

Division of Speech and Hearing Sciences

Department of Allied Health Sciences
School of Medicine
The University of North Carolina at Chapel Hill

Graduate School Program Review

February, 2002

Self Study Report

PROGRAM OVERVIEW

<Section Coordinators: Roush and Crais>

The University of North Carolina at Chapel Hill was the first state university to admit students. It was chartered in 1789 and formally opened in 1795. The University of North Carolina at Chapel Hill (UNC-CH) is now part of a multi-campus system. In 1971, the North Carolina General Assembly redefined The University of North Carolina to include sixteen public senior institutions as constituent institutions of The University of North Carolina. Under this redefinition, the Board of Trustees of the six campus consolidated university became the Board of Governors. This body was designated The University of North Carolina with the President as the chief executive officer. Each constituent institution of The University of North Carolina has a Board of Trustees and a Chancellor as a chief administrative officer. Each Chancellor is responsible to the President of The University of North Carolina.

UNC-CH is the most comprehensive institution in North Carolina, both in the range of its programs at all levels and in the breadth of its specialized research and public service programs. The University's fourteen colleges and schools provide instruction in more than a hundred fields, offering 95 baccalaureate, 175 master's, and 109 doctoral programs, as well as professional degrees in dentistry, medicine, pharmacy, law, and library science. Within UNC-CH there are two academic divisions: the Division of Academic Affairs and the Division of Health Affairs.

The Division of Health Affairs is comprised of five schools: Dentistry, Nursing, Pharmacy, Public Health, and Medicine. Within the School of Medicine, the primary administrative units are departments, including the Department of Allied Health Sciences. Department chairs report to the Dean of the School of Medicine.

Dr. Lee McLean chairs the Department of Allied Health Sciences. The Department includes undergraduate programs in Clinical Laboratory Sciences and Radiologic Sciences. A certificate program is offered in Cytotechnology. There are entry-level master's programs in speech-language pathology, occupational therapy, physical therapy, and rehabilitation counseling. There is an advanced master's program in physical therapy. Within the Department of Allied Health Sciences there are three doctoral programs, two in the Division of Speech and Hearing Sciences (Ph.D. and Au.D.) and a third, interdisciplinary Ph.D. program in Human Movement Science, based in the Division of Physical Therapy. The Department includes approximately 60 faculty members and a total enrollment of approximately 350 students.

As a graduate program, the Division of Speech and Hearing Sciences also functions within the context of the Graduate School at UNC-CH. The Graduate School of the University of North Carolina at Chapel Hill was established in 1903. The Administrative Board of the Graduate School was established in 1922 by vote of the graduate faculty. The Administrative Board, with the Dean of the Graduate School as Chair, is charged with the immediate direction of the Graduate School. The Administrative Board is vested

with the power to address all matters affecting graduate education, to admit members to the teaching faculty of the Graduate School, and to authorize curricula and courses carrying graduate credit. Work toward advanced degrees at UNC-CH proceeds under policies and regulations established by the graduate faculty through the Administrative Board of the Graduate School.

Brief History of the Division of Speech and Hearing Sciences

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Master of Science (M.S.) Speech-Language Pathology

The M.S. degree, designed to prepare entry-level clinical practitioners in speech-language pathology, has graduated hundreds of clinicians over the 30 year history of the program. The program is consistently ranked among the top 12 (out of xxx accredited programs nationwide) in three major polls, two

Doctor of Audiology Degree (Au.D.)

In 1997, the Council on Professional Standards of ASHA finalized new standards for obtaining the Certificate of Clinical Competence in Audiology. Beginning in the year 2012, a *doctoral degree will be mandated* as the minimum degree requirement for those who apply for certification. Although the type of doctoral degree is unspecified, the professional Doctor of Audiology degree (Au.D.) is widely recognized as the preferred credential for students seeking a career in clinical practice. In response to these changes in accreditation standards and in recognition of the need to provide more comprehensive graduate education for entry-level practitioners, DSHS submitted a proposal for authorization to plan an AuD in April of 19xx. Authorization to establish the new program was granted by the UNC Board of Governors in November, 2000. The master's degree in audiology has been discontinued and the first cohort of Au.D. students will be enrolled in the fall, 2002. This is the first and only Au.D. program in North Carolina.

Doctor of Philosophy (Ph.D.).

There is a well documented, critical shortage of Ph.D.- level faculty to fill current and projected vacancies in communication disorders academic programs in North Carolina and across the United States. That fact, combined with unique strengths in the areas of early intervention at UNC-CH, motivated the Division to submit a proposal for authorization to establish a new Ph.D. in Speech and Hearing Sciences, with a focus on communication disorders in early childhood. The Ph.D. and Au.D. proposals were submitted simultaneously; both were approved by the UNC Board of Governors in November 2000. The Ph.D. program will admit its first cohort of students in fall, 2002.

Mission, Goals, and Objectives

<DSHS Mission Statement>

Analysis

UNC-CH, the oldest state-supported institution of higher education in the United States, is internationally acclaimed as a leading academic center of scholarship, research, creative activity and humanistic service. In accord with this heritage and stature, it is the expectation of The Graduate School at UNC-CH that all of its professional programs be nationally ranked on the basis of demonstrated educational excellence. To this end, the Division of Speech and Hearing Sciences is committed to <text needed here reflecting mission statement>. The mission statements of the Division and University are clearly consistent and compatible.

Need/Demand for Entry-Level Speech Pathologists and Audiologists

In June, 2001, the Cecil G. Sheps Center conducted a year-long investigation which culminated in a report, "The Speech-Language Pathology Workforce in North Carolina," to the Council for Allied Health in North Carolina. The conclusion of this comprehensive study was that the overall supply of, and demand for, speech-language pathologists in North Carolina was in a state of balance, and there were no indicators that there would be an oversupply of clinicians in the foreseeable future. Therefore, the recommendation was to maintain the status quo with respect to the number of graduate programs and the enrollments in those programs preparing entry-level clinicians for the profession. Formal investigation of the audiology workforce has not yet been conducted; however, there is evidence of significant need for clinical audiologists in all employment settings...<need more – get data from AAA> There are over 10,000 certified audiologists in the U.S. and over 4,000 students currently enrolled in master's programs. Although audiologists certified prior to January of 2012 will not be *required* to earn the doctorate, many will choose to upgrade their credentials. Master's-level audiology programs will be phased out in the coming years as the deadline for doctoral entry-level approaches (2012). In recent years, DSHS has received 25-35 applications per year to fill 5-7 master's-level openings. With the new Au.D. program beginning in fall, 2002, the number of applications currently stands at a record high of xx. Moreover, the quality of the applicants is remarkably high...

Need/Demand for Academic Ph.D.'s in Speech and Hearing Sciences

The health care and academic communities have, for many years, been especially concerned with current and projected shortages of speech and hearing sciences personnel and the academic faculty to teach them. For the past five years, reports from the ASHA, the Council of Academic Programs in Communication Sciences and Disorders, US Bureau of Health Professions, and numerous media have focused on the critical shortage of qualified faculty to teach in professional speech and hearing science programs and to conduct much-needed research in the treatment of communication disorders. For example, based on survey results collected by the Council of Graduate Programs in Communication Sciences and Disorders, there was a 58.5% *increase* in the number of Masters degrees granted in the United States between 1981 and 1996, but a 47.5%

decrease in the number of doctoral degrees granted over the same 15 year period. Indeed, there is a projected shortage of 150 teacher-scholars in higher education that will directly affect personnel preparation in speech and hearing sciences (Karr, 1999). In addition to needed changes in the number of professionals prepared for faculty positions, the content and quality of that preparation has also been of concern.

The Ph.D. at UNC-CH will be one of the few in the nation to focus on communication disorders in early childhood. We anticipate that the favorable employment outlook will be matched with considerable demand from prospective students. Over the past 10 years, scores of prospective students from North Carolina and across the country have contacted Division faculty to inquire about the availability of a Ph.D. program on the Chapel Hill campus. Two to three students per year from the DSHS master's program elect to go directly into a Ph.D. program elsewhere; many others pursue a Ph.D. within three years of graduation. Some of those wishing to remain at or return to UNC-CH have designed programs to meet their needs via the Schools of Education or Public Health, but most have found it necessary to pursue their doctoral studies elsewhere, usually out of state. We have been gratified by the number of inquiries regarding the new Ph.D. program and anticipate enrolling x Ph.D. students in the fall, 2002.

Interdisciplinary Activities

The Division of Speech and Hearing Sciences is well respected within the Department of Allied Health, School of Medicine and University, and is engaged in many formal and informal collegial relationships across the Department, School and University. Among the formal relationships are:

1. DSHS faculty (Crais, Harrison, Sturm, Watson), and student participation in a DOE early intervention training grant with the Division of Occupational Science and School of Education. DSHS students are grant trainees and participate in a variety of interdisciplinary educational experiences. DSHS faculty teach within the interdisciplinary courses and help administer the grant program. The grant has been re-submitted in 2001 with interdisciplinary collaboration extended to include student and faculty from the Division of Physical Therapy.
2. DSHS faculty and student participation in the Center for Development and Learning. One of our core faculty (Roush) serves as Audiology Section Head for this program and a speech-language pathology faculty member (Domby) is employed there three days/wk. Each year two DSHS student receives a LEND fellowship from the CDL and participate in interdisciplinary clinical activities and leadership development activities.
3. A DSHS faculty member (Watson) is a member of the Neuroscience Research Center and participates in interdisciplinary projects through the Center.
4. A faculty member (Watson) was co-project director on a recently concluded interdisciplinary grant with the Division of Occupational Science funded by Cure Autism Now. This is a multi-year project that involves faculty and students in an infant behavior project focused on early detection of autism.

5. Two faculty members (Crais and Roush) are Fellows of the Frank Porter Graham Child Development Center. Roush is a co-investigator on two extramural projects based at FPG
6. <sturm unch>
7. <hooper aging projects>
8. DSHS employs a joint faculty member (Mayo) who serves as a speech-language pathology coordinator of the Craniofacial Team in the School of Dentistry, while maintaining a half-time commitment to teaching and research in DSHS.
9. Faculty and student participation in UNC-CH's Institute on Aging. Faculty have received pilot funding for projects through the Institute's small grant program. In 2000 a curriculum track was developed in DSHS to enable our students to receive the Certificate in Aging offered by the Institute. This is an interdisciplinary program
10. Second year students may take an elective course in the fall semester in another program or department. Electives have been taken in the Program on Aging, School of Social Work, School of Education and School of Public Health.
11. faculty developed and taught in DAHS interdisciplinary courses.

Inter-institutional Perspective

DSHS has played a leadership role in the creation and development of the state's first multi-campus degree program. The North Carolina Consortium for Distance Education in Communication Sciences and Disorders (Consortium), ...

Previous Evaluations

<Roush is writing this section>

ASHA CAA
Grad Sch review

CURRICULUM

<Section Coordinators: Watson, SLP, and Mundy, Audiol>

Master of Science (M.S.) in Speech-Language Pathology and Audiology

As reflected in our mission statement, the goals and objectives of DSHS are consistent with both the missions of the institution and accreditation standards. Four common central themes, summarize the consistency between the mission of the program, the mission of the institution (UNC-CH and the UNC-CH School of Medicine), as well as the ASHA/CAA standards. The mission statements and the accreditation standards all focus on the importance of providing a graduate experience that includes research, academic education, and clinical education to:

- Provide the foundations of practice, including an understanding of ethics, legal and regulatory matters, cultural sensitivity, the ability to interact effectively with patients and families from diverse cultures, universal precautions, and normal and abnormal development in the pertinent fields of practice;
- Prepare healthcare practitioners (e.g. speech language pathologists and audiologists) in the prevention, screening, and identification of relevant disorders and identification of persons at risk for these disorders;
- Enable practitioners to conduct comprehensive diagnostic evaluations of clients (including multidisciplinary assessment as appropriate), counsel clients and families, and discuss findings and their implications in a culturally sensitive manner; and to
- Enable health care practitioners to effectively collaborate with family members and other service providers in developing and implementing family-friendly and culturally sensitive treatment plans, and in evaluating and documenting progress and outcomes.

A. Areas of content knowledge students are expected to master

Within the Master's degree program in speech-language pathology, students are expected to exhibit knowledge of communication processes and development, as well as in disorders of communication, as required to effectively prevent, diagnose, and treat disorders of speech language, and swallowing. Further, students are expected to acquire knowledge of hearing and hearing disorders to prepare them to participate in the identification of individuals who may have hearing loss, and to participate in speech and language assessment and treatment for these individuals as appropriate. Every student is expected to have a foundation of knowledge in these areas that covers the lifespan, and includes an understanding of cultural diversity as it relates to normal and disordered communication processes. Further, students are expected to master knowledge of ethical, legal, and administrative issues that are encountered in the field of speech-language pathology. Beyond the core areas of knowledge, students

select an emphasis area in which they acquire more in-depth knowledge. These emphasis areas are: child communication disorders, adult communication disorders, and lifespan communication disorders.

B. Thinking, writing, and research skills that students should acquire

Students should acquire the ability to synthesize knowledge regarding normal communication systems and processes and information about disorders of communication. Further they are expected to integrate information gained in the classroom setting with the knowledge and experiences they acquire in their clinical practicum settings.

The Master's program stresses the acquisition of verbal and written skills that result in clear communication with clients, family members of clients, other professionals directly involved in the treatment of clients, and a broader audience of multidisciplinary professionals or consumers with whom professionals in the field of speech-language pathology are likely to interact.

In the area of research, every student is expected to have a foundation in statistics and research design that enables the student to become a knowledgeable and critical consumer of research that has implications for the clinical practice of speech-language pathology.

C. Professional skills students are expected to acquire

All Master's degree students in speech-language pathology are expected to acquire the following professional skills:

- using a variety of screening and diagnostic assessment tools;
- interpreting assessment information appropriately;
- making recommendations for further assessment or treatment;
- establishing functional goals for treatment;
- measuring progress toward goals;
- documenting assessment and treatment as appropriate to the practice setting;
- including clients and significant others as full collaborators in the clinical process, remaining sensitive to cultural differences that may affect service delivery;
- collaborating with other professionals across disciplines in serving clients;
- engaging in case management activities as needed to meet the needs of the client;
- maintaining the highest ethical standards in providing speech and language services; and
- advocating for the general welfare of individuals with communication disorders.

D. Mechanisms to achieve these goals

Our primary mechanisms for achieving these goals are academic coursework and clinical practicum. These primary mechanisms are supplemented by a number of other mechanisms, including annual multicultural workshops, our recently established Yoder Symposium, annual Health Affairs Interdisciplinary Case Conferences, activities of our local chapter of the National Student Speech-Language-Hearing Association, and student participation in state and national professional organizations, interdisciplinary training grants, and ongoing faculty research. Each of these mechanisms is described in more detail below.

Academic Coursework

The prerequisites for beginning the Master's program in speech-language pathology include a minimum of 15 hours of coursework in basic human communication processes, including the anatomic and physiological bases, physical and psychological bases, and linguistic and psycholinguistic bases. In addition, students are expected to have taken an introductory course in audiology at the undergraduate level, and an introductory course in statistics. If any of these courses have not been completed prior to admission into the Master's program, they must be completed at the beginning of the program. All of our Master's candidates in speech-language pathology take 13 courses as part of the core curriculum.

Beyond their core coursework, each student identifies an area of emphasis, and completes additional requirements to gain more in-depth knowledge of the field consistent with that emphasis area. The emphasis areas are child communication disorders, adult communication disorders, and lifespan communication disorders.

Clinical Practicum

We have found that students gain confidence and competence rapidly when they are as actively involved as possible in practicum/clinical education from the outset of the first semester. Thus, each semester the students are given clinical assignments to enhance their didactic experiences. Our students begin practicum under in-house faculty with close supervision, generally for the first two academic semesters (Fall and Spring, Year 1), and gradually progress to greater independence. They continue with practicum assignments each semester (including summer) during their enrollment in the program. These assignments are made based on the skill level of each student and the focus of his/her training. Practicum opportunities under in-house faculty typically include the following: diagnostic evaluations of children and adults, language group for preschool-age children, pragmatic skills group for elementary-age children with autism, individual therapy for children and adults with disorders of speech and language, intervention for adults with autism in a residential program, evaluations and treatment for individuals with augmentative communication needs, foreign accent reduction therapy, and communication skills groups for college athletes at UNC-CH. Students typically begin off-campus placements/externships in the summer of their first year, although students who demonstrate especially strong clinical skills in the fall semester of Year 1 may begin external rotations during their first spring under mentors who have committed to providing the higher levels of support and supervision needed by a first year student. Externships include

placements with supervisors in hospitals, rehabilitation facilities, nursing homes, home health, private practices, child development centers, schools, and developmental evaluation centers. Across a year's time, approximately 50 different externship sites participate in providing clinical experiences for students in the program. Each student typically is assigned to practicum in four distinctly different settings (including in-house clinic and externships) across their time in the program. Students must receive a minimum of 350 direct service clinical hours in order to obtain a master's degree in Speech Language Pathology according to ASHA guidelines. Most of our students well exceed those minimum required hours.

Multicultural Workshops

Students participate annually in multicultural workshops designed specifically for speech-language pathology and audiology students as well as students in other health care professions. Our faculty have taken a leadership role in organizing these workshops, which typically take place early in the fall to serve as a way to orient students to the important ways in which multicultural considerations impact all aspects of professional practice. Attendance is required for first year students. Within our program, multicultural issues are further infused throughout the curriculum in all academic coursework.

Yoder Symposium

Beginning in 2000, we instituted an annual event to honor David E. Yoder, who retired that year as our department chair. This event brings speakers of national prominence in the field of speech and language pathology to our campus. Students are encouraged to attend the day-long event, and can do so at minimal cost.

Health Affairs Interdisciplinary Case Conferences

A Health Affairs Interdisciplinary Education Grant has made it possible for our second year students to participate on interdisciplinary teams comprising students representing medicine, dentistry, nursing, occupational therapy, physical therapy, social work, pharmacy, audiology, and speech-language pathology. This experience uses standardized patients. With guidance from a faculty facilitator, the interdisciplinary teams interview the patient, discuss the case, and develop management strategies. Students then process the experience by reflecting on the interactions of their team, and the benefits and challenges of interdisciplinary practice.

National Student Speech-Language-Hearing Association (NSSLHA) Chapter

The local chapter of NSSLHA is an active, student-led organization that has initiated a variety of activities contributing to the academic and professional preparation of the students. For instance, the group sponsored a series of sessions on patient and family counseling in speech-language pathology and audiology, contacting and scheduling appropriate local faculty to present. Another NSSLHA-organized activity has been a review session to help prepare second year students for their comprehensive examinations and national certification examination.

State and National Professional Organizations

Students are encouraged to join and participate in our state and national professional organizations as student members, and the majority of them do so each year. Through these organizations, they receive newsletters and journals, and student rates for conventions. In addition, each year a number of our students either present their own research at these conventions, or participate in joint presentations with faculty.

Interdisciplinary Training Grants

We have been fortunate during the period covered by this review to have received funding for two interdisciplinary training grants. Prior to these grants, the DSHS had eight years of continuous funding for training grants in early intervention. The first of the most recent projects funded 30 Master's level students across the four disciplines of speech-language pathology, audiology, occupational therapy, and special education. The focus of the grant under the direction of Dr. Elizabeth Crais and Dr. Harriet Boone of the School of Education was to prepare students with a specialization in working with young children with low incidence disabilities: autism, hearing loss, or severe physical impairment. The students participated in interdisciplinary coursework, practica, and research experiences within the emphasis area they selected. The second grant under the direction of Dr. Melody Harrison and Dr. Harriet Boone also focused on working with young children with disabilities and included an emphasis in preparing students to be "social inclusion" specialists. Social inclusion refers to the practice of facilitating the participation of children with disabilities into all types of educational, social, and recreational activities throughout the community. This grant funded 27 Master's level students across speech-language pathology, audiology, special education, and school psychology. The students participated in specialized interdisciplinary courses, practica, and research opportunities.

Faculty Research

Some of our graduate students are involved in faculty research as research assistants, and through this, acquire direct experience with research on a variety of topics related to psychoacoustics, hearing science, speech physiology, and speech and language development, disorders, assessment and intervention. Specific faculty projects on which students have participated include: an investigation of the role of speed of processing and short term memory functions in the auditory word recognition abilities of children with specific language impairment (Montgomery); project focusing on the speech characteristics of children with cleft palate (Mayo); studies of otitis media, and of children with Fragile X syndrome (Roberts & Roush); longitudinal study of gestural and lexical development in typically developing children (Crais); examination of the early development of children with autism (Crais & Watson); investigations of speech production in patients with dysarthria and apraxia (Haley); investigations related to hearing and hearing loss in children (Roush & Harrison); evidence review of the reliability and validity of assessment instruments in speech and language disorders (Watson & Hooper); and studies of literacy and technology as they apply to students with severe disabilities (Sturm & Yoder).

E. Mechanisms to Determine When and How These Goals Are Being Met

Academic Assessment Mechanisms

Faculty members determine the most appropriate mechanisms for assessment within their respective academic courses. Many faculty use comprehensive written examinations as one mechanism for assessment. Other mechanisms used to evaluate students' synthesis of course content include written papers or projects, case analyses, and in-class or web-based student presentations.

As discussed in further detail below, all students must pass a written comprehensive examination of the content covered in the core curriculum of the program to be eligible for graduation.

Clinical Assessment Mechanisms

The skills of each student are assessed on an ongoing basis from the first day of practicum, up to and throughout their externship placements. Students are provided with written and/or oral feedback on their clinical performance on a weekly basis. Student progress, strengths, and weaknesses, as well as suggestions for improvement and specific goals are addressed in written evaluations and discussed in person via midterm and final conferences (one on one) between each student and their respective supervisors. Common assessment tools are used to evaluate students' performance in diagnosing and treating communication disorders across all practicum sites, both in-house and externships (see Appendix [\[redacted\]](#)). In addition, the Clinic Coordinator, who has overseen the students' in-house placement, and the Practicum Coordinator, who assigns off-campus placements, discuss each student's readiness for an off-campus site before externship placements are made.

F. Degree Requirements

Structure and requirements of the program

For the Master of Science in Speech-Language Pathology, students must complete all pre-professional coursework, including 27 hours in basic sciences (6 hours in physical sciences and math, 6 hours in behavioral or social science, and 15 hours in basic human communication processes) as well as an introductory course in statistics and an introductory course in audiology. Students take 13 courses (39 hours) as part of the core curriculum, and are also required to be registered for 1 hour of practicum during each term of their enrollment during the two-year program (Fall Year 1, Spring Year 2, Summer Sessions I & II of Year 1, Fall Year 2, and Spring Year 2). Thus, the core requirements total 45 credit hours. The core curriculum is designed to provide a common foundation of knowledge pertaining to normal and impaired human communication development across the lifespan, as well as in research design and interpretation. Courses are sequenced within the Master's program to initially provide students with more basic levels of information (e.g., SPHS 241 Neuroanatomy and SPHS 345 Principles of Diagnosis and Intervention) that are built upon in later courses (e.g., SPHS 342 Aphasia or SPHS 344 Adult Motor Speech Disorders).

Students are required to take SPHS 281 Psycholinguistics in their final semester to help them integrate the applied information that is the focus of most of the Master's level coursework in the program with theories of human communication processing, and develop a greater understanding of and appreciation for the complementary nature of research on normal communication and communication disorders.

Course work and lab experiences are designed to enable students to learn and incorporate the scientific bases of the professions into their academic experiences. Many of the academic courses utilize case study applications and a variety of other assignments and approaches to encourage students to apply their scientific knowledge to clinical assessment and intervention. All graduate level courses require students to explore and become familiar with current research literature and current topics discussed in academic courses (e.g. recommendations from clinical research) are often closely correlated with their implementation in clinical practicum. All Master's students are required to take SPHS 201: Introduction to Research in Speech and Hearing (and a prerequisite statistics course). Through SPHS 201, students learn about experimental and descriptive research designs in speech and hearing sciences including both group and single subject designs and they apply their knowledge through a research project completed as part of this course. Students can elect to complete their research requirements for the Master's degree by either doing a thesis or taking an additional course in research. Many students elect to take another Division course, The Computer as a Research Tool (SPHS 350), which provides state-of-the-art hands-on instruction in the use of computers in research and clinical practice, including an assignment requiring practical application.

In addition, students must complete the requirements for an emphasis in child communication disorders, adult communication disorders, or lifespan communication disorders. An additional 5 or 6 courses are required for each emphasis area, adding an additional 13 to 18 credit hours, depending on the emphasis area selected.

Within the Division of Speech and Hearing Sciences, students getting are required to be registered as full-time students throughout the two years of the program. In addition to meeting the academic requirements, students pursuing a Master's degree in Speech-Language Pathology are also required to meet the requirements of the American Speech-Language-Hearing Association with regard to supervised clinical practice.

Child	Adult	Life-Span
YEAR ONE, FALL		
343 PHONOLOGICAL DEV.	343 PHONOLOGICAL DEV.	343 PHONOLOGICAL DEV.
345 DIAGNOSTICS & INTERV.	345 DIAGNOSTICS & INTERV.	345 DIAGNOSTICS & INTERV.
241 NEUROANATOMY	241 NEUROANATOMY	241 NEUROANATOMY
263 LANG. ASSESSMENT 0-5	350 Computer as a Research Tool OR Elective/Selective	263 LANG. ASSESSMENT 0-5 or 362 LANG. & LEARN. DIS.
350 Computer as a Research Tool OR EDSP 230 Families & Teams	TBD Elective/Selective	350 Computer as a Research Tool OR Elective/Selective
304 Practicum	304 Practicum	304 Practicum
YEAR ONE, SPRING		
201 RESEARCH in SP & HRG	201 RESEARCH in SP & HRG	201 RESEARCH in SP & HRG
354 DYSPHAGIA	354 DYSPHAGIA	354 DYSPHAGIA
342 APHASIA	342 APHASIA	342 APHASIA
206 Infants & Toddlers OR Selective/Elective	344 Adult Motor Speech	344 ADULT MOTOR SPEECH OR Selective/Elective
304 Practicum	383 SPICE 304 Practicum	304 Practicum
YEAR ONE, SUMMER SESSIONS		
Selective/Elective (346 STUTTERING)	Selective/Elective (346 STUTTERING)	Selective/ Elective (346 STUTTERING)
304 Practicum (both sessions)	304 Practicum (both sessions)	
YEAR TWO, FALL		
317 PROFESSIONAL CONSID.	317 PROFESSIONAL CONSID.	317 PROFESSIONAL CONSID.
347 CHILD NEUROMOTOR	362 LANGUAGE LEARN. DIS. or 263 LANG ASSESSMENT 0-5	347 CHILD NEUROMOTOR or Selective/Elective
362 Lang. & Learning Dis.	204 AUDIOL. REHAB. ADULTS or Selective/Elective	204 AUDIOL. REHAB. ADULTS
207 Preschoolers OR Selective/Elective	Selective/Elective	220 American Sign Language III
304 Practicum (393 Thesis)	304 Practicum (393 Thesis)	304 Practicum (393 Thesis)
YEAR TWO, SPRING		
281 PSYCHOLINGUISTICS	281 PSYCHOLINGUISTICS	281 PSYCHOLINGUISTICS

265 AUGMENTATIVE COMM	265 AUGMENTATIVE COMM	265 AUGMENTATIVE COMM
203 AUDIOL. REHAB. CHILD	352 Cognitive-Linguistic Dis.	203 AUDIOL. REHAB. CHILD or Selective/Elective
Selective/Elective: 264 Language Seminar; 206 Infants & Toddlers		223 American Sign Language IV Selective/Elective
304 Practicum (393 Thesis)	304 Practicum (393 Thesis)	304 Practicum (393 Thesis)

Division of Speech and Hearing Sciences
CORE COURSES for the M.S. in Speech-Language Pathology

345 Diagnostics & Intervention	S1*	362 Language & Learning Disorders OR 263 Lang. Assess & Intervention	S1/S4
343 Phonological Deviations	S1	317 Professional Considerations	S4
241 Neuroanatomy	S1	344 Adult Motor Speech OR 347 Child Neuromotor	S4
201 Research in Speech & Hearing	S2	265 Augmentative Comm.	S5
354 Dysphagia	S2	281 Psycholinguistics	S5
342 Aphasia	S2	203 Audiol. Rehabilitation for Children OR 207 Audiol. Rehabilitation for Adults	S4/S5
393 Thesis (or Non-thesis elective)	S4&5/ S1	304 Practicum	ALL

= 13 core courses & practicum

+ Emphasis courses:

Child Comm. Disorders		Adult Comm. Disorders		Life-Span Comm. Disorders	
263 Language Assess & Interv (+362 Lang. & Learning Dis)		383 Instrumentation (SPICE)**		220 & 223 American Sign Language III & IV	
EDSP 230 Working with Families & Teams		352 Cognitive-Linguistic Disorders		2 Child Selectives not taken as part of the core: 263 Lang Assess. & Inter. 206 Infants & Toddlers 207 Preschoolers 362 Language Learning Dis 264 Language Impair. Child. 347 Child Neuromotor Dis. 204 Audiol. Rehab. Child.	

				349 Oral-Facial Anomalies	
206 Comm Assess & Interv with Infants & Toddlers (Birth-to-Two) OR 207 Comm Assess & Interv for Preschoolers (Two-to-Five)		2 of the following: 349 Oral Facial 346 Stuttering 348 Voice		2 Adult Selectives not taken as part of core: 352 Cognitive-Linguistic Dis 348 Voice 346 Stuttering 344 Adult Motor Speech Dis. 383 Instrumentation (SPICE) 204 Audiol. Rehab. Adults	
2 of the following: 220 & 223 American Sign Language III & IV 349 Oral Facial Anomalies 346 Stuttering 348 Voice 264 Language Impair. Child.		1 Elective		1 Elective	
1 Elective					
Child Comm= 6 courses		Adult Comm=5 courses		Lifespan=6 courses	

Appendix ___ (Benita is working on this) provides course descriptions. Appendix ___ (Benita is working on this) gives information on the frequency of each course, enrollment data for the past five years, and notes on any significant trends in enrollment.

Theses

Students who elect to complete a Master's thesis are encouraged to identify a thesis advisor in the spring of their first year, concurrent with their enrollment in SPHS 201 Introduction to Research in Speech and Hearing. In conjunction with the thesis advisor, the student will develop a research question and identify other potential committee members. Consistent with the policies of the graduate school, the thesis committee consists of a minimum of three members, and the majority of the committee consists of regular members of the Graduate School Faculty. In addition,

the majority of the committee must be drawn from within the program (DSHS) faculty. The student develops a proposal for the thesis under the guidance of the advisor, and distributes a copy of the proposal to all committee members prior to an initial proposal meeting, which generally takes place in the summer following the first year, or in early fall of the second year of the program. In the meeting, the student presents the proposal, and responds to questions from committee members. The committee meeting is viewed as an opportunity for committee members to provide constructive input into the conceptualization and design of the research project. The student is then excused from the room while the committee members discuss whether to accept the proposal, and what changes in the design of the project, if any, are considered essential for acceptance. The student is then called back into the room to be informed of the committee's decision and any recommended or required revisions to the proposal.

The thesis advisor has primary responsibility for guiding the student during the implementation of the research. This includes guidance in securing the necessary approval or exemption from the Institutional Review Board as well as in carrying out the research plan itself. The student is encouraged to consult with other committee members as needed. When the research is completed, the student is responsible for distributing a copy of the written document to each committee member at least one week prior to a scheduled oral defense of the thesis. At this meeting, the student presents the project, and responds to questions from committee members. The student is then excused from the meeting, and the committee members discuss their evaluation of the thesis. The committee votes to accept, accept with revisions, or reject the thesis. If the decision is made to accept with revisions, the essential revisions are agreed upon by the committee members. The student is then asked to return to the meeting and informed of the decision of the committee. In any case in which a thesis is accepted conditional on revisions, the thesis advisor assumes responsibility for assuring that the student makes the required revisions.

Comprehensive Examinations

All students are required to pass a written comprehensive examination in order to be a candidate for the Master's degree. The comprehensive examination is designed to assess the students' knowledge of information comprising the core curriculum of the Master's program in speech-language pathology. Faculty who teach the core courses in the program submit a bank of questions to the comprehensive examination coordinator, who uses these to construct the examination. The examination is administered on one date per semester and is thus taken at the same time by all students who are candidates for graduation in that semester. The examination is scored within 10 days. Any student scoring below 75% on the written exam is required to take an oral examination covering material on which the student was judged to have shown inadequate knowledge.

Other procedures for evaluating the progress of graduate students

Mechanisms for evaluation of academic and clinical performance have been described in previous section. In order to identify concerns that may cut across

different courses and/or clinical experiences, the student roster is reviewed twice each year during a confidential faculty meeting. All faculty members have an opportunity to express any concerns they may have about a student's academic or clinical performance so that appropriate follow-up action/remedies can be discussed and implemented. Typically the student's advisor is charged with discussing the concerns and possible remedies with the student, although other faculty may be involved depending on the nature and source of the concerns. The student and faculty member(s) develop an action plan to address the concerns. Actions might include such things as obtaining mental health counseling, participating in study groups, seeking assistance from the writing center, or reviewing material which has not been previously mastered and is hampering the student's further progress. In rare cases, the student may decide to withdraw from the program and seek other career options. If there are any concerns regarding clinical performance during the student's first year (i.e., as would be immediately evident from a low or failing clinical evaluation grade), then the student is not permitted to have an externship placement until his/her skill levels were satisfactory.

Structure of program compared to programs nationally

Due to the requirements of ASHA governing eligibility for certification in speech-language pathology, programs in this field nationally reflect a considerable degree of structure, and our program is consistent with this. Few programs, however, incorporate different options for specialization at the Master's level, as our program does with its three emphases. This leads to a rigorous academic program, in which students complete between 58 and 63 credit hours for their Master's degree.

Demand for the program

Evidence of a continuing demand for the program is available from a number of sources. First, as indicated in Table [redacted], we have many more applicants each year than we are able to accept into the program.

Table [redacted]: Applicants for the M.S. Degree

	1996	1997	1998	1999	2000
Applied	246	298	287	250	240
Accepted	61	76	72	68	67
Enrolled	33	38	36	43	39

As noted previously, the Cecil G. Sheps Center presented a report, "The Speech-Language Pathology Workforce in North Carolina" to the Council for Allied Health in North Carolina. The conclusion of this report was that the overall supply of, and demand for, speech-language pathologists in the state of North Carolina seemed to be in a state of balance, and there were no indicators that there would be an oversupply of clinicians in the foreseeable future. Therefore the recommendation was to maintain the status quo with respect to the number of training programs and the enrollments in those programs preparing entry-level clinicians for the field.

We believe that the structure of our curriculum permitting specialization in different areas of emphasis has led to increased demand for our program, specifically, and will continue to do so. Even when the overall supply and demand of the workforce is in relative balance, there are specific areas of need that are best addressed by specialized preparation of professionals. One area in which we have focused over the past 10-12 years is in addressing the demand for speech-language pathologists to serve children with communication disorders in a variety of early intervention settings. The 22nd Annual Report to Congress on the Implementation of Individuals with Disabilities Education Act (U.S. Department of Education, 2000) indicated that for children who begin early intervention services between 12 and 24 months of age, the most frequently identified concern was speech/communication, accounting for 49% of the total. For children entering early intervention services over the age of 24 months, speech/communication delays were the identified concern for 75% of the total. There were additional children in both age groups who were referred due to global developmental delays, which would include concerns with speech and communication (p. IV-5). The same report noted the astronomical increase in school-aged children identified with autism, with an increase of over 240% between 1992 (the year that autism was first used as a category for reporting data) and 1998 (p. II-23). Another factor that has recently created increased need for a specialized workforce in speech-language pathology is the implementation of universal newborn hearing screenings, leading to the identification of more children with hearing loss at younger ages. Our program has responded to these specialized needs by successfully competing for training grants and by developing coursework to address the demand for individuals who can serve young children with special needs, including those with low-incidence disabilities such as hearing loss and autism.

Process for course and program review and development

Revision and updating of the content of individual courses is primarily the responsibility of the faculty member(s) teaching each course. Continuing education of the faculty is important in assuring that courses reflect the most current theories, research, and clinical practices of our field. To this end, Division faculty regularly attend state and national conferences in addition to participating in other continuing education activities. Many of the most recent teleconferences with nationally and internationally recognized presenters have been broadcast directly from the UNC-CH campus and were well attended by Division faculty. In addition, Division faculty keep their teaching (both academic and clinical) up-to-date through extensive use of web-based research and ongoing review of the current literature in their respective areas of expertise as well as through their own research.

The Division strives to maintain and constantly upgrade its technology to maintain excellence in academic and clinical education as well as for optimal clinical service and research. Our physical plant is old and aesthetically unappealing. However, the equipment, technology, and service-provision within the Division are state of the art. The Division has, in fact, in many instances, been the first to explore and implement new technologies (e.g. the Division's in-house clinic was the first program in the state of North Carolina to dispense digital hearing aids). The Division's AAC

(augmentative and alternative communications) lab, which is used for patient evaluation and therapy, student education, and research, also implements the latest technologies and is one of the few of its kind in the region. Descriptions of laboratory facilities available for our students and faculty is provided in Appendix ___

The Division faculty engage in a variety of activities to review and update the overall program of study. Review of the program of study is an ongoing endeavor. In 1998-1999 we surveyed our students to get their feedback regarding the program of study, including sequencing of courses in the curriculum and unproductive redundancies across courses. The faculty reviewed the program of study at the same time, with each faculty member summarizing course objectives for each course s/he taught, prerequisite knowledge and skills, nature of course assignments, and contribution of the course to the overall program of study. To assist us in the review process, Martha Arnold, the Director of Curriculum Development at the UNC Center for Teaching and Learning, met with our faculty for two faculty retreats. As a result of this process, a number of changes were made in the program of study, including changing our speech-language pathology emphasis areas to Adult Communication Disorders (from Adult Neurogenic Disorders), Child Communication Disorders (from Child Language Disorders), and Lifespan Communication Disorders (from General). Within each emphasis area, we reduced by one course the number of required classes to complete the emphasis area, and provided students with more opportunities to meet the requirements by selecting classes that would best support their individual career goals and complement other courses taken, rather than requiring every student within an emphasis area take all of the same classes. We revised the content of SPHS 345 (a first semester core class for SLP students) to include principles of intervention as well as of diagnostics. In addition, we re-sequenced several classes in the program of study, and made SPHS 241 Neuroanatomy a required first semester course in our core SLP curriculum, rather than requiring it only for students in the Adult Communication Emphasis area. At the time of the 1998-1999 review, we agreed in principle to conduct a more intensive review and revision of our Master's curriculum, but determined that we would be well-advised to delay that level of review pending the development and outcome of our proposals to establish Au.D. and Ph.D. programs.

In 2001, we surveyed our SLP students to get their evaluation of the advantages and disadvantages of our current emphasis areas. In addition, we surveyed our clinical supervisors to solicit input from them on the prerequisite courses and clinical skills for students placed for practicum at their respective settings, as well as their preferences on the scheduling of practicum. The data from these two surveys have been compiled, and we are in the process of reviewing the implications of the responses for our curriculum, both clinical and academic.

In the spring of 2002, we plan to initiate the full curriculum review of our Master's SLP program to which we agreed in principle in 1998-1999. We are now at a point allowing for the coordination of curricula as appropriate across the Master's, Ph.D.,

and Au.D. programs. In addition, our review will benefit from the new standards for certification in Speech-Language Pathology which will take effect in 2007.

G. Orientation, Advising and Mentoring

Several resources about the program are made available to prospective, admitted, and current students in the speech-language pathology program. These include:

- Division website
- Email communications with the admissions secretary
- Informational letters
- Second year student buddy system
- Fall Orientation
- Academic advising meetings

A Division of Speech and Hearing website (www.med.unc.edu/ahs/sphs/welcome.htm) is available to prospective and current students that provides detailed information about a range of topics. This website offers prospective students information about degree programs, admissions, faculty and staff, research, clinical services, and continuing education. A special section of the website is also designated to provide ongoing information to current students (e.g., student handbook, UNC-CH student resources, office of scholarships and student aid).

Students admitted to the UNC-CH program in speech-language pathology receive a letter outlining core program information. An information session for admitted students is also provided that gives them an opportunity to visit UNC-CH, meet professors, and current students. The professors are introduced to the students and a short presentation is usually given by the faculty. Current students conclude this orientation with a campus tour for admitted students and their family members in attendance. During the spring and summer, admitted students are mailed information about stipends, assistantships or other funding opportunities. Referrals to the Graduate School for alternative funding options are also made. In the spring semester, prior to their arrival on campus, new students are pre-registered for 9 core credit hours. Because evidence of full-time student status is often necessary for financial aid, the pre-registration assists students applying for financial support.

Information about living in the Chapel Hill area is provided by the NSHHLA president. Through the mail prospective students receive suggestions for apartments and possible roommates. Admitted students are also assigned a second year “buddy” who can support them with questions about the speech-language pathology program and local area.

Prior to the onset of classes, first year students receive an orientation to the overall speech and language program. Students are introduced to division faculty and receive an overview of faculty clinical and research interests. During orientation they also obtain information about student and clinic handbooks, transportation services, library resources, clinic services, and the National Student Speech-Language-Hearing Association (NSSLHA). A separate orientation is conducted that provides students with

a detailed overview of clinic services, facilities and procedures. Specific topics addressed include: materials room, research and clinic lab equipment, instrumentation, and clinic procedures.

Each student is assigned an academic advisor upon to entering the program in the fall. During the week prior to fall classes, students meet in small groups with their assigned academic advisor. The academic advisor reviews curricular requirements and course schedules, helps complete the required forms, and answers pertinent questions. Following the initial meeting, academic advisors are available to individual students to assist with advising needs throughout their program of studies.

Web address for the 22nd Annual Report to Congress cited in the section regarding demand for the

Doctor of Audiology (Au.D.)

As stated previously, the move from a Master's Degree in Audiology to the Au.D. is motivated by changes in accreditation standards and the need to provide more comprehensive graduate preparation. This Graduate School program review comes at a point of transition for as we are now in the final semester of the M.S. audiology program. The first Au.D. students will be admitted in the fall of 2002. The following discussion will focus on the Au.D. curriculum. Much of the Master's degree curriculum has been retained and expanded, with some changes in the existing curriculum structure.

The audiology faculty has been engaged in regular meetings throughout the academic year and the curriculum is nearing completion. Recent evaluations of the curriculum have been made in light of instructional recommendations from the American Speech-Language and Hearing Association (ASHA) as well as The American Academy of Audiology (AAA). ASHA Standards and Implementations for the Certificate of Clinical Competence in Audiology list minimum knowledge and skills for the Au.D. applicant for the Certificate of Clinical Competence (Attachment A). **Jim-attachments at end of this document** Faculty members recently evaluated their course/s content in light of these specific knowledge and skills standards. AAA also details specific basic science coursework as well as other general areas of professional instruction (Attachment B). The sequence of courses has also been examined to determine whether any changes were indicated to facilitate student learning.

Design

The design of the audiology curriculum is structured and hierarchical with early course work and clinical practicum serving as a foundation for subsequent academic and clinical work.

Discussion

The curriculum (see Table 1) is sequenced relative to the progression of students' acquisition of knowledge and skills. The coursework required in the first semester of study focuses on fundamental knowledge (*anatomy and physiology SPHS 221; basics of assessment SPHS 310; understanding the impact of hearing loss on individuals SPHS 204; preliminary research design and analysis using computers SPHS 350; clinical observation SPHS 305; and introduction to Deaf culture SPHS 220*). Second semester studies build upon this foundation with in depth coursework related to disorders of hearing (*SPHS 225*), more advanced assessment procedures (*SPHS 314*), fundamentals of remediation through amplification (*SPHS 312*) as well as additional coursework related to speech and language disorders. Second semester students begin applying first semester knowledge as they begin to see clients in clinic under faculty supervision.

Some second year coursework serves as a continuation of content previously introduced (a 2nd hearing aid course *SPHS 313 Hearing Aid Fitting and Dispensing*; 2nd assessment

courses *SPHS 311 Pediatric Audiology* as well as *NEW Auditory Evoked Responses II*). The content from many first and second year courses is synthesized for students in *Audiology Grand Rounds*. The placement of *SPHS 201 Introduction to Research* at the end of the second year provides some guidance as students begin to formulate their research design that will occur during the third year.

	Year One Fall Semester : 15 Credit Hours
SPHS 221	<i>Physiological and Psychological Bases of Hearing 3.0</i>
SPHS 310	<i>Audiologic Assessment I 3.0</i>
SPHS 204	<i>Principals of Aural Rehabilitation 3.0</i>
SPHS 350	<i>Computer Applications in Speech and Hearing 3.0</i>
SPHS 220	<i>Deaf Culture and Sign Language 2.0</i>
SPHS 305	<i>Clinical Practicum Observation 1.0</i>
	Year One Spring Semester : 13 Credit Hours
SPHS 312	<i>Characteristics of Amplification Systems 3.0</i>
SPHS 314	<i>Auditory Evoked Responses I 3.0</i>
SPHS 225	<i>Hearing Disorders 2.0</i>
SPHS NEW	<i>Speech and Language Disorders 3.0</i>
SPHS 223	<i>Sign Language II (elective) 1.0</i>
SPHS 306	<i>Clinical Practicum 1.0</i>
	Year One Summer Sessions: 4 Credit Hours
SPHS NEW	Instrumentation and Calibration 2.0
SPHS 306	<i>Clinical Practicum 1.0</i>
SPHS 306	<i>Clinical Practicum 1.0</i>
	Year Two Fall Semester : 12 Credit Hours
SPHS 313	<i>Hearing Aid Fitting and Dispensing 3.0</i>
SPHS 311	<i>Pediatric Audiology 3.0</i>
SPHS NEW	<i>Auditory Evoked Responses II 2.0</i>
SPHS ????	<i>Counseling and Working with Families 3.0</i>
SPHS 306	<i>Clinical Practicum 1.0</i>
	Year Two Spring Semester: 11 Credit Hours
SPHS 201	<i>Introduction to Research 3.0</i>
SPHS 203	<i>Pediatric Audiologic Habilitation 3.0</i>
SPHS NEW	<i>Educational Audiology 2.0</i>
SPHS NEW	<i>Audiology Grand Rounds 2.0</i>
SPHS 306	<i>Clinical Practicum 1.0</i>
	Year Two Summer Sessions: 6 Credit Hours
SPHS NEW	<i>Central Auditory Processing Disorders 2.0</i>
SPHS 306	<i>Clinical Practicum 1.0</i>

SPHS 208	<i>Cochlear Implants 2.0</i>
SPHS 306	<i>Clinical Practicum 1.0</i>
	Year Three Fall Semester: 10 Credit Hours
SPHS 316	<i>Industrial Audiology & Hearing Conservation 2.0</i>
SPHS 317	<i>Administration and Leadership 3.0</i>
SPHS NEW	<i>Special Topics in Audiology 1.0</i>
SPHS 306	<i>Clinical Practicum 1.0</i>
SPHS 394	<i>Doctoral Research 3.0</i>
	Year Three Spring Semester: 12 Credit Hours
SPHS 318	<i>ENG and Vestibular Assessment 3.0</i>
SPHS 205	<i>Advanced Seminar in Auditory Verbal Therapy (elective) 2.0</i>
SPHS NEW	<i>Business Management and Professional Issues 3.0</i>
SPHS 306	<i>Clinical Practicum 1.0</i>
SPHS 394	<i>Doctoral Research 3.0</i>
	Year Three Summer Sessions: 2 Credit Hours
SPHS 306	<i>Clinical Practicum 1.0</i>
SPHS 306	<i>Clinical Practicum 1.0</i>
	Year Four Fall Semester: 9 Credit Hours
SPHS 306	<i>Clinical Practicum 9.0</i>
	Year Four Spring Semester: 9 Credit Hours
SPHS 306	<i>Clinical Practicum 9.0</i>

Table 1. Au.D. Course Sequence 100 Credit Hours Required (3 CrH electives listed)

The following discussion is included to demonstrate the process by which some course content and placement in the overall curriculum was changed (from the previous Master's curriculum) to more appropriately meet student needs.

SPHS 204 Audiologic Rehabilitation for Adults was previously offered in the fall semester of the second year for Master's Degree Audiology and Speech-Language Pathology students. In obtaining student surveys over several years it became clear that much of the content was redundant for the Audiology students by the time they arrived at their second year. The SLP students, however, had not had this content. A decision was made to move this course into the first year for entering doctoral Audiology students so it would provide an introductory overview of the problems encountered by hearing impaired populations, but to keep it as a second year course for SLP Master's students.

SPHS 312 Characteristics of Amplification Systems was previously offered in the first semester of the first year. Because Master's students were in a two-year-only program and were in off-campus sites during their second year, a push was made to get them familiar with hearing aid technology (as well as other clinical assignments) as soon as possible. This continued in spite of frequent feedback from students that the first semester was overwhelming with the complexity of coursework and clinic responsibilities. When the decision was made to move SPHS 204 into the first year fall semester, a concomitant decision was made to delay the hearing aid coursework (SPHS 312 and SPHS 313) one semester. At the same time, a decision was made to have the first semester clinic assignments (SPHS 306) be observation only. In this way, entering students who had not completed the ASHA observation requirements would have a formalized opportunity to do so by observing a second year student in clinic. A desired byproduct of such an arrangement would be that second year students would have an opportunity to solidify their own clinical skills via informal instruction of first year students, and that entering students would develop social contacts and supports within the program.

Educational Goals/Skills Acquisition

The primary goal of the Audiology program is to educate skilled clinicians, well prepared to enter clinical practice in any setting where audiology services are rendered. The Au.D. program focuses on the development of clinical competencies in both the technical and interpersonal domains. Specific areas of content knowledge students are expected to master are detailed in the aforementioned ASHA Standards and AAA Guidelines. Thinking, writing, and laboratory research skills students should acquire relate primarily to the critical evaluation and synthesis of information from different sources, and communicating appropriately regarding evaluation results and recommendations.

Discussion

Audiology students are expected to master information relevant to the normal processes of hearing and communication as well as information about hearing disorders. Knowledge of normal and disordered processes across the life span will allow graduates to effectively prevent, diagnose and treat disorders of hearing. The four primary teaching areas relate to foundations of audiologic practice, prevention and identification of hearing loss, evaluation of hearing, and treatment of hearing disorders.

Students should be able to evaluate information (patient history, family concerns, test results, etc.) to determine current hearing and communication status and make appropriate recommendations. Students should also be able to describe these results clearly and succinctly in written format that is accessible to other health care providers (physicians, audiologists, speech language pathologists, etc.) as well as to the patient. Students are expected to master basic information about statistics in order to be good consumers of current research literature in Audiology. Students are also expected to demonstrate knowledge of appropriate clinical research models.

Audiology students are also expected to master the following professional skill areas:

- have the knowledge and skills needed to apply state-of-the-art instrumentation, assessment procedures, and intervention strategies.
- have the interpersonal skills necessary to communicate effectively with patients, family members and other professionals representing diverse sociocultural backgrounds.
- provide leadership in the audiology profession.
- model “best practice” for other audiologists across the state and nation.
- be comfortable and effective in an interdisciplinary team environment.
- be knowledgeable and critical consumers of research with the ability to apply research to clinical practice.
- be competent in the management and supervision of support personnel.
- be knowledgeable and competent in the legal, ethical, and business aspects of audiology practice.
- administer hearing conservation programs in a variety of settings including schools and industry.

Several new courses are being added to the curriculum.

New Courses implemented AY 2001-2002

SPHS 208: Cochlear Implants in Children. This 2 credit hour course was added in the summer of 2000 as part of a new DSHS specialty track for speech pathology or audiology students interested in acquiring preprofessional coursework and practicum experiences needed to qualify for certification as Auditory-Verbal Therapists (AVT). The course covers cochlear implant design and candidacy evaluation as well as fitting and programming. The course will be taught by Carolyn Brown, an audiologist and adjunct faculty member who serves as Director of the Carolina Children’s Communicative Disorders Clinic at UNC Hospitals.

SPHS 205: Advanced Auditory-Verbal Therapy. This 2 credit hour course was added in the fall of 2000 as part of a new DSHS specialty track for speech pathology or audiology students interested in acquiring preprofessional coursework and practicum experiences needed to qualify for certification as Auditory-Verbal Therapists (AVT). The course follows our pediatric hearing rehabilitation course, SPHS 204, where AVT principles are introduced. Kathryn Wilson, a speech-language pathologist and certified AVT will teach the course. Ms. Wilson, the Director of the Early Intervention Division in the NC Department of Health, holds an adjunct appointment at UNC-CH.

SPHS XXX: Counseling & Working with Families. This 3 credit hour course was added in the fall of 2000. This course evolved out of a previous Families & Teams course and is taught by Betsy Crais, speech-language pathologist and

DSHS faculty member and Todd Houston, adjunct faculty member and speech-language pathologist.

NEW Courses to be Implemented 2002-2005

Instrumentation and Calibration. This 2 credit hour seminar will be offered in the summer with instruction provided by an experienced electroacoustic technician. Students will acquire hands-on experience in calibration of audiometers and related equipment as well as sound measurements.

Auditory Evoked Responses II. This 3 credit hour course will be added to the curriculum. It will follow an existing course, Auditory Electrophysiology (SPHS 314), providing advanced material and more extensive laboratory experiences including middle and late evoked potentials. John Grose, who teaches SPHS 314, will teach this course.

Seminar in Educational Audiology. This 3 credit hour course will be added to the curriculum. Second year graduate students will attend a weekly seminar with DSHS faculty member Martha Mundy, who is responsible for educational audiology services contracted by the Chapel Hill Carrboro Public School System. Students will work in teams to participate in screening, FM recommendations and verification, provide in-service presentations to teachers and other school personnel who work with deaf and hard-of-hearing children.

Business Management Practices. This 3 credit hour course will be added to the curriculum. Because many students who earn the Au.D. choose to pursue private practice, it is essential that our curriculum include the basic principles of business management. Stephanie Sjoblad, an Associate Professor and Clinic Director with experience in private practice, will teach this course.

Audiology Grand Rounds. DSHS faculty will rotate responsibility for this 2 hour seminar which students will take in conjunction with clinical practicum. A “grand rounds” format will be used to feature case presentations by students, core faculty, adjunct faculty, and clinical supervisors from schools, departments, and centers within and outside UNC-CH.

Special Topics. This one to two credit hour seminar will cover a variety of topics from current developments in tinnitus management, cerumen removal, latest programmable hearing aid technology and any other appropriate topics important to include prior to the clinical internship. DSHS faculty will rotate responsibility for this seminar.

Speech and Language Disorders. This three credit hour seminar will cover essentials of disordered speech and language for the practicing audiologist.
. . . .

Students are expected to achieve educational and professional goals through coursework and clinical practica. Previous discussion has described how the sequence of courses builds on prior knowledge. In the same way, clinical experiences are structured in order to provide clinical experience related to current or previous academic coursework. Clinical experience is provided in two ways 1) within class specific laboratory experiences and assignments and 2) in assigned clinical practicum, both on-site and off-site. Off-site placements are made only after students have achieved a certain level of independent functioning. When possible, clinical experiences are scheduled following the formal teaching of specific topics.

The program conducts ongoing and systematic assessment of academic and clinical education and performance of its students and graduates. Students have ongoing opportunity to assess their academic and clinical education program. Results of the assessments are used to plan and implement program improvements that promote high-quality educational experiences for students.

Degree Requirements

The curriculum sequence detailed in Table 1. describes coursework for students who matriculate directly from the bachelor's degree program. The program is a four-year graduate program totaling 100 semester hours that includes course work in basic hearing sciences, clinical audiology, audiologic rehabilitation, hearing disorders, hearing aids and cochlear implants, counseling, health care administration. On-campus practicum will include clinical experiences in the DSHS Speech and Hearing Clinic, UNC Hospitals, the UNC Center for Development and Learning, the UNC Frank Porter Graham Child Development Center, the UNC Carolina Children's Communicative Disorders Program. Off-campus practicum during the first three years will occur at affiliated hospitals in the Triangle region, the Chapel Hill/Carrboro City Schools, and the Veterans Administration Medical Center in Durham. Through contractual arrangements, the last two semesters of the program will be spent in a full-time audiology internship elsewhere in North Carolina or in another state.

2. Proportion of required courses open only to graduate students

Required courses will be available only to graduate students.

Discussion

Each course is offered only in the designated semester with enrollment in all courses limited to audiology and speech-language pathology students. Enrollment data for each course reflects enrollment in the program. Complete course syllabi will be available on-site for a review of how each course contributes to acquisition of the educational goals of the program. Abbreviated course syllabi are included in Appendix 4 - I have copies of some of these

b. Doctoral Written Examination. The purpose of this examination is to ensure that students have acquired the knowledge base and skills needed for the clinical practice of audiology. Successful completion of this exam will be required for the student to continue in the program. The audiology faculty will be responsible for this examination, which will be administered during the student's third year in the program. The content of the written examination will draw on the areas **previously** described **above**. Guidelines for grading exams include the following criteria:

Pass (Written)

- Evidence of adequate depth and scope of knowledge
- Evidence of clinical problem solving ability.
- Mastery of content.
- Appropriate and accurate interpretation of relevant research literature.

Fail (Written)

- Major gaps in knowledge; lacking in accuracy and/or completeness.
- Misunderstanding of major issues or misuse of literature in supporting answers.

c. Clinical Competency Examination. The purpose of this examination is to ensure that students have achieved requisite clinical skills in audiology. Successful completion of this exam is required for the student to continue in the program. This exam will be completed during the third year of the program. A faculty member will administer the competency examination and the student must earn a passing grade. Exams will be administered on a pass/fail basis, as follows:

Pass (Clinical Competency)

The student must demonstrate:

- Ability to administer and interpret a routine battery of behavioral audiologic assessment procedures (pure tone audiometry; speech audiometry)
- Ability to administer and interpret a routine battery of physiologic assessment procedures (ABR, OAE, Acoustic Immittance Measures)
- Ability to administer and interpret a routine battery of vestibular assessment procedures.
- Ability to select and fit a variety of hearing aids and assistive listening devices to adults and children.

Fail (Clinical Competency)

- Errors in clinical judgment re: selection of assessment procedures.
- Errors in clinical judgment re: interpretation of assessment procedures.
- Inappropriate hearing aid selection or fitting strategies.

d. Dissertation Requirement. Upon completion of the doctoral written examination and clinical competency examination, the Coordinator of Au.D. Studies, in consultation with the student, will designate a Dissertation Committee. The committee will consist of at least five members, including a chair and four members representing the student's area of special interest. At least three members of the

dissertation committee will be *full* members of the Graduate School Faculty and no more than two members may be *limited members* of the Graduate School Faculty or *special appointees*. The student will be expected to consult regularly with the advisor and members of the committee throughout the dissertation process. Because of the clinical nature of the Au.D., the dissertation will focus on an area of applied study.

The Dissertation Committee will be responsible for: 1) approving the subject of the dissertation project; 2) guiding the student in the development of a dissertation proposal; 3) evaluating the proposal in an oral prospectus defense meeting and reporting the outcomes of that meeting; 4) guiding the writing of the dissertation; and 5) conducting the final oral examination (defense of the dissertation) and reporting the results (pass or fail) to the Graduate School.

The dissertation proposal will be presented to the student's Dissertation Committee no later than four months following notification of successful completion of the written qualifying examination. The appropriate sequence of events will be as follows:

Step 1: Working with the Dissertation Advisor and consulting with other members of the Dissertation Committee, the student prepares a complete prospectus for the dissertation. The prospectus should review the literature and include a statement of the problem, and it should outline in some detail the research design to study the problem. A plan for the analysis of the dissertation data must be included in the prospectus.

Step 2: The date for the prospectus meeting will be cleared with the Coordinator of Graduate Studies. The prospectus must be delivered to all members of the Committee at least two weeks prior to the meeting for consideration of the prospectus. In the prospectus defense meeting, the student will be required to defend the prospectus. It is the student's responsibility to demonstrate to the committee that: 1) the prospectus is scientifically sound; 2) the proposed research procedures in the prospectus are feasible (this may involve a pilot study); and 3) the student has the requisite technical skills to carry it out. At the completion of the meeting, the Committee will select one of several options ranging from accepting the prospectus as is to requiring the student to prepare an entirely new prospectus. The Dissertation Committee will decide if a subsequent meeting is necessary to approve revisions to the prospectus or to approve a new prospectus. Upon approval of the dissertation prospectus the Dissertation Advisor will recommend to the Dean of the Graduate School that the student be admitted to candidacy.

Step 3: The candidate conducts the approved study and writes the dissertation under the supervision of the Dissertation Advisor; however, all members of the Dissertation Committee will be expected to provide assistance when called upon by the student or Advisor.

Step 4: It will be the responsibility of the Dissertation Advisor to determine when the candidate is ready for the final oral examination. When, in the

opinion of the Dissertation Advisor, the candidate has prepared an acceptable draft of the dissertation, the Advisor will schedule the examination. The student will distribute the final draft to the committee members at least 10 days before the scheduled examination. In the final examination the student will be required to defend the dissertation. A thorough, sophisticated understanding of the literature supporting the project should be demonstrated as well as competence in justifying the procedures and interpretation of the results.

Step 5: The Committee must approve the dissertation draft at the time of the final examination. The student will be obligated to make revisions to the draft recommended by the Committee, under the supervision of the Dissertation Advisor. Responsibility for assuring that the student completes the revisions recommended by the Committee rests with the Dissertation Advisor. The student must adhere strictly to the rules and regulations for preparation of the dissertation as outlined by the Graduate School. Assuming that the student initiates his/her dissertation work in the first summer session of the second year (as indicated in the curriculum summary), the dissertation should be completed by the end of the fall semester, third year.

8. Academic and Clinical Advisement and Review

a. Academic Advisement. The Coordinator of Au.D. Studies will assign each student an academic advisor. The advisor, a member of the DSHS core faculty, will meet with the student at least once each semester to guide his or her clinical and academic progress throughout the program.

b. Mid-term and end-of-semester clinical evaluations. All Au.D. students will receive written evaluations of their clinical performance from each of their clinical supervisors at the middle and end of each semester of clinical practicum. In addition, clinical supervisors will hold an individual supervisory conference with each student at the end of each semester to discuss specific professional/clinical strengths, weaknesses, and goals.

b. Annual review. All Au.D. students will be reviewed annually by the audiology faculty. Students' course grades, general performance in clinical practicum and assessment from clinical supervisors will be reviewed. The purpose of this review is to monitor the student's performance and progress and, to point out strengths and to make recommendations for improvement in any area of concern. The results of each annual faculty review will be conveyed to the student in writing.

The evaluation plan for the proposed Au.D. program is outlined in Tables 3 and 4. We will evaluate overall program goals as well as student educational goals. These goals are summarized in the first column of the tables.

A. Evaluation Criteria

The criteria for evaluating our Au.D. doctoral programs are summarized in the second column of Table 3 and 4. In general, the criteria reflect the successful achievement of the program and student educational goals for the Au.D. The specific criteria vary depending on the goal. At the overall program level, criteria address the

extent of collaboration, productivity, and successful preparation of students for careers in clinical audiology. At the student educational level, criteria address the successful acquisition of competencies and application of knowledge in the areas of diagnostic audiology, rehabilitation, and counseling.

B. Evaluation Measures

The evaluation measures are described in the third column of Tables 3 and 4. These measures will provide documentation of the extent to which the various criteria for successful attainment of the program and student educational goals are achieved.

E. Plan for Evaluation Prior to the Fifth Operational Year

The evaluation schedule for each measure to be used in the evaluation is shown in the fourth column of Tables 3 and 4. The evaluation will be ongoing, and scheduled as appropriate for the different measures used. Beginning with the fifth operational year, after our first class of Au.D. graduates have been working in clinical audiology positions, we will implement a survey of those Au.D. graduates and their employers to gather feedback regarding our success in preparing doctoral-level audiology practitioners.

Research Requirements

Students take a prerequisite course in statistics prior to entering the program. Within the program they must take a 2 course research series. OCCT 304: Research in Occupational Science and Therapy and, OCCT 350: Independent Study: Occupational Therapy and Science are taken in the fall of the second year. OCCT 330: Applied Research Experience is taken in the spring semester of year 2. Throughout year 2 in OCCT 350 and OCCT 330 the student works with a team of 1-3 students under the direction of a faculty research advisor to plan, conduct, write and present a collaborative research project. Student assignments to research teams are made on the basis of student interest in a project and the overall workload of the research advisors. All four research faculty serve as advisors, each overseeing an average of 2 projects each year. Research advisors evaluate ongoing work on the projects with the full faculty evaluating the final presentation. A list of the research projects for the Class of 2000 is included in Appendix 5. The research series and Collaborative Research Project serves as an approved substitute for the Graduate School's thesis requirement.

Doctor of Philosophy (Ph.D.), Speech and Hearing Sciences

Description of Ph.D. Program

The Ph.D. program is designed to prepare scholars, researchers, educators, and mentors who will contribute to the knowledge base within speech, language and hearing sciences. These professionals will focus on research, personnel preparation, and service delivery from an interdisciplinary perspective and will be well-versed in current "best practices" within these three areas. The first Ph.D. students will be enrolled beginning Fall, 2002.

Program Goals

The primary goals are to recruit, educate and graduate a cadre of professionals who will: (a) provide leadership in the fields of speech-language pathology and audiology related to early childhood intervention, research, and practice; (b) model "best practice" in academic and scholarly endeavors; (c) facilitate interdisciplinary efforts in research, personnel preparation, and service delivery; (d) provide direct applications of research to practice; (e) create and share innovations in the use of technology and tele-clinical applications; (f) mentor students and practicing professionals in conducting research and applying research findings; (g) contribute new knowledge in the area of early childhood assessment and intervention; and (h) promote the advancement of the field by acting as change agents within and across systems of research, personnel development, and service delivery.

Degree Requirements

In planning their programs, students choose a specialization within early intervention. Possible specializations include areas such as research and teaching focused on infants and toddlers, autism, hearing impairment, severe speech and physical impairment, augmentative and alternative communication, models of speech production/speech perception, or craniofacial disorders. Refer to Appendix XXX for sample curricula for specializations in: autism, hearing impairment, infant-toddler communication disorders.

Course Requirements

Each student will be required to complete a minimum of 54 semester hours. Each student is required to take courses from four areas. The first of these, represented by four core doctoral seminars, assures that each student is exposed to the principles and content embodied in the program goals and objectives. Topics included in these seminars will focus on program evaluation and research in the efficacy of intervention with infants and toddlers, research focused on families of children with disabilities, grant writing, ethics, use of technology, and personnel preparation. The second area is comprised of research

design and statistics courses to assure competency in designing and conducting research in speech and hearing disorders. The third group consists of courses in the student's area of specialization taken in the Division of Speech and Hearing Sciences. Group four is composed of related cognate courses taken outside the Division.

Doctoral Written and Oral Examinations. The purpose of the examinations is to ensure that students have achieved a satisfactory level of knowledge in early intervention with young children with speech and hearing disorders. Successful completion of these examinations is required for the student to continue in the program. These exams should be taken within the semester following the completion of course work.

Dissertation. Each student will complete a dissertation representing an original research project in the student's area of specialization. Identification of an appropriate research question or hypothesis, knowledge of the literature relevant to the dissertation topic, use of a scientifically sound methodological approach to address the research question, ability to interpret results of the investigation appropriately in light of the research question and other existing evidence, and skills in effective professional communication in a written and oral format. Following completion of the research and submission of the written document to the Dissertation Committee, the student will defend the dissertation orally before the Committee.

Research

Students will participate in two research projects. The nature and scope of the projects will vary (e.g., group-experimental design, single-subject design, survey research). The intent of the research experience is to mentor students in research and to produce at least one publishable study. The research projects may be independently designed and conducted by the student under the supervision of a faculty member. Alternatively, the projects may be faculty-initiated with the student taking a substantive role in all or most aspects of the project, including conceptualizing, designing, and implementing the study, collecting and analyzing the data, and preparing a manuscript.

Teaching

Each student will meet with a staff member from the UNC-CH Center for Teaching and Learning to plan for the development of a teaching portfolio. Appropriate courses and workshops related to teaching will be identified and incorporated into the student's program of study.

Students will then complete two semesters of a mentored teaching experience on a topic related to early intervention, under the direction of a single faculty member (i.e., same faculty member will direct/supervise a given student for both semesters). This mentored teaching experience may take different forms, including (a) completing a systemic observation of the mentor in the classroom and later discussing with the mentor a range of teaching issues, (b) teaching lecture units of an established course, (c) developing a new unit for a course, (d) establishing and running a lab component of a course, and/or

(e) preparing an in-service course. Finally, each student will create a teaching portfolio to enhance their marketability for faculty positions in basic science or professional programs.

Technology

A unique strength of the program is the requirement that all doctoral students participate in a variety of experiences to enhance their knowledge and skills of classroom technology, use of the Internet and its various utilities, and alternative distance education methodologies. The range of possible experiences include classroom technology, distance learning (including web-based learning), and tele-clinical methods related to speech and hearing. Experience with classroom technology typically will be incorporated into the teaching experience described above.

Undergraduate Curriculum

UNC does not offer an undergraduate major in speech and hearing sciences. As a service to the University, DSHS provides four classes for graduates and advanced undergraduates that fulfill some of the prerequisites coursework requirements for Master's level programs in Speech and Hearing Sciences. Students who enroll in these courses include undergraduate students in majors such as Communication Studies, Linguistics, and Psychology who are interested in pursuing graduate work in speech and hearing sciences, as well as continuing studies students and admitted graduate students who are fulfilling prerequisite coursework for a graduate degree in speech and hearing. The common educational goals of the courses are to provide students with a basic conceptual framework in the scientific bases of clinical practice and research of speech-language pathology or audiology. These courses are:

SPHS 123 (Communication Studies 180) Introductory Audiology I

SPHS 130 Introduction to Phonetics

SPHS 140 (Communication Studies 182) Speech Science

SPHS 170 (Communication Studies 183) Anatomy and Physiology of the Speech-Language and Hearing Mechanisms

Course descriptions and enrollment statistics are included in Appendices ___ & ___ (the appendices that Benita is working on).

FACULTY

<Section Coordinators: Montgomery, tenure track, and Hooper, clinical faculty>

The faculty represents a diverse group with respect to demographics, rank, professional expertise, and responsibilities. Below is a detailed description of (a) an assessment of the faculty, (b) faculty research, and (c) faculty teaching.

Overall Assessment of the Faculty

The core faculty comprises tenure-track and clinical-track members. The majority of faculty members are tenure-track (Jackson Roush, Professor and Division Director; Elizabeth Crais, Professor; Melody Harrison, Associate Professor; James Montgomery, Associate Professor; Robert Mayo, Associate Professor; Katarina Haley, Assistant Professor; Janet Sturm, Assistant Professor). **There are XX clinical-track faculty (Celia Hooper, Clinical Professor; Sharon Ringwalt, Clinical Assistant Professor; Martha Mundy, Clinical Instructor, Connie Carlson-Smith, Clinical Instructor, Stephanie Sjoblad, Clinical Instructor). Appendix A lists all core and adjunct faculty members (by degree, rank, track, age, gender, race, ethnicity, area of specialty).**

Responsibilities of tenure-track faculty primarily involve academic and clinical teaching, research, and professional service. Clinical-track faculty members have a variety of responsibilities and may differ from each other in these duties. Some primarily engage in clinical-related activities (e.g., providing clinical supervision), with some direct academic teaching and/or research, and/or professional service. The Division has a formula for faculty that outlines the duties of tenure-track and clinical-track faculty for clinical, research and administrative responsibilities. There also are several adjunct faculty members and instructors at different ranks who provide various teaching and/or clinical functions for the Division in their areas of expertise. These primarily tend to be professionals in our hospital or nearby facilities that have speech-language pathologists or audiologist with special research or clinical skills. The core faculty has been quite stable over the past 10+ years.

As can be seen from Appendix A, the faculty of the Division represents a diverse group with respect to rank, gender, race, and ethnicity. The Division has been proactive in recruiting underrepresented minority faculty. Currently we have one African-American male core faculty member, one African-American female faculty member (who recently moved to Department Administration for the majority of her duties), and one African-American female faculty member who has an adjunct appointment with us who directs a university outreach program on campus. We have had very little faculty turnover in the past ten years but several faculty have taken part in national minority student recruitment efforts. We believe that this will strengthen our program, support our current minority faculty, and help us in the future in our faculty recruiting efforts.

The core Division faculty members have numerous strengths, chief among them a shared commitment to excellence in teaching, as indicated by strong student evaluations (see Appendix XX) and several award winning faculty. Another strength of the faculty

centers on their clinical training of students, as each faculty member provides direct clinical supervision of students. In fact, clinical participation by a large majority of tenure-track faculty is a unique feature of our School of Medicine that sets this program apart from many graduate programs (with both MS and Ph.D. programs, where faculty focus on teaching and research). Another important strength of the faculty is its strong collegiality and civility toward one another. As a group, the faculty works extraordinarily well together in meeting the Division's various missions.

Despite the faculty's strong commitment to academic and clinical excellence, an especially strong and persistent concern of the faculty centers on salary and benefits. It is somewhat difficult to compare our compensation package since only four other communication sciences and disorders programs in the US are housed within a school of medicine. Relative to other programs housed in Medical Schools (n = 4), the total compensation package of Division faculty members is (considerably) lower in many instances. **For instance, (am waiting to hear from three other people in med schools about this.)** Faculty members also have strong concerns about having inadequate resources/facilities (i.e., sufficient clinical and lab space). However, this concern appears likely to be addressed in 2004 when the Division is slated to move to a newly renovated building adjacent to Berryhill Hall, our primary classroom teaching building.

Each faculty member participates in a wide variety of Division, Department, School of Medicine, and University-level activities/committees, as well as many professional committees/activities. The Division has several committees ranging from the curriculum committee, multicultural committee, clinical affairs committee, long-range planning committee, to a technology committee. All committee progress is reported to the full faculty for discussion during monthly faculty meetings. In addition, various ad hoc committees are created on a as-needed basis; however, these committees are kept to a minimum. Also at the Division level, more senior faculty members serve on the majority of the committees, while junior faculty members serve on fewer committees. The intent is to free up time for junior faculty to develop/implement sound teaching practices and productive research programs.

As can be seen in Appendix A, within the next 12-15 years, five faculty members will be of retirement age. While retirement is not on the immediate horizon, it is an issue that the long-range planning committee members recognize will need to be addressed. At the national level, the field of speech and hearing sciences faces a serious shortage of Ph.D. faculty beginning approximately 2008. The American Speech, Language, and Hearing Association (ASHA) projects that such a shortage will continue, unless serious efforts are made to recruit and prepare new Ph.D.s for academic positions. The new Ph.D. and AuD. programs within the Division will help begin to address this shortage by graduating three to five Ph.D.s and three to five AuD.s each year, starting 2005/2006. Students will be prepared to assume a variety of teaching-research faculty positions throughout the many programs in the country. For a complete list of faculty CVs see Appendix XX.

Dr. Jackson Roush serves as the Division Director. Division faculty has expressed their continued confidence in the leadership of Dr. Roush, as evidenced by the fact that he was re-appointed as Director in 1999. An evaluation of Dr. Roush as Division Director has been performed by Dr. Lee McLean, Chair of the Department of Allied Health Sciences (see attached letter – I GUESS WE SHOULD GET THAT LETTER, RIGHT?). Director responsibilities include oversight of all of the programs within the Division, serving as liaison with AHS, the School of Medicine, the Graduate School, and ASHA.

Faculty Research

The Division has two primary research foci: (1) basic research and (2) applied research, research foci that are in keeping with all other graduate programs in speech and hearing sciences. The focus of the basic research programs is to advance the field's knowledge base by making new and substantive contributions to our understanding both the normal and disordered processes of human communication across the life span. The applied research programs are aimed at developing and applying the most conceptually-sound approaches to the prevention, diagnosis, and treatment of all human communication disorders.

As a means to support faculty research the Division (in 2000) developed and implemented an internal support mechanism through which one faculty member may apply for a two-semester research leave (i.e., spring-summer, summer-fall). The purpose of the leave is to provide faculty with unfettered time to engage in appropriate basic and/or applied research activities that will yield a tangible product (e.g., pilot work leading to a federal grant submission, data collection/analysis and publication-ready manuscripts). In addition, to further facilitate research productivity (particularly grant productivity) within the Department of Allied Health Sciences (DAHS), the Chair of the DAHS formed a committee (November 2000) comprising faculty members from the seven divisions within the DAHS to develop a department-wide research "infrastructure" designed to facilitate grant productivity. Three members of the Division sit on this committee.

Data- and conceptually-based peer-reviewed publications in top-tiered professional journals serve as external and independent review of the quality of faculty research, as do presentations/seminars at state, regional, national, and/or international meetings. One faculty member (Robert Mayo, along with his co-authors) received the "Editor's Award" in 1999 from the most prestigious ASHA research journal for having published the paper regarded by the journal's associate editors and chief editor as having the greatest scientific merit. Faculty members' research productivity is defined jointly by the Division Director and Department Chair according to the nature of each faculty member's position. Generally, tenure-track faculty members are expected to publish two manuscripts a year in peer-reviewed journals. Presently there are no mechanisms whereby faculty members are compensated for meeting or exceeding research goals or expectations regarding grant productivity. As a general policy, faculty members are provided travel funds to attend at least one state meeting and one national meeting each

year. Division funds are also used to support start-up monies for faculty beginning a new research project or needing funds for external applications.

Core Division faculty members also have a history of successfully securing external grant funding (i.e., research grants, training grants). For instance, one faculty member has been PI on two NIH research grants and numerous other faculty members have been Co-PI and/or Investigators on many other NIH research grants. Yet other faculty members have been PI, Co-PI, and/or Investigators on several personal preparation and technology grants awarded by the federal government. A list of funded grant projects (since 1995) appears in Appendix XX.

Teaching

The Division's teaching mission emphasizes the integration of current discipline knowledge (i.e., basic and applied) into sound classroom and clinical teaching practices. Regarding classroom teaching, for instance, current research findings from the many different sub-disciplines of the field are integral components of the content of all coursework (e.g., pediatric hearing assessment/intervention, family-centered issues, psycholinguistics). The focus of clinical teaching is to provide students with current principles and techniques regarding best clinical practices.

As a policy, each teaching faculty member is responsible for approximately three 3-hour courses per year. Responsibilities for independent study courses, thesis, and continuing education activities are not counted as part of this responsibility. Such activities are covered by faculty members at their own discretion. Graduate and undergraduate-level courses are not differentiated with regard to teaching load, since all of the undergraduate courses are taken by graduate students who enter the program with course deficiencies. Clinical faculty members are also eligible for teaching. Some clinical faculty members carry a teaching load in addition to their clinical responsibilities. In these circumstances, the clinical faculty member is given a decrease in clinical load (i.e., 20% of their clinical load per course taught) in line with our division job responsibility formula.

The Division recognizes that it is critical for all faculty members to develop and renew their teaching skills to continue to be effective classroom and clinical teachers. To enhance academic teaching, faculty are encouraged to participate in the many workshops and seminars on teaching sponsored by the UNC Center for Teaching and Learning. Evidence of commitment to teaching is reflected in the uniformly high teacher and supervisor evaluation ratings attained each semester by members of the faculty (see **Appendix __** for a summary table displaying each core faculty member's student evaluation rankings for each class taught over the past 5 years). Additional evidence of teaching excellence is reflected by the fact that two faculty members have received University Teaching Awards in the past five years (Dr. Crais, Dr. Mayo) and two others have been recipients of the Favorite Faculty Award (Harrison and Roush). Several faculty members have received teaching grants from the Center for Teaching and Learning and have been on the University Teaching Awards Committee. Each faculty member also

undergoes a peer review of teaching at least once every two years. The Division is in the process of developing a “standardized peer review” format. Several of our core courses are team taught, a process which enhances peer review. To enhance clinical teaching skills faculty attend various state, regional, and/or national meetings centering on clinical practice issues.

Mentoring of junior faculty occurs informally via the most appropriate senior faculty member(s) meeting with junior faculty to discuss strategies/opportunities to enhance their teaching ability and to develop independent research careers. Each faculty member also serves as academic advisor to 6-8 masters students. Students meet with their advisor at the start of their program and at least once each semester (although meetings are not limited to one/semester) to discuss the student’s progress, course of study, and any other issues that may arise. All students receive direct clinical mentoring as part of their "in-house" clinical practicum experience. Those students who choose to write a thesis receive intense research mentoring by one or more Division faculty.

It is also important to note that many core (and adjunct) faculty members have directed MS theses and/or served as committee members on countless other MS thesis committees within the Division. In addition, many Division faculty have served as members on thesis and/or doctoral dissertation committees in other divisions or departments (see Figure 3).

STUDENTS

<Section Coordinators: Harrison, SLP, and Sjoblad, Audiol>

Characteristics of the Applicants and Students Admitted

The Graduate School at the University of North Carolina at Chapel Hill determines university-wide application processes and procedures. The Division of Speech and Hearing Sciences has supplementary information that is requested in the application process. Information about the Graduate School process is available at <http://gradschool.unc.edu>. Specific information about the Division and the application process is available at <http://med.unc.edu/ahs/sphs>.

During the period under review (1997-2001), the number of applicants per year has decreased slightly, which is consistent with an overall decrease in the number of applicants to speech and hearing programs nationally. The number of students who have applied, been admitted, and enrolled from 1997-2001 is shown in Table X. The undergraduate GPA of students applying to, accepted, and enrolled in the program between 1997 and 2001 has consistently been 3.5 to 3.6. The combined verbal and quantitative GRE performance of those students applying to, accepted, and enrolling in the program during the past 5 years has averaged 1111. The numbers have been consistent from year to year.

As should be expected, the number of degrees awarded has closely paralleled the number of students enrolled in the Division and Speech and Hearing Sciences masters' program each year. The vast majority of students complete the program in five consecutive semesters. The five semesters consist of two regular academic years, with the intervening summer sessions included. Each year, two- three students are admitted without an undergraduate preparation in speech and hearing. These students require six to seven semesters to complete the degree program. Thus, most students graduate in May of their second full academic year, however, a few require one or two additional semesters to complete the program.

The quality of the applicants has remained consistently high over the past five-year period. The students we admit, in addition to having excellent credentials in their academic course work, have outstanding letters of recommendation and impressive histories of extracurricular activities and service related activities. We attribute the

consistently high quality of student applicants to the national reputations of the University, the masters' program, and the national visibility of our faculty, and graduates.

Table x. Students applying to, accepted in, and enrolled in the Division of Speech and Hearing Science 1997—2001.

	2001	2000	1999	1998	1997
Total Applications	192	245	248	287	298
Total Admitted	78	55	65	72	76
Total Rejected	114	190	183	115	222
Total Enrolled	26	41	44	36	38
Undergraduate GPA					
Applied	3.6	3.6	3.6	3.5	3.5
Accepted	3.7	3.7	3.8	3.7	3.7
Enrolled	3.7	3.5	3.7	3.6	3.6
GRE Verbal					
Applied	489	483	487	486	488
Accepted	540	525	525	525	525
Enrolled	508	527	524	522	508
GRE Quantitative					
Applied	581	562	558	548	543
Accepted	623	611	597	587	580
Enrolled	612	603	583	571	554

B.2 Undergraduate Institutions

Graduate students in the Division of Speech and Hearing Sciences come from a diverse array of public and private institutions from all parts of the country and other nations (e.g. Canada, Brazil, Saudi Arabia, India, Israel and Sweden). A listing of the undergraduate Institutions of students enrolling in the previous five years appears in Appendix E. Slightly over half of the students have been from public and private undergraduate institutions in North Carolina, while the remainder has completed undergraduate degrees in other sates or countries. A complete list of the institutions of

higher education from which students enrolling in the masters' program have earned undergraduate degrees is shown in Appendix Z.

B.3 Financial Support

Funding for students in terminal masters programs, such as that of the Division of Speech and Hearing Sciences, is variable from year to year. Currently, there are a total of eight graduate students who are employed by the Division of Speech and Hearing Sciences. Two are recipients of University Merit Scholarships who work 10-12 hours per week for professors. Two more graduate students are funded by the *North Carolina Consortium for Distance Education in Communication Disorders*. These students assist faculty in the delivery of distance education courses offered by the Consortium. Another two are federal graduate work study students, and two more are university funded teaching assistants who provide assistance to professors who are teaching the undergraduate courses offered by Division faculty.

During the five-year period from 1997-2001, the Division has had two Department of Education, Office of Special Education personnel preparation grants to prepare students to work with infants and children from birth-to-five years with disabilities or who are at risk, and their families. One grant prepared students to work with children with low incidence disabilities and their families. The other was a social inclusion grant that prepared students to work with young children with disabilities and their families in ecological environments. These grants have provided students with a stipend, health insurance, and a small travel allowance. Each personnel preparation grant funded 10 students per year over a period of three years.

In addition, funding has been available through several traineeships. The Veterans Administration Medical Center in Durham provides one traineeship for a second-year speech-language pathology student, and one for a second-year graduate student in audiology. The Center for Development and Learning provides two traineeships for graduate students.

Faculty research grants provide graduate research assistantships. For example, Dr. Jim Montgomery has funded a research assistant for the past five years. The

Psychoacoustic Laboratory in the Division of Otolaryngology has funded several graduate students over the past five years. Funding for students is a constant struggle and continues to be a deterrent to attracting the some of the very best and brightest students who are recruited and fully funded by comparable graduate programs

B.4. Employment Status of Graduates

The Division of Speech and Hearing Sciences has developed two parallel surveys; the first is designed to track the employment status of graduates, and the second to assess the satisfaction of employers with the preparation graduates receive. Both instruments are included in this section. All graduates of the program in the previous five years who have sought employment have been successful. In many instances graduates have reported multiple offers for employment. Graduates are employed in a variety of settings, which reflects the diversity of opportunities available to professionals in the communication disorders. Employment settings include: hospitals, rehabilitation center, public and private schools, early intervention programs, state agencies such as developmental evaluation centers, and private practices. Five students are currently enrolled in Ph.D. programs in other states.

Overall, employers of graduates of the Division of Speech and Hearing Sciences have been very satisfied with the pre-professional preparation students receive at UNC-Chapel Hill. Comments such as "best prepared graduate I've ever hired", and "Most intelligent student I've worked with" are not unusual.

According to graduates, the strengths of the program included: the faculty, opportunities for research and the wide range of courses available. The weakness they noted were; lack of funding for students, the manner in which clinical practica are assigned, and the multicultural course. Both surveys are found in Appendices X-X.

B.5. Professional and Intellectual Contributions: Awards

Students in the Division of Speech and Hearing Sciences have been recipients of a number of awards, reflecting the quality of the students attracted to the masters' degree

program. These have included the medical School Alumni Board Scholarship, the National black Associations for Speech-language and Hearing research Scholarship, and the Sertoma Scholar in Communicative Disorders award. Highly competitive Graduate School Merit Assitantships have been award to students in three of the last five years. Student scholarship has also been recognized by the Medical Alumni Loyalty Fund Scholarship, as well as the Ben Potter Sertoma Memorial Scholarship. An International Sertoma Scholarship was awarded 1999, 2000 and 2001 graduates of the Division. In 1999-2000, four ASHA Minority Leadership Scholars were awarded to UNC Chapel Hill students. Students in the Division of Speech and Hearing Sciences have also earned the Alpha Kappa Alpha Educational Advancement Foundation Award and the National AMBUCS Scholarship.

In addition to these scholarships and awards, students in the DSHS at UNC-CH have been presenters at state and national professional meetings each of the previous five years covered in this review period. Some have presented their thesis projects. Others have presented projects that were completed as part of the personnel preparation grant for which they competed and were selected, while others have presented research projects undertaken in conjunction with a specific faculty member.

B.6. Clinical Practicum

The majority of entering students begin their practicum experience at the Division of Speech and Hearing Sciences where they receive approximately 100 hours of clinical experience. During their clinical experience within the Division students experience a level of supervision that is consistently higher than that required by the national certifying organization, the American Speech-language and Hearing Association. Following successful completion of clinical hours within the Division, students are assigned to clinical sites outside of the Division by the practicum coordinator of either speech-language pathology or audiology. Specific policies regarding clinical practicum are documented in the practicum handbook. The clinical practicum handbook is posted on the Division of Speech and Hearing Sciences web-site. Prior to beginning classes in the fall semester, the handbook is reviewed by the faculty during orientation, which is

then available on the web. The Division has affiliations with over 50 practicum sites in the surrounding area. A representative list of those sites is found in Appendix z.

B.7. Monitoring Guidance and Performance

B.7.a. *Evaluation of Orientation and Advising*

Each Fall semester, prior to the beginning of classes, the Division of Speech and Hearing Sciences conducts an extensive orientation for entering students. Material presented in the orientation is available through a website so students can refer to this resource. In addition to a general academic orientation, there is also a clinical orientation on a separate day to acclimatize students to the clinical practice and procedures. Each clinical supervisor is responsible for orientation of students assigned to them for the semester.

Evaluation of these processes is accomplished via consultation and feedback from the executive board of the student organization of the National Student Speech Language and Hearing Association. Our goal providing orientation is to assist the students in feeling more at ease as they undertake graduate study in what is for many of them a new environment. As a faculty we ask the students what is helpful and what is not; what is comprehensible to a new student and what needs clarification. We continually incorporate their feedback into the process and the programs.

B.7.b. *Assessment of Academic Performance.* Academic performance is evaluated according to the grading system established by the Graduate School:

- H Clear excellence
- P Entirely Satisfactory
- L Low Passing
- F Fail

According to Graduate School policy, no mark falling below the standard represented by the grade of L is counted for graduate credit. A graduate student who receives a grade of F, or nine or more semester hours of L is ineligible for continued

graduate study. In addition to monitoring grades received, a period of time is set aside in at least one faculty meeting each semester to discuss student's performance and progress. When a student is identified as failing to progress satisfactorily, the students encountering difficulty in their academic or clinical assignments meet with their advisor and, when appropriate, other members of the faculty to discuss specific concerns and issues and to establish criteria for improvement. Progress is carefully monitored in each instance.

B.7.c. Assessment of Clinical Performance. To assess speech-language pathology students' clinical performance, two evaluation instruments are completed by each of the student's clinical supervisors every semester. At mid-semester and again at the end of the semester the "Evaluation of Clinical Performance" is completed by the supervising clinician, in collaboration with each student clinician. Additionally, students who are involved in diagnostic activities are evaluated using a similar form, "Evaluation of Diagnostic Performance". A copy of these assessment instruments is found in Appendix Z. In the event a student fails to perform adequately in a clinical placement, the student meets with the clinical supervisor to create a plan of remediation. If necessary, the practicum coordinator may be involved. If the student fails to meet the criteria established in the remediation plan, they may be removed from the clinical placement at the discretion of the practicum coordinator.

B.8. Racial, Ethnic and Gender Diversity: Plans for Insuring and Enhancing Diversity

The pattern of diversity within our student population has been relatively consistent over the past five years. Each year the class is dominated by white females with some representation from other racial/ethnic groups, most consistently African American females and white males. This pattern represents success only when taking a historical perspective of the program. The racial/ethnic diversity of students enrolled in the program is shown in Table X. In 1997, students from diverse cultural backgrounds composed 21 percent of the student population. This represented the most diverse class in the program's history and a goal that we have tried to meet each year. In 2000 and 2001, 8 percent of enrolled students were from culturally diverse backgrounds. Minority

recruitment and retention continue to be strategic issues for the Division. We have not yet successfully identified the means for recruiting adequate numbers of minority students to the program. However, our retention and graduation rates, for students from racially/culturally diverse backgrounds, is 100%.

During the past five years, faculty in the Division have engaged in a variety of activities to enhance the reputation and visibility of the program to students from diverse backgrounds. For example, the Multicultural Activities Committee was formed to provide a group that was focused on recruitment and retention of students. This committee has been responsible for planning and implementing multicultural seminars each year. Guest speakers are invited to present and all faculty are required to attend. In addition, faculty members represent the Division of Speech and Hearing Sciences at all the University sponsored programs designed to recruit culturally diverse students to the University.

Table X. Diversity of student population from 1997-2001.

Year	African Am	Asian	Native Am	Hispanic	White	Total
2001	1	0	1	0	24	26
2000	3	0	0	0	36	39
1999	5	0	0	0	38	43
1998	3	0	0	0	33	36
1997	4	2	1	1	30	38

Table X. Enrolled student population by gender

Year	Females	Males	Total
2001	26	0	26
2000	37	2	39
1999	39	4	43
1998	35	1	36
1997	35	3	38

ADMINISTRATION AND LEADERSHIP (Roush)

Leadership

The DSHS Division Director is appointed by the Chair of the Department of Allied Health professions and is selected for the position based on administrative expertise and proven leadership within the Division, Department, and University. Other considerations include the mission of the division and the complement of faculty skills and resources necessary to achieve that mission. Dr. Roush, a tenured full professor is considered a senior faculty member within the Department and University. Within the Department, directors have both clinical and tenure track appointments and both master and doctoral degrees. The appointment to a director position is based not on rank or degree but expertise and suitability for the position. Dr. Roush was appointed by the former Chair, David Yoder, based on evidence of skills needed to provide the leadership the Division at a time of significant growth and change. The Chair of the Department of Allied Health Professions evaluates the Division Director through the DAHS faculty review process for fixed-term faculty (Appendix 10).

Decisions are made by the faculty as a whole in regularly scheduled faculty meetings and annual retreats through a process of discussion and collaboration. The faculty is small enough to operate on this somewhat informal consensus based model. The Division Director sits on the Chair's Advisory Committee which meets monthly to share information and make decisions at the Department level. The Chair of DAHS sits on the Dean's Advisory Committee for the SOM. Organizational access to the Dean of the SOM is through the Chair of DAHS. Organizational charts for the DAHS, SOM and University are provided in Appendix 14

Administrative Support

With three full-time secretaries and access to additional support through assigned undergraduate work-study students, and DAHS administrative support, all programmatic and administrative requirements are met.

Sufficient financial resources are allocated to the program through the DAHS and School of Medicine to adequately support all program operations. See Appendix 15 for detailed financial information.

Facilities & Equipment

Facilities

The program has several laboratories used for teaching and research (see appendix ____).

The lecture classrooms are shared with other Divisions, and all contain basic AV equipment (slide and overhead projectors, screen, VCR, white board). LCD projectors are available, but stored separately for security. In the February 2001 the SOM approved purchase of comprehensive AV systems for all classrooms and the OT lab. We anticipate installation at the end of the spring semester. Each student has a chair with attached writing surface. The classrooms can accommodate 24-30 students depending on the size of the assigned room.

The SOM has classrooms, conference rooms and lab spaces that can be used by the Division through a master scheduling system.

Each full time core faculty member has a private office, with an up to date computer system. There is adequate private space for advising. Non-core faculty members have off site offices, as well as a shared space within the central Division office. The central Division office has four workstations for non-core faculty and support staff, including work study students.

Two additional offices are dedicated to funded research programs in which OS Division faculty participate: the CAN Project (Cure Autism Now) and the TeleAbility Project. Both offices are equipped for project specific activities.

Discussion

Facilities are adequate for programmatic needs, with two exceptions. First, classroom space is limited in size, availability and flexibility. Classrooms are small and are often overcrowded with student desks, bodies and AV set-ups. The number of classrooms assigned to the Department is limited. Scheduling the most appropriate classroom for a specific class is often difficult due to competing demands for classrooms within the Department. Given the participative and interactive teaching style used in many OS classes there is a regular need for simultaneous break out space for up to 5 small groups of students during a single class session. Locating such space is a challenge and requires daily planning and rescheduling.

Second, the OT Lab is not adequately secured. The lab is located geographically distant from faculty and Division offices in an isolated wing of the building with access to the outside. Students are instructed not to use the OT Lab as a study area after hours due to safety concerns. Valuable supplies and equipment are locked in storage cabinets in the small lab.

The Department is scheduled to move into renovated space within the next 4-5 years. Initial plans have been drawn for the renovation. We expect to have preliminary blueprints available during the on-site visit.

Equipment and Supplies

A sufficient array of current occupational therapy evaluations and treatment technologies are available for students to use in the classroom. The Division has had sufficient funding

to purchase needed equipment and supplies. When necessary, students are given opportunities to work with equipment in other settings. For example, students go to an assistive technology center and equipment dealer to see specialized computer access equipment and DME beyond what the Division provides.

Learning Resources

The library facilities include a health science library, graduate library, and undergraduate library with extensive collections, a full range of electronic databases, extended hours, knowledgeable staff and excellent work and study areas. Students have access to the web for searches and many full text resources, both at the libraries and at home.

Institutional Relationships

The organizational charts for the Department, School and University delineate formal institutional relationships. The collaborative interdisciplinary relationships between faculty and students has already been described...

THE FUTURE

The past 12 months has been a period of unprecedented self-examination and reflection as the Division has: 1) concluded a two-year process culminating in authorization to establish two new doctoral programs, and 2) prepared for two self study / site visits (UNC Graduate School and ASHA/CAA). Our engagement in the self study processes for both accreditation and the Graduate School review has resulted in useful dialogue regarding changes to the M.S. curriculum as well as sharper focus regarding the Au.D. and Ph.D. In the process we have gained a sharper focus on our strengths and needs. Future efforts will be aimed at building on our strengths while working to develop areas of needed growth and expansion.

Strengths

- Collaboration within the Dept and University
- Ability to attract high quality students and faculty

Areas for Development

- More extramural grants (rsrch grants,MS trng grants, doctoral leadership trng grants)
- Funding for u.g. course offerings
- Plans for Clinical lprogram development after the move
- Formative assessment tools
- Surveys of graduates / employers
- the identification of our distinct niche in the graduate education market for speech-language pathologists and audiologists;
- Diversity
- Classroom tech and distance ed

In addition we have targeted four issues specifically for our Graduate School Review and hope to discuss and explore these issues with our external reviewers:

We view the future with optimism, both for our graduate program and for the professional disciplines of speech-language pathology and audiology. We understand that achieving our full potential as a program and as individual faculty members depends on sound scholarship and the ability to... We welcome the upcoming site visit as a critical component in the process of evaluation and long range planning.

APPENDICES

Appendix __, DSHS Laboratories

The Psycholinguistics Research Laboratory is located in the Center for the Study of Development and Learning and is under the direction of Professor James Montgomery. The laboratory is equipped with two personal computers, a double-walled acoustic chamber, a touch sensitive response pad, an external timer allowing for the collection of reaction time data, and a variety of other external/peripheral devices dedicated to investigating a range of neuropsychological factors (e.g., attention, memory, speed of processing) underlying language comprehension in children with Specific Language Impairment (SLI) and in typically developing children. The laboratory has, in large part, been funded by grants from the National Institutes of Health (NIH).

The Speech Science Research Laboratory (Wing D) is under the direction of Professor Katarina Haley. This laboratory is devoted to speech perception and speech acoustics research. Current research programs are focused on acoustic and perceptual features of aphasia and apraxia of speech. The laboratory includes an acoustic chamber that is used for audio recordings and perceptual experiments. A digital signal processing system from Tucker-Davis Technologies is interfaced with a Pentium II PC. This system is used for waveform capturing, editing, acoustic analyses, speech synthesis, and stimulus presentation. The laboratory contains several high quality digital and analogue audio-recorders. Transcription tape recorders are used for phonetic transcription tasks. A number of acoustic analyses, stimulus generation, and phonetic software programs are available.

The Applied Communicative Sciences Laboratory (Wing C) is under the direction of Professor Celia R. Hooper. The DSHS ACSL is maintained for speech production research, class/lab teaching, and clinical service. Its focus is on normal and disordered speech production, with a greater emphasis on voice production. The instrumentation compliments that provided in the UNC Craniofacial Clinic and the UNC Hospitals Speech and Hearing Clinic, Depts of ENT and Voice Wellness Center. The instrumentation has been funded by an NIH Shared Instrumentation Grant, a SOM Instrumentation Grant, and DSHS Funds.

This ACSL lab is located in two places, Room 50, Wing C, School of Medicine, and in the ENT Clinic, 2nd floor surgery clinics of UNC Hospitals, labeled "Speech and Hearing Clinic." The room in the DSHS is monitored by Dr. Hooper; the room in the ENT clinic is monitored by Ellen Markus, Ph.D., Voice Wellness Clinic. The instrumentation has included the Kay Elemetrics CSL, 4300, but will be replaced in March 2001 with the new CSL, #4400. CSL, Model 4400, is CE (Certificate of Europe)-approved with Windows 98/2000/ME drivers. CSL provides the necessary features and specifications for efficient, accurate, and repeatable recording and measurement of speech signals. Eleven software programs were purchased for use with the CSL for speech production measurement. Additionally, ACSL contains a Dell System 310 computer and monitor with the CAFET program and Microsoft Word loaded on C-drive, with printer, the Kay Elemetrics external EGG, the Rothenberg Tracking EGG, two analog tape recorders with 2 amplifiers and 2 speakers, and a variety of alaryngeal speech devices for student practice. There is also a cabinet of software and speech science texts, a file cabinet for confidential patient/subject data storage, and a collection of patient materials for voice therapy.

The Psychoacoustics Research Laboratory (Wing D) is under the direction of Professor Robert Peters. Work in this laboratory is concerned both with normal hearing and with hearing impairment. The laboratory includes an acoustic chamber, a PC, programmable filters, attenuators, and a digital signal processing system from Tucker-Davis Technologies. Equipment is available for conventional as well as digital stimulus generation. Programs allow for measuring internal auditory filters, temporal processing, psychometric functions for the perception of signals, complex pitch, and the perception of either increments or decrements in signals. With the use of known and controlled masking this allows for experiments in the domains of spectral, temporal, and intensity characteristics of sounds.

The Speech EMG Research Laboratory (UNC Craniofacial Center) is under the direction of Professor David Zajac. This laboratory is devoted to the physiologic study of speech production with an emphasis on the aerodynamic and muscular substrates. Current research projects are focused on respiration and speech production in children and adults with and without cleft lip and palate. A particular focus is on the role of the soft palate and laryngeal muscles in regulating upper airway pressure. The laboratory includes a dynamic perturbator to vent upper airway pressures, aerodynamic instrumentation, electroglottography (EGG), and electromyography (EMG) equipment.

The Speech Acoustics Research Laboratory (UNC Craniofacial Center) is under the direction of Professor Robert Mayo. Research in this laboratory is focused on descriptive acoustic voice characteristics of African-American individuals compared to other populations and on acoustic and perceptual features of hypernasality. The laboratory includes a single-walled sound treated booth, a PC-interfaced Nasometer used for quantitative measurement of nasality, EMG instrumentation, and various acoustic analysis equipment.

The Velopharyngeal Dynamics Research Laboratory (UNC Craniofacial Center) is under the direction of Professor Donald Warren. Work in this laboratory is focused on speech and respiratory aerodynamics in infants, children, and adults with cleft lip and palate. The laboratory contains a variety of aerodynamic instrumentation, including a Respritrace used to measure abdominal and thoracic volume during speech production and an Acoustic Rhinomanometer that measures the size of nasal cavities.

The Applied Communicative Sciences Laboratory (Wing C) is under the direction of Professor Celia Hooper. The laboratory is used for clinical, educational, and research purposes and is dedicated to voice and speech analyses. The laboratory includes the Kay Elemetrics Computerized Speech Lab (CSL) for acoustic analyses, with accompanying software and hardware for voice analyses, four high-quality dubbing tape recorders, a personal computer, microphones, oscilloscope, amplifiers, and software for fluency management (CAFET). Additional voice and speech analysis equipment is available through Brian Kanapky at the Speech and Hearing Clinic, Neurosciences Hospital. These include a digital sound spectrograph, the Respiograph, an extended printer for the EGG, the Perci-PC, a respirometer, and laryngeal videostroboscopy equipment. The CSL was purchased through medical school instrumentation funds and the Neurosciences instrumentation was purchased through both NIH Shared Instrumentation and Small Instrumentation Grants (Hooper, Martinkosky et al.) and ENT funds (Kanapky and

Martinkosky). Recent and current research has focused on normal and disordered voice characteristics of speakers and singers.

The Augmentative and Alternative Communication (AAC) Laboratory (Wing D) is under the direction of Professor Janet Sturm. The laboratory is used for clinical, educational, and research purposes within AAC and it serves as a unique lab within the UNC Hospitals. It contains a broad range of high and low tech AAC equipment and tools that can be used with patients across the age span. It also includes video recording and editing equipment and a Pentium PC with dedicated language coding software. Research in this laboratory is focused on developing an integrated literacy software tool that can support the reading and writing needs of school-age children with severe speech and physical impairments.

The Will M. Miller Audiology Laboratory. This lab, located in Wing D of the Medical School, is equipped with the latest technology for behavioral and electrophysiologic assessment of children and adults. It serves as a teaching laboratory for graduate students in audiology as well as a site for audiology services rendered to the community via the DSHS Speech and Hearing Clinic.

Hearing Aid Laboratory (Wing D). The DSHS hearing aid dispensary is among the most sophisticated and state-of-the-art clinical laboratories of its kind, anywhere in the state. In addition to a full range of conventional amplification systems the lab is equipped with the latest programmable and digital signal processing instruments. The DSHS hearing aid program was the first in the state to dispense fully digital signal processing (DSP) hearing aids.

Pediatric Audiology Laboratory (CDL). The pediatric audiology laboratory at the Center for Development and Learning is equipped and maintained by DSHS as part of a cooperative arrangement with CDL that involves shared clinical services and training experiences. The laboratory is fully equipped with a large sound suite and instrumentation needed to provide a full range of behavioral and objective audiologic measures including distortion product otoacoustic emissions.

Appendix __

ASHA Standards and Implementations for the CCC in Audiology

Standard IV: Knowledge and Skills Outcomes

- Applicants for certification must have a foundation of prerequisite knowledge and skills.
- Applicants for certification must have acquired knowledge and developed skills in four areas: foundations of practice; prevention and identification; evaluation; and treatment.

Standard IV-A: Prerequisite Knowledge and Skills

- The applicant must have prerequisite skills in oral and written or other forms of communication.
- The applicant must have prerequisite skills and knowledge of life sciences, physical sciences, behavioral sciences, and mathematics

Standard IV-B: Foundations of Practice

- The applicant must have knowledge of :
 - B1 Professional codes of ethics and credentialing
 - B2 Patient characteristics (e.g., age, demographics, cultural and linguistic diversity, medical history and status, cognitive status, and physical and sensory abilities) and how they relate to clinical services
 - B3 Educational, vocational and social and psychological effects of hearing impairment and their impact on the development of a treatment program
 - B4 Anatomy and physiology, pathophysiology and embryology and development of the auditory and vestibular systems
 - B5 Normal development of speech and language
 - B6 Phonologic, morphologic, syntactic, and pragmatic aspects of human communication associated with hearing impairment
 - B7 Normal processes of speech and language production and perception over the life span
 - B8 Normal aspects of auditory physiology and behavior over the lifespan
 - B9 Principles, methods, and applications of psychoacoustics
 - B10 Effects of chemical agents on the auditory and vestibular systems
 - B11 Instrumentation and bioelectrical hazards
 - B12 Infectious/contagious diseases and universal precautions
 - B13 Physical characteristics and measurement of acoustic stimuli
 - B14 Physical characteristics and measurement of electric and other nonacoustic stimuli
 - B15 Principles and practices of research, including experimental design, statistical methods, and application to clinical populations
 - B16 Medical/surgical procedures for treatment of disorders affecting auditory and vestibular systems
 - B17 Health care and educational delivery systems
 - B18 Ramifications of cultural diversity on professional practice

B19 Supervisory processes and procedures

B20 Laws, regulations, policies and management practices relevant to the profession of audiology

B21 Manual communication, use of interpreters, and assistive technology

Standard IV-C: Prevention and Identification

- The applicant must be competent in the prevention and identification of auditory and vestibular disorders. At a minimum, applicants must have the knowledge and skills necessary to:
 - C1 Interact effectively with patients, families, other appropriate individuals and professionals
 - C2 Prevent the onset and minimize the development of communication disorders
 - C3 Identify individuals at risk for hearing impairment
 - C4 Screen individuals for hearing impairment and disability/handicap using clinically appropriate and culturally sensitive screening measures
 - C5 Screen individuals for speech and language impairments and other factors affecting communication function using clinically appropriate and culturally sensitive screening measures
 - C6 Administer conservation programs designed to reduce the effects of noise exposure and of agents that are toxic to the auditory and vestibular systems

Standard IV-D: Evaluation

- The applicant must be competent in the evaluation of individuals with suspected disorders of auditory, balance, communication and related systems. At a minimum, applicants must have the knowledge and skills necessary to:
 - D1 Interact effectively with patients, families, other appropriate individuals and professionals
 - D2 Evaluate information from appropriate sources to facilitate assessment planning
 - D3 Obtain a case history
 - D4 Perform an otoscopic examination
 - D5 Determine the need for cerumen removal
 - D6 Administer clinically appropriate and culturally sensitive assessment measures
 - D7 Perform audiologic assessment using physiologic, psychophysical and self-assessment measures
 - D8 Perform electrodiagnostic test procedures
 - D9 Perform balance system assessment and determine the need for balance rehabilitation
 - D10 Perform aural rehabilitation assessment
 - D11 Document evaluation procedures and results
 - D12 Interpret results of the evaluation to establish type and severity of disorder
 - D13 Generate recommendations and referrals resulting from the evaluation process
 - D14 Provide counseling to facilitate understanding of the auditory or balance disorder

- D15 Maintain records in a manner consistent with legal and professional standards
- D16 Communicate results and recommendations orally and in writing to the patient and other appropriate individual(s)
- D17 Use instrumentation according to manufacturer's specifications and recommendations
- D18 Determine whether instrumentation is in calibration according to accepted standards

Standard IV-E: Treatment

- The applicant must be competent in the treatment of individuals with auditory, balance, and related communication disorders. At a minimum, applicants must have the knowledge and skills necessary to:
 - E1 Interact effectively
 - E2 Develop and implement treatment plan using appropriate data
 - E3 Discuss prognosis and treatment options with appropriate individuals
 - E4 Counsel patients, families, and other appropriate individuals
 - E5 Develop culturally sensitive and age-appropriate management strategies
 - E6 Collaborate with other service providers in case coordination
 - E7 Perform hearing aid, assistive listening device, and sensory aid assessment
 - E8 Recommend, dispense and service prosthetic and assistive devices
 - E9 Provide hearing aid, assistive listening device and sensory aid orientation
 - E10 Conduct aural rehabilitation
 - E11 Monitor and summarize treatment progress and outcomes
 - E12 Assess efficacy of interventions for auditory and balance disorders
 - E13 Establish treatment admission and discharge criteria
 - E14 Serve as an advocate for patients, families, and other appropriate individuals
 - E15 Document treatment procedures and results
 - E16 Maintain records in a manner consistent with legal and professional standards
 - E17 Communicate results, recommendations and progress to appropriate individuals
 - E18 Use instrumentation according to manufacturer's specifications and recommendations
 - E19 Determine whether instrumentation is in calibration according to accepted standards

Appendix ___

Recommended Au.D. Course of Study, American Academy of Audiology

Basic science areas:

- Physics of sound, acoustics, psychoacoustics
- Research methods and statistics
- Speech science and perception
- Computer science
- Electronics, instrumentation and calibration
- Gross anatomy, neuroanatomy and neurophysiology
- Anatomy and physiology of hearing
- Diseases and pathologies of the ear and nervous system
- Related medical diagnosis and treatment
- Embryology and genetics
- Epidemiology
- Radiographic techniques and imaging

General areas of professional instruction:

1. Audiologic assessment
 - Case history/interview techniques
 - Physiologic measurements
 - Electrophysiologic measurements
 - Behavioral tests of auditory function
 - Communication measurement scales
2. Medical considerations
 - Audiologic manifestations of ear disease
 - Clinical diagnosis and evaluation of auditory pathology
 - Clinical decision analysis
3. Clinical decision process/counseling
 - Counseling strategies and techniques
 - Referral procedures and case management
 - Interprofessional relationships and responsibilities
 - Personal and interpersonal dynamics
4. Professional issues
 - Ethical/legal/quality improvement issues
 - Fiscal intermediaries/government agencies
 - Practice management/healthcare marketing
 - Forensic audiology
5. Conservation of hearing and prevention of hearing loss

Public and consumer education
Hearing conservation models
Identification and screening models
Federal/state regulations
Worker's compensation issues

6. Special populations

Educational Audiology
Pediatric audiology
Geriatric audiology
Difficult to test, including developmental disabilities

7. Audiologic habilitation and rehabilitation

Normative developmental models
Auditory training
Visual communication, including speech reading
Manual communication systems and skills
Speech and language of the deaf and hard of hearing
Educational management

8. Management of amplification

Physical and electroacoustic characteristics
Methods of evaluation
Rehabilitative procedures
Dispensing
Assistive devices
Implantable devices

9. Vestibular evaluation

Techniques and procedures
Rehabilitative strategies

**EMPLOYER SURVEY OF GRADUATES
FROM THE DIVISION OF SPEECH AND HEARING SCIENCES
OF THE UNIVERSITY OF NORTH CAROLINA AT CHAPEL HILL
(SPEECH-LANGUAGE PATHOLOGY)**

I. Employer Information

Name and title of person completing form _____
 Organization _____
 Address _____
 Administrative relationship to employee _____
 Employee being evaluated _____
 Length of employment of employee in your organization _____

II. Professional Rating

Please rate on a 1 to 5 rating scale your employee on the basis of professional performance and knowledge in each of the competencies listed below.

observed	Not applicable or not	Poor	Good	Excellent
1. Overall level of professional preparation	0	1	2	3 4 5
2. Understanding of normal speech, hearing, and language development as it relates to professional activities:	0	1	2	3 4 5
3. Assessment of children with communication disabilities:	0	1	2	3 4 5
4. Assessment of adults with communication disabilities:	0	1	2	3 4 5
5. Management of children with communication disabilities:	0	1	2	3 4 5
6. Management of adults with communication disabilities:	0	1	2	3 4 5
7. Record-keeping and report-writing:	0	1	2	3 4 5
8. Interpersonal skills with persons with communication disabilities:	0	1	2	3 4 5
9. Working with families of persons with communication disabilities:	0	1	2	3 4 5

- | | | | | | | |
|---|---|---|---|---|---|---|
| 10. Relating cooperatively to other professionals: | 0 | 1 | 2 | 3 | 4 | 5 |
| 11. Evidence of professional growth and improvement in clinical skills over time: | 0 | 1 | 2 | 3 | 4 | 5 |
| 12. Use of resources (e.g., state, local) to help clients and their families with communication disabilities: | 0 | 1 | 2 | 3 | 4 | 5 |
| 13. Knowledge of health care issues: | 0 | 1 | 2 | 3 | 4 | 5 |
| 14. Cultural competence in working with clients and their families | 0 | 1 | 2 | 3 | 4 | 5 |

**DIVISION OF SPEECH AND HEARING SCIENCES
UNIVERSITY OF NORTH CAROLINA-CHAPEL HILL
SURVEY OF SPEECH-LANGUAGE PATHOLOGY GRADUATES**

I. Background Information

1. Name: _____ Date: _____

Last First Middle
2. Social Security number: _____
3. Current Address: _____
4. Telephone number: (work) _____ (home) _____
5. Date you began the program in the Speech and Hearing Division at UNC-CH: (month) _____ (year) _____
6. Date you graduated from the DSHS program at UNC-CH: (month) _____ (year) _____
7. Did you receive any funding through UNC-CH while in the Speech and Hearing program? _____ (If yes, please describe.)
 Source: _____ From _____ to _____

(month) (year) (month)

 (year)

 Source: _____ From _____ to _____

(month) (year) (month)

 (year)
8. Which of the following certificates do you currently hold?
 CCC-SLP ___ NC Teacher Certificate ___
 Deaf Education ___ CCC-Aud ___
 NON-NC Teacher Certificate Licensure (list states) _____

9. After leaving the program at UNC-CH, did you enroll in another institution for further graduate study? ___ If yes, which university?
 _____ Degree _____ Area of study _____
 Date received or to receive degree _____

II. Clinical Fellowship Year

1. Where were you employed during your CFY? (agency) _____

2. Nature of your work during your CFY (percent of time spent in each activity):

_____ assessment _____ intervention
 _____ continuing education _____ paperwork
 Other: _____

III. Professional setting

1. Current employment setting (agency): _____
 (address) _____
2. Are you employed full-time or part-time? (full-time) _____
 (part-time: indicate hours per week) _____
3. Percent of time spent in each activity:
 _____ assessment _____ intervention _____ consultation
 _____ continuing education _____ paperwork
 Other: _____
4. Is your employment rural? _____ suburban? _____ urban? _____
5. What percentage of your employment time during the last year did you work with:
 0-2 year-olds _____ 13-21 year-olds _____ 70-85 year-olds _____
 3-5 year-olds _____ 21-54 year-olds _____ 85+ year-olds _____
 6-12 year-olds _____ 55-70 year-olds _____

IV. Preparation for your work

Please rate yourself on each of the competencies listed below on a 1 to 5 rating scale:

observed	Not applicable or not	Poor	Good	Excellent
1. Overall level of professional preparation	0	1	2	3 4 5
2. Understanding of normal speech, hearing, and language development as it relates to professional activities:	0	1	2	3 4 5
3. Assessment of children with communication disabilities:	0	1	2	3 4 5
4. Assessment of adults with communication disabilities:	0	1	2	3 4 5
5. Management of children with communication disabilities:	0	1	2	3 4 5
6. Management of adults with communication disabilities:	0	1	2	3 4 5

7. Record-keeping and report-writing:	0	1	2	3	4	5
8. Interpersonal skills with persons with communication disabilities:	0	1	2	3	4	5
9. Working with families of persons with communication disabilities:	0	1	2	3	4	5
10. Relating cooperatively to other professionals:	0	1	2	3	4	5
11. Evidence of professional growth and improvement in clinical skills over time:	0	1	2	3	4	5
12. Use of resources (e.g., state, local) to help clients and their families with communication disabilities:	0	1	2	3	4	5
13. Knowledge of health care issues:	0	1	2	3	4	5
14. Cultural competence in working with clients and their families	0	1	2	3	4	5

V. Your Comments

1. What, in your opinion, are the strengths of the Speech-Language program?

2. What, in your opinion, are the weaknesses of the program?

3. How could the Speech-Language program be improved?

4. Based on your experiences, would you choose to attend the Speech-Language program at UNC again? If “no”, please explain why.

An overview of the racial/ethnic backgrounds of the students pursuing graduate study in the Division of Speech and Hearing Sciences can be seen in Table XX. The data indicate that of the five-year period from 1997-2001

**EMPLOYER SURVEY OF GRADUATES
FROM THE DIVISION OF SPEECH AND HEARING SCIENCES
OF THE UNIVERSITY OF NORTH CAROLINA AT CHAPEL HILL
(AUDIOLOGY)**

I. Employer Information

Name and title of person completing form _____

Organization _____

Address _____

Administrative relationship to employee _____

Employee being evaluated _____

Length of employment of employee in your organization _____

II. Professional Rating

Please rate on a 1 to 5 rating scale your employee on the basis of professional performance and knowledge in each of the competencies listed below.

observed	Not applicable or not	Po	Good	Excellent		
	0	1	2	3	4	5
1. Overall level of professional preparation	0	1	2	3	4	5
2. Understanding of normal speech, hearing, and language development as it relates to professional activities:	0	1	2	3	4	5
3. Assessment of children with communication disabilities:	0	1	2	3	4	5
4. Assessment of adults with communication disabilities:	0	1	2	3	4	5
5. Management of children with communication disabilities:	0	1	2	3	4	5
6. Management of adults with communication disabilities:	0	1	2	3	4	5
7. Record-keeping and report-writing:	0	1	2	3	4	5
8. Interpersonal skills with persons with communication disabilities:	0	1	2	3	4	5
9. Working with families of persons with communication disabilities:	0	1	2	3	4	5

- | | | | | | | |
|---|---|---|---|---|---|---|
| 10. Relating cooperatively to other professionals: | 0 | 1 | 2 | 3 | 4 | 5 |
| 11. Evidence of professional growth and improvement in clinical skills over time: | 0 | 1 | 2 | 3 | 4 | 5 |
| 12. Use of resources (e.g., state, local) to help clients and their families with communication disabilities: | 0 | 1 | 2 | 3 | 4 | 5 |
| 13. Knowledge of health care issues: | 0 | 1 | 2 | 3 | 4 | 5 |
| 14. Cultural competence in working with clients and their families: | 0 | 1 | 2 | 3 | 4 | 5 |

Comments:

_____ assessment _____ intervention

_____ continuing education _____ paperwork

Other: _____

III. Professional setting

1. Current employment setting (agency): _____
(address) _____
2. Are you employed full-time or part-time? (full-time) _____
(part-time: indicate hours per week) _____
3. Percent of time spent in each activity:
 _____ assessment _____ intervention _____ consultation
 _____ continuing education _____ paperwork
 Other: _____
4. Is your employment rural? _____ suburban? _____ urban? _____
5. What percentage of your employment time during the last year did you work with:
 0-2 year-olds _____ 13-21 year-olds _____ 70-85 year-olds _____
 3-5 year-olds _____ 21-54 year-olds _____ 85+ year-olds _____
 6-12 year-olds _____ 55-70 year-olds _____

IV. Preparation for your work

Please rate yourself on each of the competencies listed below on a 1 to 5 rating scale:

observed	Not applicable or not	Poor	Good	Excellent
1. Overall level of professional preparation	0	1	2	3 4 5
2. Understanding of normal speech, hearing, and language development as it relates to professional activities:	0	1	2	3 4 5
3. Assessment of children with communication disabilities:	0	1	2	3 4 5
4. Assessment of adults with communication disabilities:	0	1	2	3 4 5
5. Management of children with communication disabilities:	0	1	2	3 4 5
6. Management of adults with communication disabilities:	0	1	2	3 4 5
7. Record-keeping and report-writing:	0	1	2	3 4 5
8. Interpersonal skills with persons with communication disabilities:	0	1	2	3 4 5
9. Working with families of persons with communication	0	1	2	3 4 5

disabilities:

- | | | | | | | |
|---|---|---|---|---|---|---|
| 10. Relating cooperatively to other professionals: | 0 | 1 | 2 | 3 | 4 | 5 |
| 11. Evidence of professional growth and improvement in clinical skills over time: | 0 | 1 | 2 | 3 | 4 | 5 |
| 12. Use of resources (e.g., state, local) to help clients and their families with communication disabilities: | 0 | 1 | 2 | 3 | 4 | 5 |
| 13. Knowledge of health care issues: | 0 | 1 | 2 | 3 | 4 | 5 |
| 14. Cultural competence in working with clients an their families: | 0 | 1 | 2 | 3 | 4 | 5 |

Appendix __.

Undergraduate Institution of Higher Education of Admitted Students over the past five years

Appalachian State University
Auburn University
Bennett College
Brown University
Colorado College
Duke University
Elmira College
East Carolina University
Florida International University
Hampton University
James Madison University
Loyola College
Meredith College
Miami University
Niagara University
North Carolina State University
Northern Arizona University
Ohio State University
Pennsylvania State University
SUNY College at Buffalo
SUNY College at New Platz
Texas Christian University
Swarthmore College
Universite Catolica de Manizaks
University of Arizona
University of Arkansas
University of California Davis
University of Cincinnati
University of Connecticut
University of Florida
University of Georgia
University of Illinois Urbana-Champaign
University of Iowa
University of Kansas
University of Kentucky
University of Maryland College Park
University of Massachusetts Amherst
University of Memphis
University of New Hampshire
University of New Mexico
University of North Carolina Chapel Hill

University of North Carolina Greensboro
University of South Florida
University of Southern Mississippi Hattiesburg
University of Virginia
University of Vermont
Wake Forest University
West Virginia University
Washington State University
Wellesley College
Western Carolina University

Appendix __. Division of Speech and Hearing Sciences Practicum Sites

Alamance Children's Center
Alamance Regional Medical Center
Anchor Speech & Hearing Services
Ballard Therapy Services
Bright Audiology and Speech
Carolina Pediatric Dysphagia
Carolina Speech Therapy
Center for Speech Improvement
Charlotte-Mecklenburg Hospital
Clinical Center for the Study of Development and Learning (1)
Community Partnerships, Inc.
CRF Associates
Cued Speech Center
Developmental Therapy Associates
Dorothea Dix Hospital
Durham Developmental Evaluation Center
Durham Veteran's Administration Medical Center
Elizabeth City Developmental Evaluation Center
Elizabeth City State University
Emory Hospitals
Fayetteville Developmental Evaluation Center
Fayetteville VA
FirstHealth of the Carolinas / Moore Regional Hospital (2)
Goldsboro Physical Therapy (Wayne Memorial Hospital)
Granville Medical Center
Hillcrest Manor
John Umstead Hospital - Butner, NC
LaSalle Rehab & Healthcare
Ling & Kerr Rehab Services
McLeod Regional Medical Center
Morehead Memorial Hospital
Murdoch Center
NovaCare, Inc.
Raleigh Community Hospital
Raleigh Developmental Evaluation Center
Raleigh Pediatric Therapy
Rex Healthcare
Sara Barker Center
Scottish Rite Children's Medical Center
Shigley Family Services
Southeastern Regional Rehab Center / Cape Fear Valley

Medical Center
Special Children's School
Southeastern FEES
Total Rehabilitation
Triangle ENT (Christine Parton-Burkett)
UCP - Charlie Gaddy Center (filed under Charlie Gaddy Center)
UNC Hospitals Hearing and Speech Clinic
Wake Medical Center
Vann-Hunt and Associates
Virginia Wellford
Womack Army Hospital
Wright School