABORATIONS WITHIN THE UNIVERSITY OF ARIZONA

J = Joint Appointment; M = member; C = collaboration

	Graduate Interdisciplinary Programs				Inst	School	UA Departments						University of Arizona Medical Center					School of Public Health		
	Cog Sci GIDP	Neurosci GIDP	Bio Med GIDP	SLAT	Bio5	SISTA	Educ.	Ling	Psych	Span/ Port	Chem. Opt. Sci.	ENT	Peds	NeuroL	Nursing	Radiol.	Family & Child Health	Health Promot	Enviroml & Occ Health	
Ten Track Faculty																				
Alt, Mary	С				С	С														
Beeson, Pélagie	М		М		М			С						J, C		С				
Bunton, Kate							С													
Cone, Barbara		М																		
Dai, Haunping																				
DeDe, Gayle	М			М					С											
Fabiano-Smith, Leah				М			С	С		С										
Hoit, Jeannette		М																		
Lotto, Andrew	м								С											
Maas, Edwin	М							С												
Marrone, Nicole									С									С		
Plante, Elena	М, С					J			С											
Story, Brad	М		м																	
Wilson, Stephen	М													J, C		С				
Clinical Faculty																				
Casteix, Jennifer											С		J, C				С			
Faux, Cass							С		С					С						
Harris, Fran							С								С			С		
McGrath, Kathe																				
Muller, Tom							С												C	

Cog Sci = Cognitive Science Graduate Interdisciplinary Program; Neurosci = Neuroscience Graduate Interdisciplinary Program; Bio5 = Bio5 Institute; Bio Med = Biomedical Engineering; Educ = Education; Ling = Linguistics; Psych = Psychology; SISTA = School of Science, Technology, and Arts; SLAT = Second Language Acquisition & Teaching; Span/Port = Spanish Portuguese; ENT = Division of Otolaryngology; Peds = Pediatrics; Neurol = Neurology; Radiol = Radiology.

APPENDIX P. FACULTY BIOSKETCHES

Tenure-Track Faculty Biosketches

• Go to SLHS APR folder to open file APPENDIX P1 Biosketch TT.pdf (not hyperlinked)

Career-Track Faculty Biosketches

• Go to SLHS APR folder to open file APPENDIX P2 Biosketch CT.pdf (not hyperlinked)



APPENDIX Q. PHOTO CREDITS

- 1. Paul O'Mara, Campus views from the stadium roof in the evening
- 2. Jacob Chinn, Old Main 2014 Renovation of second floor
- 3. FJ Gaylor, Landscapes of the UA Campus and Tucson
- 4. FJ Gaylor, Sunrise shots of campus and the Tucson area from the roof of the Thomas W. Keating Bioresearch Building
- 5. Jacob Chinn
- 6. Paul O'Mara, Campus views from the stadium roof in the evening
- 7. Gregor Orbino, Sunset with the Memorial Fountain in the foreground
- 8. Gregor Orbino, University of Arizona Sunset over the UA Mall and Old Main
- 9. FJ Gaylor, Landscapes of the UA Campus and Tucson (Back Cover)



