



SPEECH & HEARING SCIENCES

UNIVERSITY *of* WASHINGTON

College of Arts and Science

Seattle Campus

Doctorate of Audiology (Au.D.) Program

2010 SELF STUDY REVIEW

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PART A: BACKGROUND INFORMATION

SECTION I: OVERVIEW OF THE ORGANIZATION

Mission & Organizational Structure

Mission: The mission of the Au.D. Program is to promote excellence in education, research and service delivery and to be a center of excellence in education, research and clinical practice within and beyond our local community.

Vision: The vision of the Au.D. Program is to be a center for excellence committed to understanding the basic processes and mechanisms involved in human audition and its disorders, and to improving the quality of life for individuals affected by hearing and balance disorders across the life span.

To achieve this vision we will focus on these goals:

To provide Au.D. students with a foundation in speech and hearing sciences from which to draw from when assessing and managing populations with communication disorders.

To provide Au.D. students with a curriculum that meets or exceeds the academic and clinical practice requirements for professional certification (the Certificate of Clinical Competence in Audiology, or CCC-A) awarded by ASHA (American Speech Language Hearing Association).

To provide in-house clinical training through hands-on experience testing children and adults in the SPHSC clinic.

To provide clinical and rehabilitative Audiology services in the form of evaluations, consultations, and individual and group treatment through mentored placements inside and outside of the SPHSC clinic.

To provide a broad scope of education including cross-disciplinary training that prepares graduates for Audiology careers in a variety of settings.

To provide Au.D. students with an opportunity to participate in research as well as train for a career involving basic or applied research.

Degrees offered: A single degree is offered through this program: the **Doctor of Audiology (Au.D.)**. There are no alternate pathways or tracks within the program. It is a fulltime 4-year commitment. Continuing education and part time study is not offered.

Staffing: The Au.D. Program has four state-funded FTEs and four FTEs funded through a combination of the Department's release recapture budget, the Hearing Aid Dispensary budget and the Au.D. self-sustaining budget. As of Autumn Quarter, 2009, there is one Full Professor, one Associate Professor, one Assistant Professor, and five Lecturers. The Au.D. program has

one open professorial position to be filled. Further, there are two hearing science faculty who contribute to the teaching mission in the Au.D. program. In addition to SPHSC faculty, there are three Adjunct Associate Professors and three Clinical Instructors who contribute part-time teaching. Appendix C provides a more complete description of the SPHSC Au.D. faculty and their areas of interest.

The Au.D. Program has access to support staff in the Department of Speech and Hearing Sciences. There are 3.0 FTE support staff in the Speech and Hearing Clinic and 8.0 FTE support staff in the SPHSC Department. These support staff members provide to all aspects of the Department in the areas of administration, grants management, fiscal/budget, technology, reception, undergraduate advising, and clinic records. These staff members also serve other divisions within SPHSC (including: Speech Language Pathology and Basic Processes of Speech, Hearing, and Language).

Governance: The Department (SPHSC) is administered by a Chair with faculty organized into three principal interest areas (Basic Processes of Speech, Hearing, and Language; Audiology; Speech-Language Pathology), each of which is chaired by a group leader or Head. The Au.D. Program is administered within the Audiology Interest Area and is lead by an Interest Area Head (Kelly Tremblay). (See Appendix A for an organization chart of the Au.D. Interest Area.) The Audiology Interest Area meets monthly and is advisory to the Chair and the faculty as a whole concerning all aspects of the Audiology program including the Au.D. This includes: managing budgets, student admissions, curriculum planning, didactic and clinic evaluation processes, student tracking scheduling; faculty and TA deployment; and evaluation of graduate student progress. The Head of the Audiology Interest Area is on the Department's Executive Committee, a committee that is advisory to the Chair in matters of overall departmental planning and procedure.

The Au.D. program meets the accreditation standards established for the Department of Speech and Hearing Sciences. The clinical education program in the Department is fully accredited by the Council on Academic Accreditation (CAA) through the American Speech Language Hearing Association (ASHA) and will continue to be reviewed and approved by that organization. These external evaluations occur through yearly reports to ASHA as well as through on-site evaluations every five years.

Budget & Resources

The budget for the Au.D. Program receives contributions from three separate sources: 1) a portion of the GOF budget of the Department of Speech and Hearing Sciences, 2) fee-based revenues generated through additional student fees through Professional and Continuing Education, and 3) revenues from the Speech and Hearing Clinic Hearing Aid Dispensary. Students pay graduate tuition to the University of Washington (resident or non-resident tuition) as well as a separate clinical education fee paid through Professional and Continuing Education. The cost to students is the combined UW graduate tuition and the miscellaneous fees assessed through Professional and Continuing Education. For the 2009-10 academic year, the resident UW graduate tuition was \$13,409 (including summer) and the Professional and Continuing Education fees were \$10,192 (including summer) for a total (plus additional misc. fees) cost of

\$24,478 annually. For non-resident students, the UW graduate tuition was \$31,564 (including summer) and the Professional and Continuing Education fees were \$10,192 (including summer) for a total plus additional miscellaneous fees cost of \$42,632 annually. **The total four year degree tuition including Profession and Continuing Education fees is \$83,626 for in state and \$100,026 for out of state students.** The Hearing Aid Dispensary provides some small contribution to salary support for various Au.D. Program Faculty. Appendix B provides a budget summary.

Budget Evaluation: The Department of Speech and Hearing Sciences Executive Committee, advisory to the Department Chair, provides ongoing review and evaluation of all fiscal/budget matters in the Au.D. program as well as advice regarding faculty and staff deployment. The Executive Committee receives additional input from the Audiology Interest Area as well as the standing Clinic Coordinating Committee.

Funding Strategies: The on-going memo of agreement with Professional and Continuing Education assesses an instructional fee of \$10,192 for each student for each year in the program. This assessment allows for sufficient resources for faculty and staff to offer the Au.D. Program. In addition, we have a small training grant from the Association of University Centers on Disabilities (AUCD) that provides stipends to selected students in pediatric Audiology during the third year of study. Students participating in the Au.D. and Au.D./Ph.D. track are eligible to serve as teaching assistants (TA) when needed. This service comes with a tuition waiver and stipend.

SECTION II: TEACHING & LEARNING

Student Learning Goals and Outcomes

Student learning goals:

Student learning goals are driven by the Speech and Hearing Sciences faculty, the UW Graduate School and through national standards as determined by the American Speech-Language-Hearing Association (ASHA) (the organization which provides national accreditation to our Au.D. program). Undergraduate coursework in basic communication sciences is assumed upon entering the program; however, students without a background in speech and hearing sciences may require additional coursework beyond the required program plan.

Students are not required to have a speech and hearing undergraduate major in order to apply to the Au.D. program. Because we no longer require students to have majored in speech and hearing sciences at the undergraduate level, we are now able to recruit non-traditional students into the Au.D. program. This change in admission policy provides the opportunity to increase diversity in terms of educational background. We view this as a positive move for our profession because it provides the opportunity for students from pre-medicine, computer science, electrical engineering, linguistics and education to bring their perspectives and skills to the profession.

Upon completing the Au.D. program, however, all students will have a minimum of one course in each of the following areas: life science, physical science, behavioral science, and mathematics. Coursework must also satisfy ASHA requirements and include: normal development of speech and language; phonologic, morphologic, syntactic, and pragmatic aspects of human communication associated with hearing impairment; and normal processes of speech and language production and perception over the life span. Required and elective coursework for the AuD degree can be found in Table 2 and Table 3.

Table 2. Required courses and credits for the Au.D. degree

462 Hearing Development (3)	574 Assessment of Balance (4)	585 Pediatric Amplification (2)
503 Professional Issues (2)	575 Medical Bkgs (3)	586 Cochlear Implants (5)
504 Research Methods (3)	576 Otoacoustic Emissions (2)	588 Professional Seminar (F/W/Sp 3 rd yr = 3 total)
509 Adv Hearing Science (3)	577 Hrng Conservation (3)	592 Physiologic Assess I (3)
521 Instrumentation (4)	578 Hrng Screening (2)	593 Physiologic Assess II (3)
522 Instrument Repair (1)	579 Geriatric Audiology (2)	600 Research Practicum (3 cr x 4 qtrs = 12 total)
523 Special Topics (3)	580 Adv Audiol Rehab (3)	EDSPY 490 Basic Statist (3) (or eqv)
542 Counseling (2-3)	581 Mgt HI Child (2)	
570 Assess Aud Dysf I (4)	582 HA Amplification (4)	
571 Assess Aud Dysf II (4)	583 HA Selection (4)	
572 Pediatric Aud (3)	584 Adv Issues HA (2)	

Table 3. Examples of possible electives

EDPSY 471 Neurops Sch (5)	HSERV 510 Soc & Health (3)	UCONJ 442 Soc Aging (3)
EDPSY 419 Intervention (3)	HSERV 511 Health Ser (3-4)	UCONJ 524 Dev Neuro (3)
EDSPE 504 Sp Ed & Law (3)	HSERV 518 Soc & Eth (2-4)	UCONJ 411 Psych Aging (3)
E 518 Digital Sig Process (4)	MKT 335 Principles Selling (4)	UCONJ 440 Biol Aging (3)
ENVH 457 Industrial Noise (3)	NEUBEH 502 Neurobio (4)	ASL 305 Deaf Studies (3)
SPHSC Courses:		
SPHSC 308 Soc Cult Asp (3)	SPHSC 503 Current Issues Sp/Hearing Sciences (3)	SPHSC 505 Clinical Research in Comm. Disorders (3)
SPHSC 510 Physiological Acoustics (3)	SPHSC 511 Psychoacoustics (3)	SPHSC 514 Speech physiology (3)
SPHSC 515 Speech acoustics (3)	SPSHC 516 Speech perception (3)	SPHSC 525 Speech Signal Processing (3)
SPHSC 540 Phonological dev (3)	SPHSC 560 Studies in Speech Science and Disorders (3)	SPHSC 561 Studies in Hearing Science and Disorders (3)
SPHSC 562 Studies in Language Science and Disorders (3)	SPHSC 563 Proseminar: Instructional Development Forum (1, max 3 credits)	SPHSC 566 Seminar in Speech-Language Development (2)
SPHSC 567 Research Seminar in Speech and Hearing Sciences (1)	SPHSC 599 Research Practicum (variable, max 12)	SPHSC 600 Independent Study (variable, max 10)

All students participate in part-time clinical practicum experiences during the first three years in the program. Each student completes a 12-month full-time supervised externship during the final four quarters of the program.

The following outcomes are expected as a result of the combined didactic and practical coursework:

- Demonstrate a knowledge foundation concerning disorders of the auditory pathway
- Demonstrate a knowledge foundation concerning approaches to diagnosis and intervention of auditory disorders
- Practice in a variety of clinical settings such as medical facilities, schools, and private practices
- Provide clinical services to individuals across the variety of hearing disorders
- Provide clinical services to individuals across the lifespan
- Provide clinical services in a variety of work settings
- Critically evaluate the appropriateness and effectiveness of diagnostic strategies and clinical intervention
- Prepares students in the full breadth and depth of the scope of practice in audiology
- Personalize their approach in clinical practice and adapt to meet the needs of the individual as well as attitudinal and environmental constraints
- Demonstrate clinical decision-making skills

Methods to evaluate student learning:

Clinical Comprehensive Examination – Students who excel in the classroom might be challenged to demonstrate competency when working with patients. For this reason comprehensive practical exams using standardized patients have been instituted for 1st year and 2nd year Au.D. students. The purpose of these examinations is to monitor the clinical skills of the students as they progress through the 4-year Au.D. Program. Expected clinical competencies must be met before the student is allowed to progress to the next academic year. The content for the 1st year students covers diagnostic Audiology. Content for the 2nd year students covers one

of the following: adult diagnostic evaluation including integration of the auditory brainstem response and otoacoustic emissions; pediatric diagnostic evaluation or hearing aid troubleshooting/real-ear measurements. If a student does not pass the exam they are allowed one re-take. If the re-take is not passed the student is dismissed from the program. Students must pass the examination prior to outside placements.

Written Comprehensive Examination – 3rd year Au.D. students are required to pass a written comprehensive examination at the beginning of winter quarter. Examination questions cover the following area: pediatric assessment, adult assessment, amplification, normal audition and treatment of hearing impairment. If a question is not passed the first time the student is allowed to re-take a new question within the same topic area. Should that question be failed, the student may be dismissed from the program. The purpose of the written comprehensive exam is to evaluate the student's didactic knowledge and critical thinking.

Knowledge and Skills Acquisition (KASA) – students must acquire the knowledge and skills required for certification through ASHA (American Speech-Language and Hearing Association). At the conclusion of each clinical practicum, students meet with their supervisor to review their clinic progress relative to the KASA standards. Students will track their progress on a departmental computer-based program that will document their didactic and clinical coursework, as well as their clinical hours.

Au.D. Research Project – all students are required to complete a research project with the advice and approval of their advisor and research mentor. The entire project involves a 10-credit series of mentored research that results in a project showing evidence of mature scholarship, while contributing important and useful information to the profession. The student's work should demonstrate a firm grasp of the problems in a particular area of study and show an ability to communicate ideas in writing. Topics can be basic or clinical research. Some examples include: studying ototoxicity in zebrafish, estimating noise levels coming from the personal media players of college students, as well as examining the effects of auditory training on brain activity. We believe the Au.D. research component required for the completion of the Au.D. degree is an important area of training and is a strength and distinction of our program. Through the research project students develop critical skills in developing a research protocol, gathering and analyzing data, as well as conducting a final written and poster presentation. These experiences provide valuable lessons in understanding and consuming research in their professional careers. We are the largest Ph.D. granting institution in the country for Speech and Hearing sciences. Whether our students leave with a Ph.D. or the combined Au.D./Ph.D. we are providing significant contributions to the profession of audiology to further our knowledge and research base in our profession.

Methods for assessing student satisfaction:

At the completion of each didactic course and/or practicum experience, students are asked to anonymously evaluate the instructor through written comments and standardized forms available through the the Office of Educational Assessment. Completed forms are returned to the OEA and the scores are interpreted. Results of these assessments are returned to the instructor and the Chair of the department.

An additional method for assessing student satisfaction has been the creation of a student representative to act as a liaison between faculty and the Au.D. students. The Audiology Interest Group meets at least once a month and the student representative, who has been selected by his/her peers, is present at these meetings. The representative is given the opportunity to express any student concerns as well as contribute his/her opinion and is then responsible for sharing information from the meeting with the other students. The student representative may also bring up areas of concern to the Audiology Interest Group Head between meeting dates if needed.

Assessment of student learning:

The first group of 4-year Au.D. students entered the program in the fall of 2006. The clinical comprehensive hands-on examination was not commenced until the following year. Therefore, in the spring of 2008, ten first-year students took the exam during spring quarter. The purpose of this exam format is to assess a student's ability to integrate and apply knowledge gained in the classroom to a clinic setting, involving standardized patients. One student failed the exam the first time, but passed on the second attempt. In the spring of 2008, ten second-year students took the exam with two students failing the first time and subsequently passing the second re-take. Thirteen first-year students took the exam in the spring of 2009 with no failures.

The first written comprehensive exam taken by students in the 4-year Au.D. program, was offered at the beginning of winter quarter, 2009. The purpose of this written exam is to assess each student's ability to integrate knowledge gained in the previous 3 years and apply it to different case studies and theoretical models. Ten students took the examination. Each examination consists of questions representing five different specialty areas (see previous section). Only 10% of the questions needed to be retaken due to poor performance. All students subsequently passed this requirement.

In conclusion, the unit has used the findings described within this section to make significant improvements in the didactic and clinical requirements, as well as in the creation of clinical comprehensive examinations. The clinical comprehensive examination was driven by a need to assess clinical competencies under a consistent "benchmark" prior to progressing into the 2nd year of the program and prior to participating in external clinical rotations. Additional decisions regarding curriculum, practical experiences and examinations have been driven in part by student feedback and feedback from external clinical supervisors. For instance, a recent curriculum review of the clinical practica progression revealed areas that could benefit from change. Specifically, changes were made to the first year progression to assure an equal clinical experience in the 1st and 2nd quarters of their first year in the program. Prior to this change, students either participated in a speech clinic rotation, aural rehabilitation rotation or an employee hearing screening (EHS) program creating inconsistent opportunities to practice diagnostic skills. During Fall, 2009 all students participated in a diagnostic rotation to screen individuals for research purposes (or the EHS program). Positive feedback was provided by the students regarding this new opportunity. Another area of change was a review into the didactic curricula to eliminate redundancy between courses. This review was conducted in part because of student feedback regarding some redundancies in guest lecturers across different courses.

Instructional Effectiveness

The Department of Speech and Hearing Sciences conducts peer teaching reviews and merit reviews at varying intervals depending on faculty rank in accordance with UW policies. Merit reviews occur annually and peer teaching reviews occur annually for assistant professors, full and part-time lecturers and clinical faculty. Full professors, associate professors and senior lectures are evaluated every three years for the peer teaching component. A peer teaching committee evaluates each faculty member on the following self-submitted criteria. For each course or practicum taught, the instructor provides: syllabus, sample of lecture, sample of assessment tool (quiz, exam) and copies of instructional assessment forms including student comments. Faculty members are responsible for uploading materials to a website using the [Peer Teaching Feedback Checklist](#). This material is then reviewed by the committee and reported using the [Peer Teaching Committee Feedback](#) form. Each faculty member obtains a rating of “acceptable”, “needs attention” or “NA” for each of the measures. They also receive an overall rating for each course/practicum of “1” if they meet/exceed expectations or “O” if not meeting expectation. If a faculty member receives a “O” rating the faculty member meets with the Chair of the Department and a copy of the Peer Teaching Feedback Checklist would be placed in the faculty member’s record. The Chair would work with the faculty member to develop a plan to assist that faculty member into meeting departmental standards.

Additionally, each faculty member participates in a Merit Review annually. During this process each faculty member provides the following documents: a current CV, yearly activity report ([professorial](#) version and [lecturer](#) version) and a personal statement regarding their progress in the previous year with additional goals for the upcoming year. A peer observation may also be conducted as part of the Merit Review process. Faculty files are reviewed by peers. Ratings are only counted for colleagues within equal or higher ranks (i.e. full-time lecturers review full-time lecturers, part-time lecturers and clinical faculty but they do not review senior lecturers).

As part of the interview process for any position requiring classroom instruction, the applicant must conduct a lecture for a course. This lecture is observed by current faculty members and students. Once hired, the new faculty member is mentored by a senior faculty member and will be observed for at least one additional lecture. Faculty members are also encouraged to use the Center for Instructional Development (CIDR) for additional teaching support.

Doctoral and graduate students, including TAs, are provided additional training through SPHSC 563 Instruction Development Forum course. As described on the course website <http://faculty.washington.edu/lolswang/html/563index.html>, this course serves the following functions. “This course is designed to provide students with general and specific information regarding teaching at the college/university level. The course will expose students to University of Washington teaching resources and provide opportunities to learn about instructional techniques and issues as they relate to teaching in the discipline of communication sciences and its disorders. Guest speakers, panel presentations, group discussions will be included in the course delivery. Students will be expected to be actively engaged in both the teaching and learning of material. Students will be required to complete two assignments during the year. One assignment will be to investigate and lead a class discussion on a topic related to teaching

and of particular interest to the student. The other assignment will be to develop and write a short essay regarding the student's philosophy of teaching. The course is designed to not only provide opportunities to increase knowledge and skills in regards to teaching, but also as a forum for students to share personal experiences and insights related to teaching and learning.” In addition, the course website is available for TA resources such as sharing teaching tools, sharing previous syllabus and previous labs. Each TA is also supported by and works closely with the faculty member teaching the respective course.

Instructional changes that have occurred due to peer teaching reviews, merit reviews and/or classroom observations have varied per faculty member. Changes include revising a syllabus to provide greater clarity of course requirements and/or expectations for success within that class. We have also observed changes to the format and content of PowerPoint presentation material for improved organization. Course websites have been created in some cases, and expanded for others to provide web-based access to the course syllabus, lectures, readings and examples of student projects.

When clear correction is needed, faculty members have consulted with Center for Instructional Development and Research (CIDR), either voluntarily or at the urging of the Department Chair or Head of their respective Interest Group section. These efforts have demonstrated improvement on test construction, lecture style, management of grading data or all of the above. Consultants from CIDR have observed in the classroom environment to provide feedback to instructors. This has included obtaining information from students to share with the faculty member.

In order to enhance teaching effectiveness, faculty members attend numerous continuing education courses to further their knowledge base in didactic and clinical areas. The department encourages and supports faculty in this mission to remain current in our profession.

Teaching and Mentoring Outside the Classroom

Teaching and mentoring outside of the classroom are essential components of the Au.D. program in which all Au.D. faculty are actively involved. These components may be provided through activities such as advising, clinical rotations, research projects, work study positions, teaching assistant positions and student leadership as described within this section.

All Au.D. faculty mentor students as academic and program advisors. Advisors meet with the student regularly to ensure the student is progressing through their program satisfactorily and provide guidance in planning their overall program.

Students are assigned clinical rotations from the beginning of their program through their third year. Core faculty work with students individually during this experience and provide mentoring, teaching and guidance in a close relationship. The instructor meets with the student weekly to provide additional feedback and to assist the student in planning further sessions. Close mentorship allows teaching of specific skills as well as demonstration of critical interpersonal and professional behaviors within a clinical environment.

Professors and lecturers are also mentors to the Au.D. students for their research projects. In addition to classroom training on how to conduct a literature search and design an experiment, faculty work with students to help them develop a research question and then assist them throughout the design, implementation and written document. The result is a 10 credit sequence dedicated to a capstone project which is presented in written and oral form in the student's third year. In many instances, Au.D. students present their research projects at state and national meetings.

Professorial faculty also serve on dissertation committees for those students who are obtaining combined Au.D./Ph.D. degrees. They also mentor Au.D. students through Research Assistant or hourly positions available in their research labs. Experience and mentorship received in a research lab has exposed students to opportunities in research and has motivated many students to ultimately pursue the Ph.D. degree.

Au.D. students are offered hourly positions in the Audiology Diagnostic Clinic and the Lions Hearing Aid Bank. In these positions students work closely with Audiology Clinical faculty and learn important professional skills related to the field. Students are given experience and mentorship in practice management areas which facilitate and enhance the transition to expectations in clinical environments.

Au.D. students are eligible for Teaching Assistant positions during their second and third years and work closely with instructional faculty. Students who serve as Teaching Assistants meet regularly with the course instructor and are mentored in the essential elements of effective teaching and grading.

In addition, a faculty member is mentoring the University of Washington chapter of the Student Academy of Audiology (SAA). This relationship assists student members to develop leadership skills that they will hopefully carry into their professional career. The National Student Speech Language Hearing Association (NSSLHA) is an additional student organization for speech, language and audiology students from undergraduate through graduate studies. Our undergraduate advisor serves as the mentor for this organization.

Au.D. students receive significant mentoring from community professionals. Following successful completion of the second year clinical comprehensive exam, Au.D. students seek outside clinical rotations to begin the transfer of clinical skills to "real world" environments. We have affiliations with several community sites that have committed to mentor our students every quarter. These community sites as well as other sites around the nation also provide full and partial year externships to our fourth year Au.D. students. These relationships are critical to the overall clinical training of Au.D. students. We have established excellent relationships with these sites where we believe the students receive quality clinical instruction that is continued beyond the classroom and department clinical facility. We are confident these sites are committed to mentoring the next generation of audiologists by providing these quality growth experiences. **Anecdotally, placing fourth year students has presented a challenge for many institutions in the country, but we have not experienced problems of this same magnitude because our students are often interested in remaining in the Northwest for their 4th year. With little competition for this region, so far we have been successful with 4th year placements.**

To support our colleagues who volunteer as external supervisors, our department provides mentorship through hosting quarterly meetings and an annual “Summer Institute on Supervision” to support their supervisory training and education. These mechanisms enhance relationships, provide continuing education hours and opens dialogue between supervisors and the university. These events have been well-received by participants to enhance their teaching effectiveness.

SECTION III: SCHOLARLY IMPACT

The mission of the Audiology unit is to be a center of excellence in education, research and clinical practice within and beyond our local community. The Audiology unit includes three doctoral level tenure-track faculty members as well as four full-time lecturer/clinical supervisors. One measure of faculty leadership is success in competing for nationally funded research in a highly competitive environment with limited funding sources. Individual grant support is detailed below. Each of our tenure-track faculty members has or has recently completed funding from the National Institutes of Health, including one training grant for pediatric Audiology training (Folsom).

Our research and clinical interests cover a broad range of topics from newborn hearing screening and early measures of hearing (Folsom), auditory training, aging, and the effects of assistive listening technology (Tremblay), to the sound processing techniques to optimally stimulate the impaired auditory system in cochlear implant listeners (Bierer).

Professor Richard Folsom, Ph.D., CCC-A, has a focus on pediatric Audiology and evoked potentials. He is currently the Head of Audiology at the Center for Human Development and Disabilities at UW and a Research Affiliate of the Bloedel Hearing Research Center. Dr. Folsom has published in the areas of early identification of hearing loss, hearing development, and pediatric assessment. He is currently a principal investigator (UW site) on a large, multi-center research project entitled "Identification of Neonatal Hearing Impairment". The goal of this project is to evaluate the efficacy of both the auditory brainstem response and otoacoustic emissions as tools for identifying hearing loss in the neonatal period. He is also a principal investigator on a grant entitled "Auditory Sensitivity and Frequency Resolution" from the National Institute of Deafness and other Communication Disorders (NIH-NIDCD). Prof. Folsom has been involved as the President of the Washington Society of Audiology as well as serving on many national organization committees and chair positions for conferences. He has an extensive history of training and mentoring numerous masters' theses as well as doctoral dissertations. More information about Dr. Folsom can be found at: <http://depts.washington.edu/sphsc/folsom.htm>

Professor Kelly Tremblay, Ph.D., CCC-A and her research team are interested in auditory rehabilitation and study experience-related changes in the brain. Their program of research includes the effects of auditory deprivation (age-related hearing loss) and stimulation (hearing aids, cochlear implantation, and auditory training) on the brain. Hearing aids and cochlear implants help compensate for disorders of the ear, but successful rehabilitation also depends on the integrity of the central auditory system. Therefore, to learn more about the representation of sound in the brain, members of the Brain and Behavior lab use EEG methods to explore how sound is processed in the auditory systems of people with and without hearing loss. To learn

more about each project, visit this website

<http://depts.washington.edu/sphsc/labsites/tremblay/research.htm> She has a long history of funding as the PI on grants from the National Institutes of Health, American Academy of Audiology, American Federation of Hearing Research and the Deafness Research Foundation. She is also a Fellow of the American Speech-Language Hearing Association. Her Au.D./Ph.D. and Ph.D. students are also funded through NIH NRSA F30 and F31 grants.

Professor Julie Arenberg Bierer's, Ph.D., CCC-A research interests involve cochlear implants, which are prostheses that enhance or restore hearing in severely impaired individuals. Cochlear implant patients typically perform well, but they show a wide range of speech perception abilities and most cannot enjoy music. Her research addresses the possible causes of poor outcomes and explores new clinical techniques and signal processing methods that may improve the way cochlear implant patients hear. This link can be used to learn more about her work <http://depts.washington.edu/sphsc/bierer.html>

Our students also receive instruction and direction from faculty in the normal aspects division of our department including Lynne Werner, Ph.D. and G. Christopher Stecker, Ph.D. Dr. Werner's area of expertise lies in the development of hearing in infants. She is a well respected scientist and has had NIH funding for many years. For the Au.D. students she often teaches courses on Hearing Development and Research Methods. Dr. Stecker studies the perception of sounds from different locations in space and he has also been funded from NIH and NSF throughout his career. He has taught the required Instrumentation course and two doctoral level courses Physiology of Hearing and Psychology of Hearing that our Au.D. students may take as electives.

Our unit also involves our adjunct faculty members in didactic teaching, as well as clinical supervision. Our adjunct faculty includes world renowned clinician scientists including Patrick Feeney, Ph.D. who is currently Past-President of the American Academy of Audiology, and also the Chief of Audiology at the University of Washington Medical Center. Dr. Feeney teaches our vestibular course. Dr. Tom Rees is a UW associate professor of otolaryngology and director of the Audiology Services at Harborview Medical Center. Dr. Rees teaches courses in medical audiology, and medical coding. Dr. Susan Norton is currently the director of Audiology and the Cochlear Implant program and Seattle Children's Hospital and Regional Medical Center. She teaches courses in cochlear implants and management of hearing impaired children.

- **Are there any student accomplishments (both undergraduate and graduate) that have had broad impact on the field?**

Many of our students, who have attended the University of Washington as undergraduates are Mary Gates Scholars who are active in our program prior to joining SPHSC as a graduate student. Within our graduate program, several students have been awarded scholarships through the LEND program described in the following section. In addition, students have presented their work and received travel awards to attend several international meetings, including the Association for Research in Otolaryngology, the American Auditory Society, and the Conference on Implantable Auditory Prostheses. Our first Au.D./Ph.D. student, Katrina McClanahan, was recently awarded an NIH individual fellowship training grant for students dually enrolled in both an Au.D. and a Ph.D. program. One of our former students, Naomi Bramhall, has gone on to a

Ph.D. program at the Massachusetts Institute of Technology, Health Scientist Training Program and she is co-author on a couple of peer reviewed papers from her Au.D. research project with Valerie Street, Ph.D. (one of the Bloedel faculty members). Additionally, over the last five years we have had two Ph.D. students receive the ASHA's New Century Scholars award, one receive the National Center for Rehabilitative Audiology Summer research traineeship and a number of University of Washington internal scholarships awarded for academic and clinical achievement.

- **In what ways have advances in the field or discipline, changing paradigms, changing funding patterns, new technologies and trends, or other changes influenced research, scholarship, or creative activity in the unit?**

Advances in the field of Audiology have led to the expansion of the Au.D. program from 3 to 4 years enabling the curriculum to include advanced technology training in areas such as electrophysiology and cochlear implants. As part of the requirements for the four year Au.D. program we include a mentored research project and by increasing the length of the program by one year, the students can gain more research experience. Recently the NIH has added audiology as one of the clinical training programs that allows students to receive funding in the form of training fellowships for clinical and research training.

In terms of the clinical training, we have added clinical comprehensive exams during Spring quarter of the first and second year of the program (see Section II, subsection “Methods to Evaluate Student Learning”). We have incorporated the use of standardized patients from the medical school to serve as practice patients for hands-on training in the classroom, labs and for exams. Also, video cameras have been installed in the clinic for supervisors to observe students with patients and for counseling students about their interactions with the patients.

- **List any collaborative and/or interdisciplinary efforts between the unit and other units at the University or at other institutions, and the positive impacts of these efforts.**

Students and faculty also benefit from regular scholarly exchanges with our colleagues at the Virginia Merrill Bloedel Hearing Research Center, for which all of our faculty are affiliated. This relationship consists of regularly scheduled journal clubs, a colloquium series, and our Au.D. students have the opportunity to conduct their research projects in the labs at Bloedel.

The Center for Human Development and Disability (CHDD) is an integral part of our program. The Leadership Education in Neurodevelopmental and Related Disabilities program at the [University of Washington](#) (UW LEND) is located at the CHDD, a University Center for Excellence in Developmental Disabilities (UCEDD). The UW LEND is a graduate level [interdisciplinary training](#) program that prepares students to assume leadership roles in their respective fields and insures a high level of interdisciplinary clinical competence in providing health and related services for children with neurodevelopmental disabilities and their families. There is a long-standing relationship between the LEND program at CHDD and the SPHSC department at the University of Washington. Faculty members in SPHSC serve as discipline leaders at CHDD. Faculty and staff at CHDD serve as professors, lecturers and clinical supervisors of both audiology and speech-language pathology student-trainees. Historically,

audiology students have completed all of their pediatric clinical training as part of the LEND program at CHDD.

Our department has recently developed a relationship with the Department of Music Education to educate students regarding music and noise exposure. We were also invited to discuss the effects of noise with a student group associated with the UW Dental program. At the student organization's request, 35 students were seen in our clinic for earmold impressions taken by Au.D. students and their clinical supervisors.

In terms of research, Dr. Tremblay has a long-standing collaboration with investigators at the Rotman Research Institute (at the University of Toronto), a center of excellence for aging where MEG facilities are available for research. Au.D. and Ph.D. students have benefited from this collaboration by learning about the procedures and outcomes, and/or contributing to the experiments and publications.

We are hoping to increase the presence of auditory habilitation for the pediatric population which has recently been evolving through our Aural Rehabilitation clinic. There is a shortage of clinicians and scientists in this specialty area. With this addition, it would allow us to create a specialty program that would permit more interaction and cross training with students in the Departments of Linguistics, and Psychology, as well as the College of Education.

- **How does the unit work with junior faculty to maximize their success?**

Each junior faculty member is assigned a committee of two or three senior faculty mentor-advisors. The senior faculty members will eventually serve as the tenure/promotion committee, but in the early years of a new appointment, their role is to meet with the junior faculty member regularly to review progress and to offer advice for further progress. In addition, both committee members make themselves available to assist the junior faculty member in whatever way possible (e.g., reading and offering comments on manuscripts and grant applications; advising on issues related to funding or research methodology; observing and evaluating teaching). A junior faculty member's teaching and service loads are adjusted so they can devote their time to getting their research programs off the ground while preparing high-quality course materials. This system has been very successful in enhancing the professional development of junior faculty members and preparing them for successful lines of research and teaching, as well as successful tenure.

- **What specific strategy has the unit employed to recruit, and support the career success of, faculty members from under-represented groups? To what extent has the unit been successful in diversifying its faculty ranks?**

Increasing cultural diversity has been a long-standing goal in the Doctor of Audiology program. This goal, however, has been difficult to achieve when compared to our Department's success in diversifying our undergraduate and graduate student ranks. Professorial faculty searches have been few and far between and any opportunities to diversify have been limited by the make up of our applicant pools. In our most recent professorial hire, five years ago, in spite of our efforts,

we were unable to recruit a faculty member from an underrepresented group. We are currently in the process of identifying potential candidates to hire into a vacant position on our professorial faculty for the Au.D. program and are encouraged that the applicant pool contains at least one individual from an underrepresented minority group. We are working closely with our Divisional Dean in the College of Arts and Sciences and the Vice Provost for Minority Recruitment and Retention to help bring about the recruitment of this individual.

As faculty in a Washington State supported institution, we are subject to state law that governs, and specifically prohibits, preferential treatment and/or direct recruitment of minority candidates specifically based on their minority status. Thus, the specific strategies employed in these recruitment endeavors have been almost exclusively word of mouth in addition to seeking out and identifying minority candidates at scientific meetings.

Unit's impact at regional, statewide, national and international levels

The Doctorate of Audiology program and its faculty members at the University of Washington contribute significant regional, statewide, national and international impact in the profession of Audiology. Our goal is to continue our contributions in the area that are outlined in this section.

The National Institute on Deafness and Other Communication Disorders (NIDCD) reports at least 36 million Americans have some degree of hearing loss and only 1 out of 5 individuals in need of amplification actually wears amplification (NIDCD website, <http://www.nidcd.nih.gov/health/statistics/quick.htm>). Additionally, with the "Baby Boomer" generation reaching a point of age-related hearing loss, our profession is experiencing an increased demand for our services. **Unfortunately, our profession is not equipped to meet the increased demand for our services as we are facing shortages in both Au.D. and Ph.D. professionals.** An additional challenge facing our profession is the number of audiologists reaching retirement age. According to Freeman (AudiologyToday, Nov/Dec, 2009, p. 51) "approximately 6000 audiologists (38% of audiologists) will reach retirement age in the next decade." Freeman (2009) also reports that our discipline is training approximately 5500 clinical audiologists each year. **The increased demand for our services coupled with a decrease in the number of audiologists reflects the continued demand for AuD training programs.** Our program provides an opportunity for students to obtain an Au.D., a Ph.D. or a combined Au.D./Ph.D. In addition, our program is the largest PhD training program in the country for Speech and Hearing Sciences. With the introduction of the combined Au.D./Ph.D. program, several students have enrolled in this joint degree program. Our impact nationally is providing a quality program which continues to fill the pipeline of qualified audiologists and researchers to meet the rising demand of the hearing impaired population.

Regional/State contributions:

At a regional level, the University of Washington is the only program in Washington state granting an Au.D. degree. Undergraduate degrees are available in Communication Disorders/Speech and Hearing Sciences at Western Washington University, Washington State University, Eastern Washington University, Portland State University and University of Oregon. Our program provides an opportunity for interested students to remain in the Northwest to

complete their Au.D. training, at a program ranked in the top 5 nationally. **We are the only Au.D. granting program on the west coast, aside from one Au.D. program in California and one Au.D. program in Idaho.** The cross-dependencies of the in-state and out of state programs provide geographical diversity in our Au.D. students. The fact that we have a variety of in-state and out of state students contributes to our success in placing these students in their fourth year rotation.

Additionally, the presence of Au.D. training program in Washington state also serves to provide quality hearing healthcare in the region since our graduates often choose to reside in the Northwest after completing their degree. Other areas with Au.D. programs, including Eastern Washington and Oregon often report challenges recruiting audiologists to their regions.

An additional regional impact comes in the services provided through the Audiology section of the University of Washington Speech and Hearing Clinic. The Speech and Hearing Clinic is an integral part of the Au.D. training program which provides in-house training for the development of clinical skills. One service provided in this clinic is the provision of hearing aids through the Northwest Lion's Hearing Aid Bank (HAB). The HAB and two work study positions are funded by the Northwest Lion's Foundation for Sight and Hearing. These students work with audiologists within the Speech and Hearing Clinic, and with audiologists across Washington state in order to link donated/refurbished hearing aids to those patients who financially qualify for hearing aid assistance. The impact of this program is far-reaching to those in our community who would otherwise be unable to afford hearing aids to improve their ability to communicate.

Au.D. graduate students have provided clinical services for "Healthy Hearing", a hearing screening program within the Special Olympics International (SOI) Healthy Athlete initiative since 2003. This clinical work takes place under the supervision of Professor Richard Folsom, Washington State Clinical Director for the SOI Healthy Hearing program. Each year, Dr. Folsom takes 20 to 25 Au.D. students to the Washington Special Olympics (SOWA) summer games and provides clinical services for 200 or more special athletes through hearing screenings, counseling, and community referrals. The SOWA Healthy Hearing initiative is an important outreach aspect of the Audiology program in the Department of Speech and Hearing Sciences. This outreach serves the citizens of Washington State by improving access and health care for special athletes as well as educating Au.D. students about the special needs of, and how to communicate with, and care for, people with developmental disabilities.

Additionally at the state level, Kristiina Huckabay is currently fulfilling a 3-year term as President-elect, President and Past-President for the Washington State Academy of Audiology, a statewide organization representing audiologists. She is also mentoring the newly formed University of Washington Chapter of the Student Academy of Audiology (a national organization of students enrolled in Au.D. programs).

National contributions:

At a national level Dr. Kelly Tremblay serves as the Assistant Editor of the Journal of Academy of Audiology, the Program review committee and Editorial Board Member of the American Auditory Society and the Central Auditory Neuroscience Editor of Ear and Hearing. She has

also served (2002-2005) as the Associate Editor of American Journal of Audiology. Since 2000 she has written a monthly publication, “A Moment of Science” in the Audiology Today journal, a publication of the American Academy of Audiology. She is the Scientific Advisory Ad Hoc reviewer for grants for the National Institute on Deafness and other Communication Disorders (NIDCD), National Science Foundation (NSF) and Medical Research Council in the United Kingdom. She was also named a Fellow of the American Speech Language Hearing Association (ASHA) in 2008 and serves as an Ad Hoc reviewer for numerous journals. At the regional and state level, she is an invited speaker at professional meetings and serves on many University of Washington committees, including the Faculty Senate.

At the national level, our adjunct faculty member, Dr. Patrick Feeney is fulfilling a 3-year term with the American Academy of Audiology (AAA) as President-elect, President and Past-President. Dr. Feeney has also served as the Program Chair for the AAA convention, the Chair of the Research Committee for AAA and coordinator of the Division 6, Hearing Disorders, Research and Diagnostics of the American Speech-Language-Hearing Association (ASHA). A visiting faculty member, Dr. Thomas Littman has served on the Board of the American Academy of Audiology and on the Government Relations Committee for the Washington State Academy of Audiology. In addition, Kristiina Huckabay was chosen to attend the Future Leaders of Audiology Conference sponsored by the American Academy of Audiology to recognize leadership skills and provide additional support towards future leaders in the profession of Audiology. She is also a member of the Publications Committee for AAA.

Two of our faculty members (Martha Harney and Kristiina Huckabay) attended the “Gold Standards Summit: Transforming Clinical Education in Audiology”, sponsored by the American Academy of Audiology. This conference gathered representatives from 65 of the 73 Au.D. programs in the country to address critical issues affecting Au.D. training programs.

In order to fulfill the statewide and national shortage of pediatric audiologists, Richard Folsom, Ph.D. and Lisa Mancl, M.S. recently developed a program to increase pediatric training through the Pediatric Audiology Trainee Emphasis (PATE) for Doctor of Audiology students in the Department of Speech and Hearing Sciences at the University of Washington. A major focus of PATE will be involvement of long-term trainees in the LEND program at The Center on Human Development and Disability (CHDD). This specialized program will provide funded positions for Audiology trainees with the additional clinical training, didactic coursework, and research experience to prepare them to serve in leadership roles in their field. CHDD is one of the nation’s largest and most comprehensive interdisciplinary service, research, and training centers focusing on children and adults at risk, or who have established developmental disabilities. Audiologists currently are limited in their abilities and numbers to serve the number of infants and young children being diagnosed with hearing loss. The shortage of qualified pediatric audiologists is one of the leading barriers to diagnosis and intervention of hearing loss in infants and children. There are a number of reasons why infants do not receive audiologic follow-up, but one consistent challenge is the availability of qualified pediatric audiologists. Clearly, there is a need for more pediatric audiologists to serve the needs of this growing population, both in Washington State and nationally. The PATE program is our attempt to bridge this gap between this supply and demand issue.

International contributions:

The unit's international impact includes Martha Harney, who is serving on the Board of the Global Foundation for Children with Hearing Loss. As part of that role she is developing a teacher training program to be held at the Thuan Am Center for Disabled Children in South Vietnam in July, 2010. Additionally, Dr. Julie Bierer has been involved with publishing and reviewing for numerous peer reviewed publications in international journals and has been invited to present at international conferences. Additionally, Dr. Tremblay participated on the organizing committee for the International Symposium for Cochlear Implants in Children, 2009.

Dr. Tremblay has a long-standing collaboration with scientists at the University of Toronto (Rotman Research Institute) as well as visiting student(s) from Université libre de Bruxelles. These international collaborations have resulted in joint grants and publications.

PART B

UNIT-DEFINED QUESTIONS

The 4-year practice doctorate degree in Audiology (Au.D.) is offered by the Department of Speech and Hearing Sciences and was put into place because of new certification standards established by the American Speech-Language Hearing Association (ASHA), our national accreditation body. This new program completely replaced the Department's Masters of Science degree program in Audiology. The first year of the Au.D. program went into effect Autumn quarter of 2004.

There is no undergraduate component to the Au.D. degree and applicants need not have majored in Speech or Hearing; however, the Dept. of Speech and Hearing Sciences is actively involved with undergraduate students through course offerings, independent studies, and mentoring. Through these experiences, undergraduate students are introduced to information related to the theory, application, and profession of Audiology. For these reasons, the current academic review focuses on the Au.D. graduate degree program and as requested by the Graduate School, will yield information pertaining to the:

- 1. quality of instruction, research, and public service;*
- 2. value to students' general education and preparation for society;*
- 3. role within the University and effectiveness in fulfilling that role;*
- 4. resource requirements;*
- 5. future objectives and changes necessary to achieve them.*

To help determine where the unit is headed, what opportunities the unit wishes to pursue, and what goals the unit wishes to reach, it is important for us to identify our current strengths and weaknesses. Because the Au.D. program is a new degree for all institutions across the nation, one way to conduct this review is to compare our performance to our past ratings in addition to comparing our progress to peer programs across the nation. Traditionally, our peers have been

recognized according to rankings put forth by the US News and World Report – Graduate Schools - Audiology (<http://grad-schools.usnews.rankingsandreviews.com/best-graduate-schools/top-audiology-schools/rankings/>). Currently the University of Washington is ranked #3 out of an existing 73 Audiology degree programs in the nation. For the past few decades, our Master’s degree program has been ranked in the top 5 so we will choose 4 additional top ranked schools for comparison. These institutions include: Vanderbilt University, University of Iowa, University of Texas-Dallas, Washington University – St. Louis.

With the recently mandated changes we, as well as our peer schools, have undergone significant changes. To determine the effectiveness of the changes made to our program, it is important to recalibrate ourselves so we know how we are doing compared to our peer institutions in terms of: 1) student recruitment and retention, 2) evaluating quality of instruction and student performance (didactic and clinical competency) according to student performance, external placements, and successful ASHA certification, 3) faculty workload distribution and use of alternative resources, 4) opportunities for student research and public service. These topics were identified because they are the areas in which all institutions are finding challenges and with the obtained information, we will be able to identify our strengths and weaknesses from which future objectives will be defined. Ultimately, our goal is to continue to be one of the strongest Au.D. programs in the nation.

#1) Student recruitment and retention

Our current Au.D. program is highly self-funded through Professional and Continuing Education with some professorial faculty and staff dependent on these fees. This funding situation puts some pressure on the Au.D. program to maintain a specific enrollment number in order to be sustainable. Because of the limited number of clinical rotation sites, UW Speech and Hearing Clinic and lab space, the current number of students admitted into our program each year is 12. A concern is that the UW Au.D. program has not substantially grown in terms of FTEs compared to other programs in the nation, and to do so would involve either raising tuition fees or increasing the number of students being admitted each year. Both of these options have the potential for a reduced return by pricing ourselves outside a competitive tuition range, and/or being unable to place students in clinical training environments. For these reasons, it would be helpful to know how many students are being accepted into our peer programs, the current cost of tuition, and if funding is being offered by the institution to help offset tuition expenses.

- a) What is the # of applications received at the UW since the inception of the Au.D. program?
- b) How do these numbers compare to the other top”5” schools in the nation?
- c) Compared to other top “5” institutions, how many students who are initially invited, accept?
- d) Compared to other top “5” institutions, how many in-state vs. out-of-state students accept?
- e) Compared to other top “5” institutions, how many students are accepted to the Au.D. program?

- f) Compared to other top “5” institutions, what is the total cost of an Au.D. degree?
- g) Compared to other top “5” institutions, what financial opportunities are offered to Au.D. students to offset the total cost of the Au.D. degree?

#2) Evaluating quality of instruction and student performance (didactic and clinical competency) according to student performance, external placements, and successful ASHA certification.

A challenge to all institutions has been to ensure that the additional curriculum put in place is effective at preparing students for a career in Audiology. This is especially true now that the 4th year training is conducted off-site. This means students need to meet a certain level of competency before being permitted to work with patients off-site. A challenge to all programs has been devising a way to evaluate student competency at different stages of the student’s program. Course grading systems are effective in identifying weak students in the didactic (scholastic) portion of the academic program; however, assessing clinical competency can be more subjective. In the last year, the UW faculty has put in place a series of practical/clinical exams to meet this challenge. It would be beneficial to determine if this evaluation method is achieving what it was intended to do, and how other programs have met this need. It would also be helpful to clarify how we define student competency (graduate rates, passing national praxis exams, etc) in relation to other programs. It is also important to acknowledge that it has been a challenge to expand the course curriculum with limited FTE’s. It would therefore be helpful to evaluate the content of our core curriculum, in relation to others, and determine if there are areas in need of improvement.

To evaluate our quality of instruction and determine where we are going in terms of didactic and clinic achievement:

- a) How many students graduate from our program relative to the other top “5” institutions each year?
- b) How many students successfully complete the ASHA praxis certification exam each year?
- c) How does each institution define and evaluate clinical competency?
- d) How does each institution define scholastic competency?
- e) How does our 4-year curriculum review compare to other institutions?
- f) Review progression of Au.D. courses to determine if the order/progression of clinic and didactic are optimal in order to prepare students for external rotations.

#3) Faculty workload distribution and use of alternative resources.

The structure of many Au.D. programs has changed in order to meet the new ASHA standards and accommodate the increased number of students and courses. To accommodate the increased number of students and curriculum many institutions have hired additional faculty, some programs have closed, and others have found alternative resources to compliment the existing staff. Given our limited number of FTE’s it would be helpful to compare how other programs

have accommodated the increased need for clinical tracking, student placement, and classroom teaching. Compared to other top “5” programs:

- a) How many courses are taught by faculty within and outside of the home department?
- b) Is on-line instruction available to students and are there efforts to expand web-based technology for distance learning?
- c) Are short courses used to fill voids in instruction?
- d) Are specialty certification programs offered?
- e) Are financial resources allocated to supplement teaching needs such as guest lecturers?
- f) What is the teaching load of all faculty members?
- g) Do clinical experiences take place within the home department, or within the community, at each stage of the program?
- h) How is student supervision managed?
- i) How are state-of-the-art materials and equipment, for student training, funded?
- j) Given the current and anticipated shortage of Audiologists, is there room for program expansion in terms of space and funding?
- k) What is the composition of faculty in terms of: a) professorial vs. lecturer, b) full-time vs. part-time.
- l) What is the department climate in terms of cultural diversity?

#4) Research and Outreach

The Department of Speech and Hearing Sciences prides itself as being one of the largest Ph.D. training programs in our profession. Within this environment, a perceived strength of the UW’s Au.D. program is that Au.D. students have the opportunity to be exposed and/or participate in research. It is a strength that we believe separates our Au.D. program from others. It is also a mechanism for recruiting new Ph.D. students, a mission that is very important considering the well publicized shortage of clinician scientists (Au.D./Ph.D.). With that said, given the recent changes to programs across the country, it would help us to know what research opportunities are currently being offered to students in other programs. This point is important because it has the potential to impact student recruitment into both Au.D. and Ph.D. programs. To maintain this standard, and to ensure that this practice can be maintained, it would be helpful to determine if we are still providing exceptional research opportunities compared to our peers. In addition to creating and sharing research ideas, an important component to every training regime is translating theory into practice and public service. Therefore, another educational opportunity for our students is creating the link to outreach and service within our community. Given our FTE status, this has been an area we have been challenged to meet consistently. Currently we provide outreach within the University (education and training of other departments), as well as through local affiliations with the Lion’s Club and Special Olympics. However, outreach aimed at the local aging community would give students the ability to familiarize themselves with the living arrangements and communication demands of seniors while potentially attracting new clientele for clinical service. Increased clinical services can result in additional revenue. This point is important because increased profits could be used to generate additional FTEs. To

assess how we are doing in terms of outreach and research, and if new ideas can be gleaned from peer programs, it would be helpful to know:

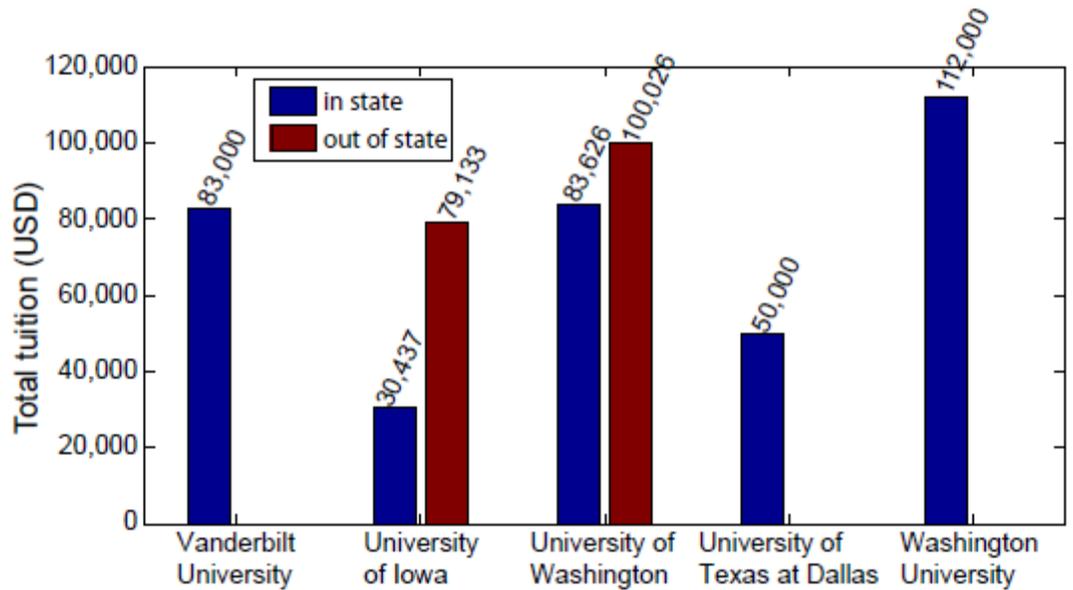
- a) How are students involved in research?
- b) How many students continue to pursue advanced training in research?
- c) How is public service and outreach integrated into student training?
- d) Are students evaluated on their service?

SECTION IV: ANSWERS TO UNIT DEFINED QUESTIONS AND IMPLICATIONS FOR FUTURE DIRECTIONS AND GOALS

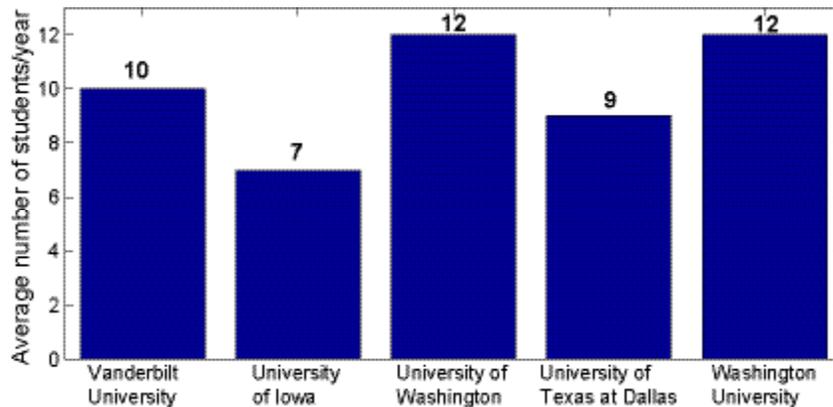
Unit defined questions were reviewed by peer institutions and returned to members of the Audiology Interest Group. In some cases, information was not available but for the most part answers were clear and concise. If needed, answers were confirmed with representatives from the peer institution. A spreadsheet, summarizing the data, was constructed and comparisons were discussed among Audiology IG members. For the most part, the UW program is comparable to peer institutions so below we identify and discuss only areas of discrepancy from our ten year plan.

No significant areas of weakness were identified in section #2 which addressed ‘evaluating quality of instruction and student performance (didactic and clinical competency) according to student performance, external placements, and successful ASHA certification’. We in fact appear to provide more student assessments than average with our two clinical comprehensive examinations and our written comprehensive examinations. This is also true for section #4 in terms of student research experience. **Our mentored 10-credit project exceeds the research requirements of our peer institutions.**

Particularly noteworthy was the information gleaned from sections #1 and #3. **We are the most expensive out of state program for tuition, with little opportunity of providing students with funding.** We are the 2nd most expensive program among our peers in terms of in state tuition. We are competitive in terms of offering hourly work study positions, but are not competitive in offering tuition waivers/stipends. **We are one of the largest programs, with a typical admission of 12 students per year.**

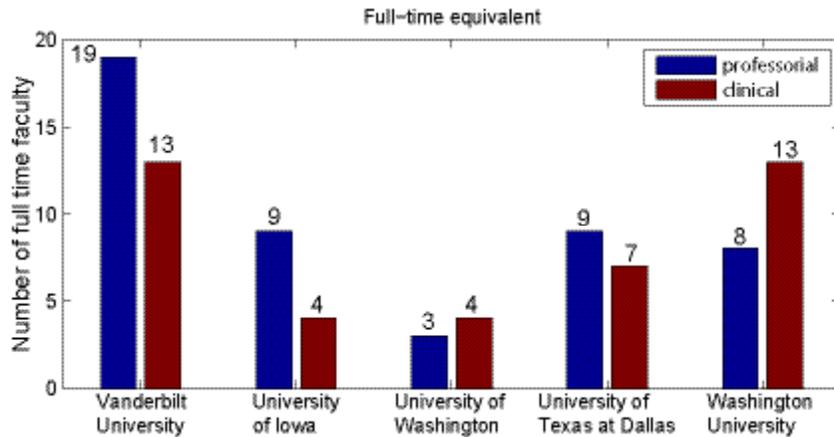


Tuition expenses for each peer institution.



Number of students enrolled in each Au.D. program.

Despite being one of the largest programs in terms of students served, we are the smallest in terms of Faculty FTEs. **The data show a stark contrast in terms of the number of professorial faculty (9-18 across the 4 institutions) as compared to the University of Washington (3).** With 4 clinical faculty FTEs we fall on the low end of the range of clinical FTEs in other programs (range 3.5-15). The clinical faculty discrepancy might in part relate to where the degree is housed because more clinical faculty are employed when the AuD program is part of an existing medical center. At the UW, our teaching clinic is housed in the SPHSC department and is separate from the medical school.



Number of FTEs at each institution.

With a shortage of faculty it is understandable that we are more heavily reliant on external instructors to teach required courses within the Au.D. program. At the UW, 35% of the courses are taught by external instructors while some of our peer programs use outside instructors to cover approximately 10 to 14% of their coursework. Two programs do not use outside instructors at all. Despite the FTE difference between institutions, we continue to offer a competitive program that meets and exceeds national standards. With that said, compared to our peers we have identified desired areas to expand our curriculum to broaden our Au.D. students knowledge and increase our competitiveness with other programs. These areas include: specialty training in pediatric auditory rehabilitation and electrophysiologic testing.

FUTURE DIRECTIONS AND GOALS

The Audiology professorial faculty shortage impacts many aspects of our program that go beyond outsourcing instruction. It limits the ability to mentor the research component of the Au.D. degree, and limits the number of people who can apply for NIH and NSF grants that can be used to support all aspects of the Au.D. program. It also presents a heavy burden of time taken away from research in order to administer the Au.D. program. These final two points are important because as previously described; statistics show an increasing demand for Audiologists. While some institutions continue to grow and report having adequate space and facilities to accommodate growth, the UW Audiology program does not. **Our most pressing goal is to fill the current professorial vacancy which will provide the opportunity to increase revenue through indirect costs (NIH/NSF grants) and redistributing workload amongst current faculty.** While it is a goal to increase the number of Professorial FTEs within the Au.D. program, we recognize that financial support through the College of Arts and Sciences is limited at this time. Growth will therefore be dependent on increased revenue sources either through student tuition and/or revenue from clinical services.

After conducting this assessment and reviewing tuition costs at our peer institutions, **we no longer believe raising tuition costs is an option.** We need to find alternative ways of increasing revenue and redistributing the work load on existing faculty. Some options include:

1) Revisiting the Au.D. research project. This aspect of the program is a valued strength that separates the UW from our peers, given the rich research environment here on the UW campus.

But the requirement of having a UW SPSHSC faculty member serve on a committee for each of the 40 enrolled students is not feasible. **2)** Evaluate ways in which the Audiology community might be more involved in the training of UW Au.D. students. If it is unlikely that the number of FTEs within the Audiology program will grow to be competitive with other programs, then perhaps we can enlist the support of adjunct faculty in allied UW programs. Possibilities include sending students to outside placements (e.g., UW Otolaryngology, Children's hospital) earlier in their program. A benefit to the students would be experiencing a greater diversity of patients and disorders earlier in their training while freeing up SPSHSC clinical faculty to take on more tasks that would facilitate program growth. Two targeted areas for growth are electrophysiology and pediatric rehabilitation. **3)** After reviewing other peer programs, one goal that emerged is to develop and offer a specialty certification in pediatric habilitation. We currently receive funding through a LEND program that could be used for this purpose. With the addition of a pediatric habilitation specialist on staff, we could increase this component of our training program and provide funding for students who partake in this certification program. This addition might also be a method for increasing Au.D. revenue through NIH grants, outreach, private and state funds (e.g., United Way, Dean's fund, and other philanthropic means). **4)** Assuming the ability to increase professorial FTEs it may be possible to increase the number of students, which in turn would increase tuition revenue. **5)** Another source of revenue is through clinical services and the hearing aid dispensary. It will be a delicate balance to free up clinical supervisors time in a way that does not impact clinical revenue. For this reason, it will be important to encourage growth in a way that is revenue generating. Examples include increasing the number of billable services as well as revisiting current UW SPSHSC Au.D. billing practices.

To ensure that the UW Au.D. program continues to be a top ranked training institution, the following goals have been set.

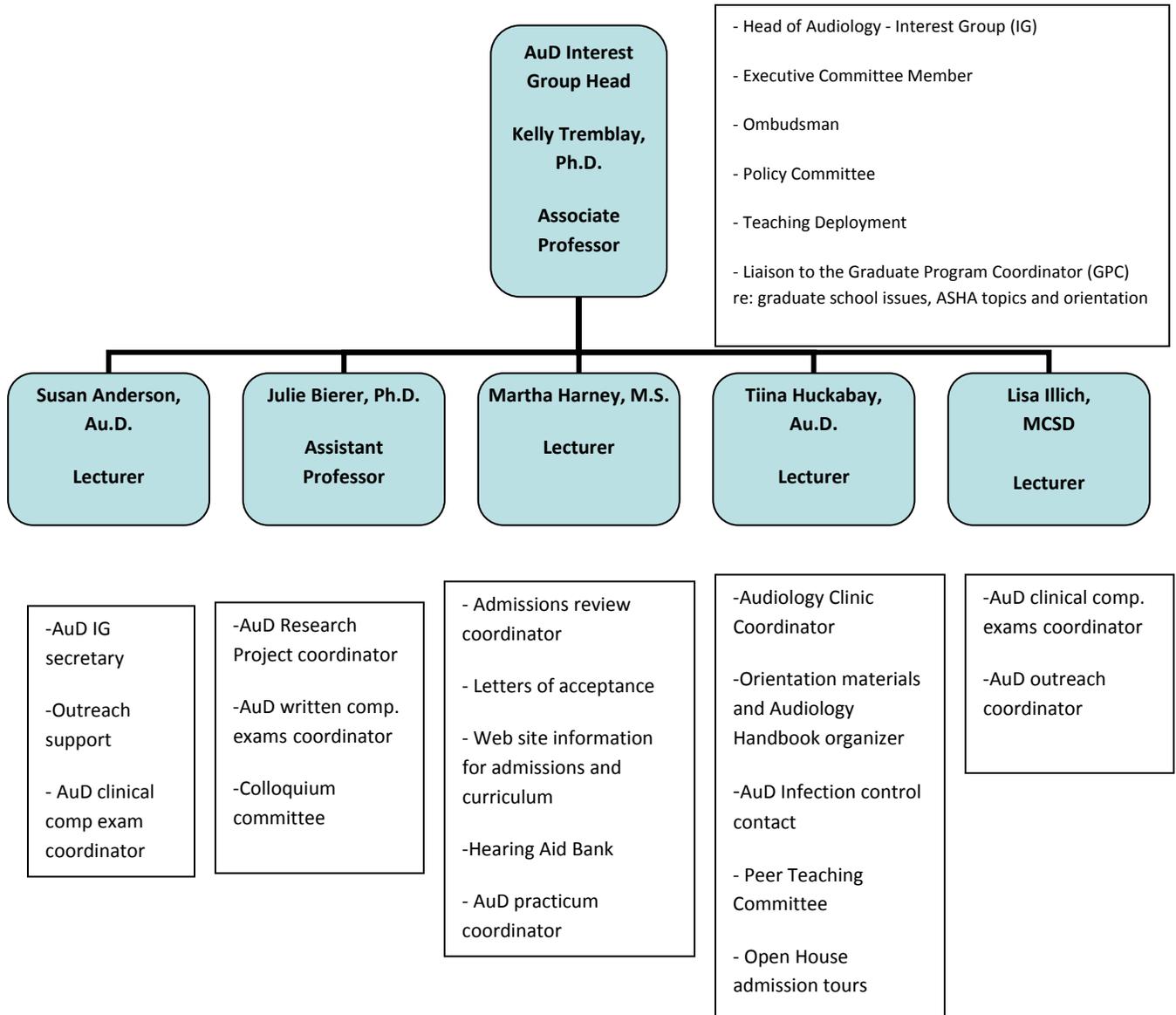
GOALS:

- Conduct curriculum review every 2nd year to ensure national standards are being met.
- Expand professorial faculty by recruiting a Ph.D. level person who can provide training and research in the area of pediatric rehabilitation and amplification
- Expansion of clinical services to include electrophysiologic testing and additional training and clinical experience with pediatric aural habilitation
- Obtain updated instrumentation such as electrophysiologic and otoacoustic emissions equipment
- Outreach to further expand our client base within the UW Speech and Hearing Clinic
- Further our alliance with UW affiliates (Harborview, Seattle Children's Hospital and UW Medical Center) to facilitate real world clinical experiences earlier in the student's clinical program
- Continue to strengthen our development funding opportunities to recruit and sustain top students to our Au.D. program
- Annually review billing practices to ensure appropriate processes for a dynamic teaching clinic
- Determine a way to ensure tuition expenses remain at a competitive level as compared to other institutions in the nation

Appendix A

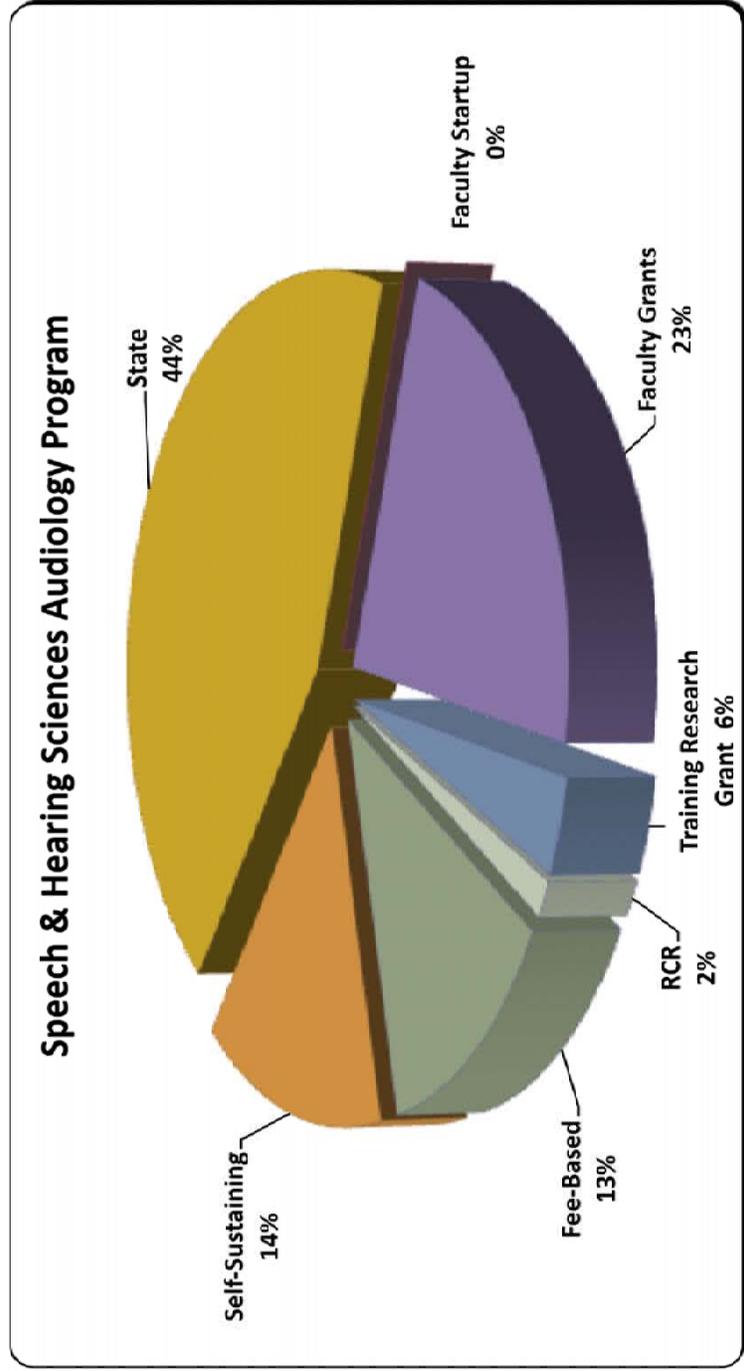
2009-2010 Au.D. Administrative Organization

Richard Folsom, Ph.D.
Department Chair



Appendix B.1. Department of Speech and Hearing Sciences funding sources for Doctor of Audiology Program. Budget summary for **2009-2011 biennium** (actual and projected).

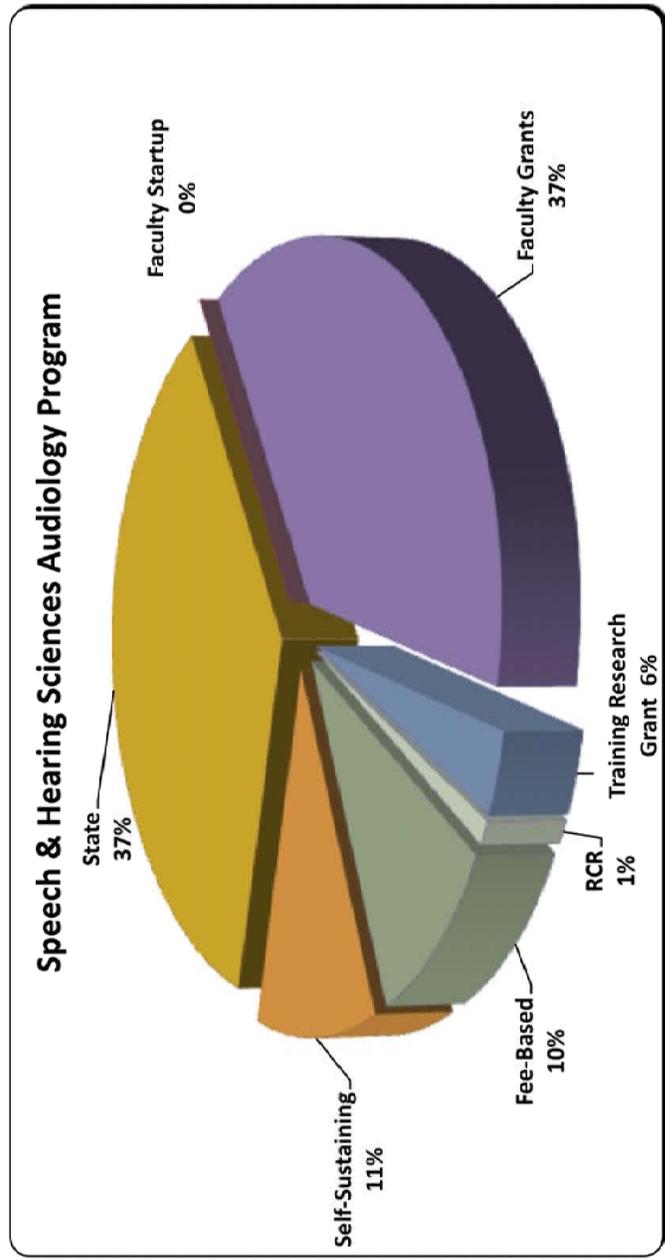
Funding Source	Amount
Fee-Based	\$ 341,402
Self-Sustaining	\$ 384,433
State	\$ 1,186,911
Faculty Startup	\$ -
Faculty Grants	\$ 607,807
Training Research Grant	\$ 103,595
RCR	\$ 41,031



Budget Summary: 2009 - 2011 Biennium

Appendix B.2. Department of Speech and Hearing Sciences funding sources for Doctor of Audiology Program. Budget summary for **2007-2009 biennium** (actual).

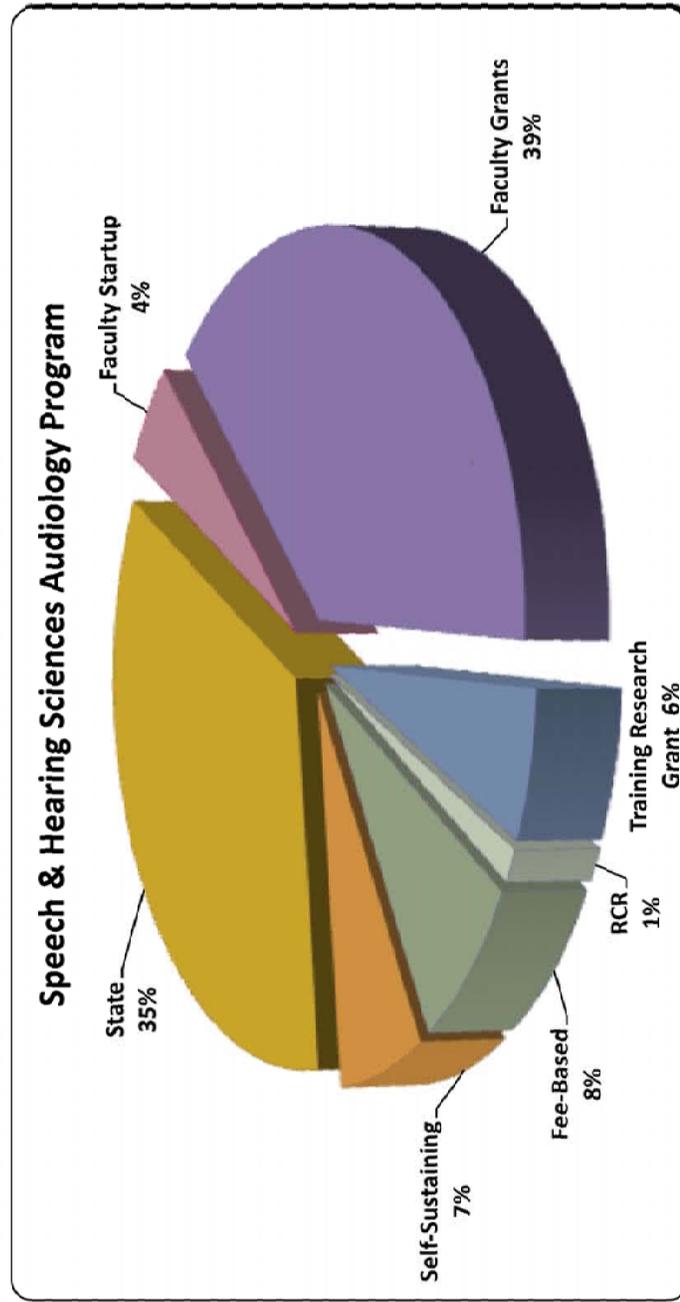
Funding Source	Amount
Fee-Based	\$ 355,807
Self-Sustaining	\$ 373,236
State	\$ 1,315,772
Faculty Startup	\$ -
Faculty Grants	\$ 1,312,868
Training Research Grant	\$ 131,473
RCR	\$ 39,623



Budget Summary: 2007 - 2009 Biennium

Appendix B.3. Department of Speech and Hearing Sciences funding sources for Doctor of Audiology Program. Budget summary for **2005-2007 biennium** (actual).

Funding Source	Amount
Fee-Based	\$ 250,616
Self-Sustaining	\$ 209,101
State	\$1,076,275
Faculty Startup	\$ 140,000
Faculty Grants	\$1,197,707
Training Research Grant	\$ 188,501
RCR	\$ 44,000



Budget Summary: 2005 - 2007 Biennium

Appendix B.4. Department of Speech and Hearing Sciences budgeted expenditures (actual and projected) for Doctor of Audiology Program.

Expenditures summary for **2005-2007, 2007-2009, and 2009-2011 biennia.**

Audiology State Funds: Permanent & Temporary*					
<u>Object Code</u>	<u>Description</u>	<u>Biennium 05-07</u>	<u>Biennium 07-09</u>	<u>Biennium 09-11</u>	
01-10	Faculty Salaries	\$722,683	\$933,882	\$804,990	
01-30	Auxiliary Teaching Staff Salaries	\$89,492	\$95,877	\$98,884	
01-60	Classified Staff Salaries	\$105,111	\$120,870	\$85,630	
01-70	Professional Staff Salaries	\$96,855	\$102,672	\$151,737	
01-80	Temporary Staff Salaries	\$6,725	\$13,085	\$7,781	
03	Other Contractual Services	\$31,178	\$32,987	\$27,641	
05	Supplies and Materials	\$16,595	\$10,248	\$10,248	
06	Equipment	\$7,636	\$6,151	\$0	
Totals		\$1,076,275	\$1,315,772	\$1,186,911	
*centrally supported benefits not reflected in these numbers					

Appendix C: Information about Faculty

SPHSC Professorial Faculty

Bierer, Julie; assistant professor; faculty; cochlear implants, psychophysics;

Affiliate: Bloedel hearing Research Center

Folsom, Richard; professor; faculty; pediatrics, auditory evoked potentials

Adjunct Professor: Pediatrics; Affiliate: Bloedel hearing Research Center

***Souza, Pamela**; associate professor; faculty; hearing aids, psychoacoustics

Affiliate: Bloedel hearing Research Center

Tremblay, Kelly; associate professor; faculty; adult assessment, brain plasticity

Affiliate: Bloedel hearing Research Center

*resigned 2009; position to be filled 2010

SPHSC Clinical Faculty

Anderson, Susan; lecturer; faculty; adult assessment, amplification

Huckabay, Kristiina; lecturer; faculty; adult assessment, amplification

Harney, Martha; lecturer; faculty; adult assessment, aural rehabilitation

Illich, Lisa; lecturer; faculty; aural rehabilitation

Mancl, Lisa; professional staff; staff; pediatric assessment, auditory evoked potentials

Appendix D: HEC Board Summary

A. Documentation of continuing need, including reference to the statewide and regional needs assessment

The need for this degree remains unchanged from the rationale established in the 2002 document to create the AuD program. The 4-year practice doctorate degree in Audiology (Au.D.) is offered by the Department of Speech and Hearing Sciences to meet new certification standards established by the American Speech-Language Hearing Association (ASHA), our national accreditation body. The Au.D is now the nationally recognized entry degree for audiology and therefore this new program completely replaced the Department's Master's of Science degree program in Audiology. The first year of the Au.D. program went into effect Autumn quarter of 2004.

There is no undergraduate component to this Au.D. degree and applicants need not have majored in Speech or Hearing; however, the Dept. of Speech and Hearing Sciences is actively involved with undergraduate students through course offerings, independent studies, and mentoring. Through these experiences, undergraduate students are introduced to information related to the theory, application, and profession of Audiology.

Impact at regional, statewide, national and international levels

The Doctorate of Audiology program and its faculty members at the University of Washington contribute significant regional, statewide, national and international impact in the profession of Audiology. Our goal is to continue our contributions in the area that are outlined in this section.

The National Institute on Deafness and Other Communication Disorders (NIDCD) reports at least 36 million Americans have some degree of hearing loss and only 1 out of 5 individuals in need of amplification actually wears amplification. Additionally, with the "Baby Boomer" generation reaching a point of age-related hearing loss, our profession is experiencing an increased demand for our services. Unfortunately, our profession is not equipped to meet the increased demand for our services as we are facing shortages in both Au.D. and Ph.D. professionals. An additional challenge facing our profession is the number of audiologists reaching retirement age. According to Freeman (AudiologyToday, Nov/Dec, 2009, p. 51) "approximately 6000 audiologists (38% of audiologists) will reach retirement age in the next decade." Freeman (2009) also reports that our discipline is training approximately 5500 clinical audiologists each year. The increased demand for our services coupled with a decrease in the number of audiologists reflects the continued demand for AuD training programs. Our program provides an opportunity for students to obtain an Au.D., a Ph.D. or a combined Au.D./Ph.D. In addition, our program is the largest PhD training program in the country for Speech and Hearing Sciences. With the introduction of the combined Au.D./Ph.D. program, several students have enrolled in this joint degree program. Our impact nationally is providing a quality program which continues to fill the pipeline of qualified audiologists and researchers to meet the rising demand of the hearing impaired population.

At a regional level, the University of Washington is the only program in Washington state granting an Au.D. program. Undergraduate degrees are available in Communication Disorders/Speech and Hearing Sciences at Western Washington University, Washington State University, Eastern Washington University, Portland State University and University of Oregon. Our program provides an opportunity for interested students to remain in the Northwest to complete their Au.D. training, at a program ranked in the top 5 nationally. We are the only Au.D. granting program on the west coast, aside from one Au.D. program in California and one Au.D. program in Idaho. The cross-dependencies of the in-state and out of state programs provide geographical diversity in our Au.D. students. The fact that we have a variety of in-state and out of state students contributes to our success in placing these students in their fourth year rotation.

In order to fulfill the statewide and national shortage of pediatric audiologists, our unit recently developed a program to increase pediatric training through the Pediatric Audiology Trainee Emphasis (PATE) for Doctor of Audiology students in the Department of Speech and Hearing Sciences at the University of Washington. As indicated earlier, a major focus of PATE will be involvement of long-term trainees in the LEND program at The Center on Human Development and Disability (CHDD). This specialized program will provide funded positions for Audiology trainees with the additional clinical training, didactic coursework, and research experience to prepare them to serve in leadership roles in their field. CHDD is one of the nation's largest and most comprehensive interdisciplinary service, research, and training centers focusing on children and adults at risk or who have established developmental disabilities.

B. Assessment information related to expected student learning outcomes and the achievement of the program's objectives

As indicated in more detail elsewhere in this report, students entering this program pass several benchmarks for assessing outcomes and measuring competency. These assessments include the clinical comprehensive exams, a written comprehensive exam, a mentored research project and acquisition of clinical knowledge and skill areas. The program has had a high completion rate of approximately 95%. All students who have completed the program have gone on to pass the national Praxis exam in Audiology.

C. Plans to improve the quality and productivity of the program

As an outcome of this self-study, our program has identified the following 10 year goals that we believe will enable us to remain competitive and sustainable as a center of excellence in Au.D. training:

- Conduct curriculum review every 2nd year to ensure national standards are being met.
- Expand professorial faculty by recruiting a Ph.D. level person who can provide training and research in the area of pediatric rehabilitation and amplification

- Expansion of clinical services to include electrophysiologic testing and additional training and clinical experience with pediatric aural habilitation
- Obtain updated instrumentation such as electrophysiologic and otoacoustic emissions equipment
- Outreach to further expand our client base within the UW Speech and Hearing Clinic
- Further our alliance with UW affiliates (Harborview, Seattle Children’s Hospital and UW Medical Center) to facilitate real world clinical experiences earlier in the student’s clinical program
- Continue to strengthen our development funding opportunities to recruit and sustain top students to our Au.D. program
- Annually review billing practices to ensure appropriate processes for a dynamic teaching clinic
- Determine a way to ensure tuition expenses remain at a competitive level as compared to other institutions in the nation

Number of instructional faculty, students enrolled, and degrees granted over last three years (Autumn-Summer)

	2006-07	2007-08	2008-09
FTE Instructional Faculty	7.6	8.6	8.6
FTE Graduate Teaching Assistants	4.5	4.5	4.5
Degree Program	Au.D.	Au.D.	Au.D.
Headcount of enrolled students	30	30	32
Number of Degrees Granted	0	0	0

*There have been no graduates of the four-year Au.D. program to date. The first cohort for the four-year program began in Fall 2006 and will graduate in Spring 2010.