

Speech and Hearing Science
Undergraduate Handbook
2016-2017

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What is Speech and Hearing Science?

Speech and Hearing Science is the study of normal and disordered functioning of the auditory system, the speech mechanism, and language processing. It is a diverse field which draws upon a number of other disciplines, including anatomy, physiology, psychology, linguistics, physics, engineering, medicine, and education. Students pursuing a major in Speech and Hearing Science are introduced both to basic and applied research and to clinical applications. Professional career paths include Speech-Language Pathology, Audiology, or Speech, Language, or Hearing Scientist.

Speech-Language Pathologists assess and treat persons of all ages with speech, language, voice, and fluency disorders. They may also work with people who have oral motor problems that cause eating and swallowing difficulties. They use special instruments, as well as written and oral tests, to determine the nature and extent of impairment, and to record and analyze irregularities in language, speech, swallowing and respiration. For individuals with little or no speech, speech-language pathologists select alternative communication systems, including automated devices and sign language, and teach their use. Entry level positions require at least a Master's degree.

Audiologists specialize in the prevention, assessment, and rehabilitation of hearing disorders. They use a variety of testing devices to measure an individual's hearing sensitivity. When hearing loss exists, they determine the nature and extent of the hearing loss and recommend appropriate treatment, including hearing aids or other assistive devices. Audiologists also test noise levels in workplaces and conduct hearing protection programs. Entry level positions require at least a Doctoral degree (AuD or PhD).

Hearing, speech, and language scientists conduct basic and applied research related to human communication processes. They may study speech or music perception, the ecological impact of sound on humans, or the normal processes underlying the production of speech and the development and use of language. Speech, language and hearing scientists may use either behavioral or biomedical research protocols in their work. While many projects seek a better understanding of normal language, hearing or speech processes, often the ultimate goal of the research is to address disorders of human communication. To work independently and receive grant funding for their research, most hearing, speech, or language scientists hold the PhD degree. Some individuals with a masters or professional doctorate continue into the PhD program.

Speech and Hearing Science at Ohio State

The Department of Speech and Hearing Science at Ohio State can trace its roots to the Department of Rhetoric founded in 1892, and the Department of Phonetics founded in 1930. In 1936, those departments were merged into the Department of Speech with Professor G. Oscar Russell as the head of the phonetics area. Reorganization in 1948 produced five areas in the Speech Department, including Speech Correction and Hearing Therapy, and Education of the Deaf. In 1965, the Speech and Hearing Science Section was reorganized under the leadership of Professor John Black. After 60 years in Derby Hall, the Speech and Hearing Science Section moved to Pressey Hall in 1990 and in 1993 became the Department of Speech and Hearing Science. Since 1968 the unit has been a part of the Division of Social and Behavioral Sciences in the College of Arts and Sciences.

Career opportunities for Speech and Hearing Science majors

Career opportunities for persons with a bachelor's degree in Speech and Hearing Science are comparable to those for students with undergraduate degrees in related fields, such as psychology, sociology, linguistics, or other liberal arts and sciences degrees. While many continue into graduate programs in Audiology or Speech-Language Pathology, others may choose to pursue careers in teaching or other areas in the health professions. Because the degree is a broadly-based liberal arts degree, it can serve as a basis for entry into careers in education, law, medicine, business, government, or industry.

Speech-language pathologists and audiologists are professionals who work closely with teachers, physicians, psychologists, social workers, rehabilitation counselors, and other members of an interdisciplinary team, but are autonomous and do not work under direct medical supervision.

They provide professional services in:

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| * public and private schools | * state and federal government agencies |
| * hospitals | * home care |
| * rehabilitation centers and nursing care facilities | * adult day care centers |
| * community clinics | * centers for the developmentally disabled |
| * college and university clinics | * research laboratories |
| * private practice offices | * industry |
| * state and local health departments | |

It is important to note that for professional certification and state licensure as a speech-language pathologist a master's degree is required. All states that license speech-language pathologists require master's level training. In addition, the American Speech-Language-Hearing Association (ASHA) requires both completion of a master's degree and a year of clinical internship (Clinical Fellowship) for the certificate of clinical competence in Speech-Language Pathology (CCC-SLP). Please note that requirements for the MA degree may not be identical to those for the CCC-SLP. For example, certification requires course work in the biological sciences, physical sciences, statistics, and the social / behavioral sciences. Generally, these courses may be taken at either the undergraduate or graduate level; however, some graduate programs may **require** them before admission into the MA/SLP. Further, a "stand-alone" course in statistics is required, and courses in biological and physical science specifically related to speech and hearing science (or CSD) courses may not be applied for certification unless the course meets a university "general education" requirement available to all majors. Students are expected to check the requirements of every graduate program to which they intend to apply well before the application deadline to ensure that they meet admissions requirements.

Audiologists practice in many of the same settings as speech-language pathologists, but with a greater representation in such settings as hospitals and clinics, or private practices. Although requirements for licensure vary from state to state, certification (CCC-A and/or American Board of Audiology) and licensure in the majority of states require a doctoral degree (AuD or equivalent) to practice audiology.

Hearing, speech, and language scientists are found primarily in universities, research institutions, government agencies, and industry. There are no specific credentialing requirements; however, most positions will specify a graduate degree, typically a PhD.

Graduate School

Admission to most graduate programs is very competitive. Undergraduate majors in Speech and Hearing Science should begin thinking about graduate programs early in their junior year (or even sooner). Students are encouraged to meet with a faculty member in Speech and Hearing Science, to discuss possible graduate programs that match their interests and abilities.

In addition, students should plan to take the Graduate Record Examination (GRE) before the autumn semester of the senior year. Most graduate programs in Speech and Hearing will require the GRE, and will base decisions for admission on GPA, GRE scores, and letters of recommendation from faculty members in the student's program. Students should contact faculty members for recommendations before the autumn semester of the senior year. It is the responsibility of the student to know the admissions requirements of the graduate programs to which they are applying.

Students who do not plan to attend graduate school immediately may contact an advisor in Speech and Hearing Science to discuss alternatives to graduate school. In addition, the Arts and Sciences Career Office in Townsend Hall can provide information about job opportunities for students with an Arts and Sciences degree.

Employment Outlook

Employment of speech-language pathologists and audiologists is expected to increase faster than the average for all occupations through the year 2020. Recent estimates place audiology in the top 20 growth professions, and speech-language pathology in the top 10. Employment in the health care industry is projected to grow faster than the average for all occupations, while employment in education is expected to grow only as fast as the average.

The American Speech-Language-Hearing Association (ASHA) web site provides timely information about market trends for speech-language pathologists and audiologists. Students can get the most up-to-date information from that site: www.asha.org/careers, including salary data collected by ASHA for audiologists and speech-language pathologists in a variety of work roles and settings. Prospective audiologists should check the web site of the American Academy of Audiology (AAA) www.audiology.org for information about career options in audiology.

The Major in Speech and Hearing Science at Ohio State

If you are interested in majoring in Speech and Hearing Science, make an appointment with a Speech and Hearing Science advisor by calling (614) 292-6961 (option 3). At the initial appointment you will discuss the requirements for the major and plan your major coursework. A student interested in majoring in Speech and Hearing Science must include coursework in biology (**Biology 1101**, or higher), human lifespan development (such as **HDFS 2400**, **Psych 3340**, or **SHS 3350**), and mathematics (at least **Math 1148**, college algebra) in their GE or GEC plan. Please contact your Speech and Hearing Science advisor if you have any questions about this process.

Advising

Students majoring in Speech and Hearing Science should meet with their advisor on a regular basis. All students are required to meet with an advisor one semester prior to graduation for completion of graduation paperwork; however, speech and hearing science students are encouraged to meet with their advisor in the department at least once a year, to ensure that they are making satisfactory progress toward graduation, or to discuss career options, senior thesis, or other topics. Admission requirements, such as required prerequisite courses for admission to graduate programs should be directed to the graduate admissions office of the specific graduate program of interest.

Speech and Hearing Science Requirements

SHS 2230	Introduction to Communication and Its Disorders
SHS 3320	Principles of Phonetics
SHS 3340	Introduction to the Art and Science of Sound
SHS 3330	Language Acquisition
SHS 4420	Anatomy, Physiology and Science of Speech
SHS 4430	Introduction to Language Science and Language Disorders
SHS 4440	Anatomy, Physiology and Science of Hearing
SHS 4520	Introduction to Speech-Language Pathology
SHS 4540	Introduction to Audiology
SHS 5605	Multicultural Aspects of Communication and its Disorders

Upper Level Elective Courses

At least two courses in Speech and Hearing Science at the 4000 or 5000 level for at least five semester hours approved should be taken after the required courses.

SHS 5732*	Introduction to Aural Rehabilitation
SHS 5760*	Neurology of the Speech and Hearing Mechanism
SHS 4999	Senior Research Thesis (GPA of 3.4 & permission of the instructor)
SHS 4999H	Honors Research Thesis (permission of the instructor)
SHS 4510	Disability Studies in Context
SHS 5714	Introduction to Sign Language Systems
PSY 5700	Training in Science Education and Outreach
PSY 5737	Proseminar in Cognitive Science

***Recommended upper level courses for students planning to attend graduate school**

Observation Hours

Currently, the American Speech-Language-Hearing Association (ASHA) requires that students complete 25 hours of observation of speech/language/hearing services prior to completion of their GRADUATE program, as part of the requirement to obtain a Certificate of Clinical Competence (CCC). Therefore, it is the policy of the Department of Speech and Hearing Science to require that observation hours be completed by the end of the MA SLP program or the AuD program. However, it should be noted that some graduate programs require that 25 observation hours must be accrued **prior** to beginning their program. It is the responsibility of the student to know the admissions requirements of the graduate programs to which they are applying, and if observation hours are required, to obtain those hours independently. **Students must keep their own records of those hours.** Observation hours are not a degree requirement in the undergraduate program in Speech and Hearing Science, but they are available through enrollment in SHS 3360.

Sample Curriculum

Freshman Year

Coursework toward GE requirements (including: Biology 1101 and Math 1148)

Sophomore Year

	<u>Prerequisite</u>
SHS 2230	none
SHS 3320	none
SHS 3330	none
SHS 3340	none
Human Development Course	

Junior Year

SHS 4420	SHS 2230 & 3320
SHS 4430	SHS 3330
SHS 4440	SHS 3340
SHS 4520 (or SHS 4540)	SHS 3320, 3330, & 4420

Senior Year

SHS 4540 (or SHS 4520)	SHS 3340 & 4440
SHS 5605	SHS 3330
Upper Level Elective SHS 5732	SHS 4540
Upper Level Elective SHS 5760	BIO 1101
Other SHS 4000/5000-level classes	Varies by course

IMPORTANT: All Speech and Hearing Science majors must attain a grade of C– or higher in each of the courses listed above. If a C– is not attained, the course must be repeated. Substitutions for the core requirements are rarely permitted. Students who must repeat a course should contact an advisor in Speech and Hearing Science to determine when the course will be repeated.

Honors & Scholars programs

The honors program is an enhancement of the basic liberal arts degree for the Speech and Hearing Science major. Students in the honors program will take enriched honors courses, and will complete an honors contract leading to graduation with honors in the Liberal Arts (no thesis), or to graduation with honors research distinction (with thesis). Eligibility for the honors program in Arts and Sciences requires at least a 3.4 GPA. The department encourages participation in the honors program, because the honors program will provide additional depth to the undergraduate experience, and perhaps strengthen the student's credentials for graduate school. Professor Christina Roup (roup.2@osu.edu) is the Honors Advisor for Speech and Hearing Science.

The scholars program offers undergraduate students the chance to live and learn with other students who share similar interests. Each of the Scholars programs is centered around a theme or area of study and is open to all students regardless of major. Of the 17 scholars programs, an obvious choice for Speech and Hearing Science majors is the Health Sciences Scholars program that allows the student to investigate career opportunities in health sciences and health care.

Undergraduate Research

Becoming familiar with research in Speech, Language, and Hearing will broaden the student's understanding of the scientific bases for diagnostic tests and therapy procedures that form the core of the Speech-Language Pathology and Audiology professions. The Speech and Hearing Science Department encourages undergraduates to contact individual faculty members to inquire about opportunities for participation in research projects. Experience in research conducted in related disciplines is also valuable. Visit the department's web site (<http://sphs.osu.edu/research>) to read a brief description of current research projects.

The Undergraduate Thesis is a special and personal opportunity for a student to grow in knowledge and understanding. Development of a thesis project can be an interesting and rewarding experience, but it is not the only way to gain research experience, and it should not be undertaken simply to improve graduate school admission prospects. The thesis provides a vehicle for students to gain firsthand knowledge of ongoing research activities in their own discipline, and allows the student to work closely with a faculty advisor to complete an individual research project matched to the student's interests. Students earn academic credit for thesis work, through SHS 4999 or SHS 4999H. Minimum requirements are a GPA of 3.4 and permission of the research advisor. Work on the thesis typically spans both semesters of their senior year.

In the past, students in Speech and Hearing Science completing a senior thesis have received Undergraduate Research Scholarships to support their work on the project. These scholarships provide support for costs associated with the research, and are awarded competitively across the college, based on the quality of the project. Deadlines for application for Undergraduate Research Scholarships occur several times each year. In addition, students completing a senior thesis have the opportunity to participate in the Denman Undergraduate Research Forum, a university-wide competition in which students display the results of their thesis work. Prizes are awarded for particularly outstanding work.

Transfer students

Students who have transferred to Ohio State from another college or university, and who plan to major in Speech and Hearing Science, should contact the undergraduate advisor in Speech and Hearing Science after their arrival at Ohio State. They should bring any paperwork completed by the Admissions Office to their meeting with the advisor, as well as syllabi from all speech and hearing coursework completed at other universities. Transfer students may follow a somewhat unusual schedule in attempting to complete the major coursework.

Continuing Education students

Students holding a bachelor's degree from an accredited college or university with a major in anything other than Speech and Hearing Science, Communicative Sciences and Disorders, or Speech-Language Pathology and Audiology often enroll at Ohio State to complete prerequisite courses prior to applying for admission to a graduate program. Those students should understand that the requirements described in this document apply only to students pursuing a bachelor's degree at Ohio State. Further, they must realize that graduate admissions requirements differ from school to school and may depend on whether they seek admission to a Speech-Language Pathology program or an Audiology program. Continuing education students should consult representatives of the graduate programs to which they plan to apply, and should meet with advisors in the Office of Extended Education program located in Mount Hall. They should not seek advice from the undergraduate advisors in speech and hearing science.

The Minor in Speech and Hearing Science at Ohio State

The Undergraduate Minor in Speech and Hearing Sciences is a complement of the basic liberal arts degree. Its purpose is to educate and promote the awareness of communication disorders. In addition, students earning a minor in Speech and Hearing Science would have completed many of the prerequisites required for admission to a graduate program in Speech-Language Pathology or Audiology. To apply for the minor, students must meet with an undergraduate advisor in the department. After the coordinating advisor in the Department of Speech and Hearing Science has approved the Minor Program Form, the student must file the form with their college or school counselor. For further information about the minor program, make an appointment with the Department of Speech and Hearing Science Undergraduate Advisor by calling (614) 292-6961 (option 3).

The minor in Speech and Hearing Science consists of 15 semester hours. All minor programs require:

SHS 2230 Introduction to Communication and its Disorders

Following the completion of the SHS 2230 course, students choose four other courses from the department to supply the remaining 12 credits. In order to offer maximum flexibility, the department places no restrictions on what four courses are needed to complete the minor.

The following examples are provided as guidance for a student designing his or her minor program:

Example 1: a minor focusing on speech-language pathology

SHS 3320 Principles of Phonetics
SHS 3340 Introduction to the Art and Science of Sound
SHS 4420 Speech Science
SHS 4520 Introduction to Speech-Language Pathology

Example 2: a minor focusing on audiology

SHS 3340 Introduction to the Art and Science of Sound
SHS 4440 Hearing Science
SHS 4540 Introduction to Audiology
SHS 5732 Aural Rehabilitation

Example 3: a minor focusing on multicultural and disability studies

SHS 3330 Language Acquisition
SHS 4430 Introduction to Language Science and Language Disorders
SHS 4510 Disability Studies in Context
SHS 5605 Multicultural Aspects of Communication and its Disorders

Student organizations:

NSSLHA

All undergraduate majors in Speech and Hearing Science are encouraged to join the Ohio State chapter of the National Student Speech-Language-Hearing Association (NSSLHA). NSSLHA (<http://www.nsshla.org/default.htm>) is the student organization sponsored by the American Speech-Language-Hearing Association (ASHA), which oversees professional certification of audiologists and speech-language pathologists in the United States. The Ohio State chapter typically sponsors a number of activities each semester for students who are interested in gaining additional information or experience in areas related to Speech and Hearing. Guest speakers, volunteer opportunities, and social activities are all part of NSSLHA's program. In addition, students who join the National chapter can receive discounts on membership in ASHA when they attain professional status. For more information, visit the OSU NSSLHA web site (nsslha.org.ohio-state.edu) or contact the advisor, Jennifer Brello (brello.1@osu.edu).

SAA

The Student Academy of Audiology (SAA) welcomes undergraduates interested in exploring further study in audiology. SAA is a student-run organization sponsored by the American Academy of Audiology, the national professional organization for audiologists which seeks to further the profession of audiology in the United States. This is a graduate student organization that welcomes undergraduate involvement. The main purposes of SAA are to increase community awareness of the field of audiology and provide education in topics related to the field such as hearing loss and hearing conservation, and to promote community service among SAA members. Events sponsored by SAA each semester include social, volunteer, and fundraising opportunities. For further information, contact the advisor, Christy Goodman (goodman.58@osu.edu), or visit the SAA web site at <http://saa.osu.edu/>.

ASA@OSU

The Acoustical Society of America's regional chapter at Ohio State University (ASA@OSU) is an interdisciplinary organization that supports acoustical research, promotes awareness of sound related fields, discusses technology development and provides a forum where acoustics may be examined. ASA@OSU is a student-run organization where guest speakers from many areas of study are scheduled to present on a topic related to acoustics. ASA@OSU provides opportunities for undergrads and graduate students to get involved; university faculty and administrative staff members are also welcome to attend meetings. The Acoustical Society of America is a national organization founded in 1929. The ASA has members from many fields including physics, oceanography, biology, architecture, engineering, music, linguistics, psychology, physiology and speech and hearing science. The diversity in this organization makes it a great place to meet students from different majors, connect with university faculty and learn about the interdisciplinary field of acoustics. For more information, contact the advisor Dr. Lawrence. Feth (feth.1@osu.edu) or visit us on Facebook at <https://www.facebook.com/asaatosu>.

For More Information:

Visit the department web page at: <http://sphs.osu.edu> , or contact one of the following:

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