Audiology Education Summit: A Collaborative Approach

January 13–15, 2005
Fort Lauderdale, Florida

CONFERENCE REPORT

Sponsored by:
- American Speech-Language-Hearing Association
- Council on Academic Accreditation in Audiology and Speech-Language Pathology
- Council of Academic Programs in Communication Sciences and Disorders
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Executive Summary

Through a joint initiative of the American Speech-Language-Hearing Association (ASHA), the Council on Academic Accreditation in Audiology and Speech-Language Pathology (CAA), and the Council of Academic Programs in Communication Sciences and Disorders (CAPCSD), the conference “Audiology Education Summit: A Collaborative Approach” was held on January 13–15, 2005, at the Westin Hotel in Fort Lauderdale, Florida.

This 2½-day Summit assembled academic and clinical educators from clinical doctoral programs in audiology and representatives from clinical facilities and related professional organizations. The purpose of the Summit was to identify and describe indicators of quality that could be used to assist programs in developing, evaluating, and enhancing clinical doctoral education in audiology and to provide data, information, and direction sufficient to assist the CAA in drafting revised standards for accreditation. The Summit was designed to allow participants to reach general levels of agreement on the characteristics of clinical doctoral programs in audiology that would optimally prepare students to become desirable, employable professionals. Although the process used to reach agreement was structured in advance, there was no attempt to predetermine specific conference outcomes.

The Summit focused on four major topic areas: (a) Academic Curriculum: Breadth and Depth, and Students; (b) Clinical Curriculum: Breadth and Depth; (c) Faculty, Resources, and Assessment; and (d) Interactions: Academic and Clinical Relationships. Individual speakers made brief presentations on each of the four topic areas to provide an overview of the issue and to pose questions to the conference participants. Following each presentation, the participants divided into small breakout groups, which were predetermined to achieve a balance of academic faculty, clinical faculty, clinical practitioners, small and large institutions, and various work settings. The groups were asked to identify characteristics or indicators of a quality clinical doctoral program and to categorize these characteristics as Essential (or required), Above Essential (desirable), or Below Essential for a quality program.

Conference participants were able to agree upon many Essential elements of quality doctoral education; these Essential elements are described within the full conference report along with the salient discussion that occurred during the decision making process. On many issues related to quality doctoral education in audiology, the general level of agreement among conference participants was notable. Participants also identified a number of topics related to doctoral education in audiology that warrant additional consideration at future meetings or conferences. These topics are identified and discussed in the full conference report.

At the conclusion of the Summit, participants indicated a desire for a second Audiology Education Summit specifically designed to explore and address issues related to the clinical education of audiology doctoral students. Issues such as qualifications of sites, qualifications of supervisors/mentors/preceptors, credentialing, reimbursement, and stipends were specifically targeted as warranting further discussion. At the time of the writing of this report, the three sponsoring organizations (ASHA, CAA, and CAPCSD) and the American Academy of Audiology have agreed to conduct an Audiology Education Summit II in early 2006 with a specific focus on these clinical education issues.
Introduction

In light of the expanding scope of practice for the profession of audiology, the increasing need for hearing health care services, and changes in the requirements for entry into professional practice in audiology, it is critical that the audiology community examine all components of the academic and clinical education and preparation of audiologists at the doctoral level. Thus, through a joint initiative of the American Speech-Language-Hearing Association (ASHA), the Council on Academic Accreditation in Audiology and Speech-Language Pathology (CAA), and the Council of Academic Programs in Communication Sciences and Disorders (CAPCSD), the conference “Audiology Education Summit: A Collaborative Approach” (Summit) was held on January 13–15, 2005, at the Westin Hotel in Fort Lauderdale, Florida.

This 2½ day conference was designed to assemble academic and clinical educators from university clinical doctoral programs in audiology and representatives from clinical facilities and related professional organizations to identify and describe indicators of quality for clinical doctoral education programs. It was hoped that a reasonably high level of agreement could be reached on the quality indicators.

The conference participants (see Appendix H) included 90 individuals representing approximately 47 education programs, eight clinical sites, and the Summit co-sponsors. Invitations to the Summit were extended to the following groups, organizations, and facilities:

- All audiology program academic and clinical directors
- Educational audiologists in large school systems
- Major hospitals and student clinical sites
- National Council of State Boards of Examiners
- ASHA Special Interest Divisions 6 (Hearing and Hearing Disorders: Research and Diagnostics); 8 (Hearing Conservation and Occupational Audiology); 9 (Hearing and Hearing Disorders in Childhood); 10 (Issues in Higher Education); and 11 (Administration and Supervision)
- Academy of Dispensing Audiologists
- Academy of Rehabilitative Audiology
- Accreditation Commission for Audiology Education
- American Academy of Audiology
- Educational Audiology Association

Summit Purposes and Goals

The purpose of this Summit was to identify and describe indicators of quality that could be used to assist programs in developing, evaluating, and enhancing clinical doctoral education in audiology. The goals of the Summit were to provide a general summary of the issues discussed; to provide data, information, and direction sufficient to assist CAA in drafting revised standards for accreditation; and to serve as a guide for education programs in developing, evaluating, and enhancing clinical doctoral education in audiology.
Background and Summit Planning

At its January 2004 meeting, the ASHA Executive Board (EB) appointed an Ad Hoc Subcommittee on Audiology Education to develop a strategic initiative related to the training of students in doctoral audiology programs. The subcommittee included Neil Shepard and Stephanie Davidson from the EB, and ASHA staff members Vic Gladstone, Pam Mason, Loretta Nunez, and Patti Tice. After discussion and collaboration with the Council on Academic Accreditation in Audiology and Speech-Language Pathology (CAA), the group prepared a report to the EB and presented a resolution for ASHA to co-sponsor (with CAA) a conference on the education of audiologists. The EB passed the resolution in April 2004 to support the planning for the conference, the topics of discussion, and the outcomes for the conference, which were to be further developed by an advisory committee.

An advisory committee (Committee) was established to include three representatives each from ASHA, the CAA, and the Council of Academic Programs in Communications Sciences and Disorders (CAPCSD). The American Academy of Audiology (AAA) also was invited to participate in the planning for the conference but did not accept the invitation. Each of the named organizations identified representatives to be members of the Committee and included the following (see Appendix B):

- Dennis Burrows, Committee Chair (CAA)
- Stephanie Davidson (ASHA)
- Neil DiSarno (CAPCSD)
- Vic S. Gladstone (ASHA)
- Larry Higdon (ASHA)
- James Mahshie (CAPCSD)
- Lisa Lucks Mendel (CAPCSD)
- Loretta Nunez (ASHA staff ex officio)
- George Purvis (CAA)
- Neil Shepard (ASHA)
- Richard Talbott (CAA)
- Patti Tice (ASHA staff ex officio)

The development of the Committee and the leadership of the group during the planning meetings were the responsibility of the CAA and ASHA EB appointees. The final topics of discussion at the conference and the definition of the final outcomes of the conference were the responsibility of the Committee itself. The advisory committee had three face-to-face planning meetings and a series of conference calls in 2004 to plan the format and design of the Summit and to identify specific topics and questions to be addressed at the conference. The ASHA National Office staff assisted in the logistics for the meetings of the advisory committee and the conference, and ASHA supported the activities by providing partial funding to cover expenses for the members of the Committee and by providing a meeting location for each of the three planning meetings. ASHA also provided support for the conference to include advertising and registration organization, record keeping, and the production of the conference report with the assistance of the advisory committee.
Summit Format and Design

The Committee developed an agenda for the 2½ day Summit (see Appendix A) that included invited presentations, small breakout sessions, and large group discussions. A professional facilitator was engaged to provide overall direction and facilitation during the entire meeting. The length of the conference allowed time for discussing designated topics and reaching general levels of agreement within small groups and plenary sessions. ASHA continuing education credits also were offered to attendees who were present for the entire conference.

The Summit opened with a session to present a broad overview of the purpose of the conference and the expected outcomes for the meeting, and to review the historical information about the various activities, discussions, and conferences that have been held since 1987 regarding the development of clinical doctoral education in audiology.

The conference also included an opportunity for attendees to participate in a poster session at the close of the first day of the meeting. This session was intended for participants from academic programs and clinical sites to share innovative, unique, and creative ways in which they engage audiology students during the clinical doctoral program. Posters were required to include content that supported the main themes or topic categories of the conference. A total of 13 individuals and organizations presented posters (see Appendix G), which were well received by the attendees.

The advisory committee had determined to limit the content of the conference to four major topic areas: Academic Curriculum: Breadth and Depth, and Students; Clinical Curriculum: Breadth and Depth; Faculty, Resources, and Assessment; and Interactions: Academic and Clinical Relationships. The committee had invited individual speakers to make brief presentations on each of the four major topic areas to provide an overview of the issue and to pose questions to the group to stimulate their thinking and “whet their appetite” for the subsequent small group breakout sessions. Following each presentation, the participants then divided into small breakout groups, which were predetermined to achieve a balance of academic faculty, clinical faculty, clinical practitioners, small and large institutions, and various work settings. The groups discussed specific questions developed by the advisory committee for each topic area, which were randomly assigned to each group, related to the preceding invited presentation (see Appendix D for a list of the breakout group assignments). Each group was assigned a facilitator and a recorder who had received specific training the evening before the conference on the process to be followed during the breakout sessions. The decision-making process followed during the breakouts and the large group sessions is described in the following section of this report.

On the last half-day of the Summit, the advisory committee provided to each of the participants an unedited preliminary written summary of the conference, which the committee had prepared following the last session on Saturday. The summary included characteristics proposed as "below essential," "essential," and "above essential" by each of the breakout groups, as well as any comments from the plenary sessions. After reading the preliminary summary, the full group had an opportunity to offer comments on any of the information provided to clarify intent and to aid the writers of the final conference proceedings. Several note-takers recorded the specific comments and general themes of...
the discussion. At the conclusion of the conference, participants were cautioned regarding the use of the draft summary because it would be difficult to interpret and apply some of the statements made in the summary apart from the context of the small and large group discussions.

**Decision-Making Process**

The conference was designed to achieve general levels of agreement on optimal characteristics of quality clinical doctoral programs in audiology that prepare students to become desirable, employable professionals. Although the process used was structured in advance, there was no attempt to predetermine specific outcomes. The process was designed to promote and encourage general levels of agreement within defined breakout sessions and plenary sessions.

The steps followed during each of the breakout sessions are described below. Approximately 1½ hours were allowed for each of the breakout discussions. The groups were asked to identify characteristics or indicators of a quality clinical doctoral program and to categorize these characteristics as Essential (or required), Above Essential (desirable), or Below Essential for a quality program. Participants were invited to “take off their hat” as a program director or academic or clinical faculty member, and to envision the characteristics a quality doctoral program would need in order to produce the “ideal audiologist,” rather than identify only the characteristics that their individual program, or one in which the participant may be affiliated, might have.

**Step 1: Brainstorm**

- Under the direction of a facilitator, small breakout groups (7–8 members each) brainstormed to list characteristics or indicators that addressed the specific predetermined questions. Each group named a scribe to list the characteristics on a flip-chart and a time-keeper to keep the group on schedule and complete the assignment. Facilitators were instructed to encourage participants to share any elements (i.e., characteristics that may be deemed as too low or too high at first glance), to indicate that there was no single correct answer to the questions posed, to encourage a range of attributes, and to keep the discussion moving.

**Step 2: Vote**

- The group then categorized the identified characteristics or indicators into three “bins” (Essential, Above Essential, Below Essential). The group voted by a show of hands which indicators fit into which bin. If all were in general or “reasonable agreement” (defined as at least a simple majority) about the indicator, the group proceeded to the next item.
Step 3: Discuss

- The group discussed any issues that needed further clarification or a specific rationale provided for its decisions. If necessary, groups could then re-vote on those issues to place the characteristic in a different category.

Recorders for each group then listed the characteristics or indicators on a standard reporting template (see Appendix C) and captured, to the best of their ability, any rationale for the indicators listed and recorded the bin designation for each characteristic as well as the vote, if it was not unanimous.

Compilation

Following the completion of each breakout session, the facilitators and recorders reviewed the notes and finalized the report for the group on that specific topic. If more than one group discussed the same question, members of the advisory committee then compiled the responses from each group and consolidated items in the categories of Essential, Above Essential, and Below Essential. If an element was identified by different groups but categorized in a different bin, this issue was highlighted and used as a point of discussion during the summary in the large group.

Group Summary Reports

Following each of the breakout sessions, the Summit participants reconvened as a whole. One of the facilitators for each breakout group reported the results of his or her individual group’s discussion. The facilitator highlighted any areas where there was not agreement. The meeting facilitator and a member of the advisory committee moderated the large group discussion after each summary report to determine if any items needed further clarification or discussion on any of the characteristics/indicators or on any of the bin designations.

Conference Documentation

As noted above, at the conclusion of the meeting all participants were provided an unedited preliminary summary of the Summit discussions. This document listed the various Essential indicators of quality identified by the breakout groups on which there was general agreement, issues identified as needing further discussion, and a listing of additional issues identified by the large group in open forum for possible future discussion.

An ad hoc report writing group was identified from among the members of the advisory committee to prepare this report and included one representative from each of the three sponsoring organizations (ASHA, CAA, and CAPCSD). This group, which included Dennis Burrows (CAA), Stephanie Davidson (ASHA), and Neil DiSarno (CAPCSD), drafted the Summit report to ensure that the resultant documentation accurately and concisely represents the outcomes of the conference and provided it to the full advisory committee for final approval. A preliminary report was provided by the members on the Committee who represented CAPCSD at the CAPCSD conference in April 2005 in
Scottsdale, Arizona. This final report is being disseminated to all Summit participants and to the three sponsoring organizations for use and distribution as they deem appropriate for their constituents.

**Summit Presentations**

As noted above, the advisory committee invited individual speakers to make brief presentations on each of the four major topic areas to provide an overview of the issue and to pose questions to the group to stimulate their thinking for the subsequent small group breakout sessions. In addition, advisory committee Chair, Dennis Burrows, made an opening presentation and provided background and historical information about the various activities, discussions, and conferences that have been held since 1987 regarding the development of audiology education and described the outcomes expected of the Summit.

Speakers for the four major topics areas were as follows:

- **Academic Curriculum and Students**—Dianne H. Meyer, PhD, Rush University
- **Clinical Curriculum**—Gary P. Jacobson, PhD, Vanderbilt University Bill Wilkerson Center
- **Faculty, Resources, and Assessment**—Robert E. Novak, PhD, Purdue University
- **Interactions: Academic and Clinical Relationships**—Neil J. DiSarno, Missouri State University (substituting for Lisa Lucks Mendel, who had prepared the presentation but was ill)

Each of these presentations is included in Appendix E.
Conference Topics and Questions

The participants discussed the following questions during the Summit, which had been developed by the advisory committee during its face-to-face and conference call meetings.

I. ACADEMIC CURRICULUM: BREADTH AND DEPTH AND STUDENTS

Breadth and Depth

1. What are the characteristics of an optimal academic curriculum that addresses the full breadth and depth of the scope of practice?

2. What are the research competencies expected of graduates of an optimal clinical doctoral program?

3. Within the academic curriculum, how does the optimal clinical doctoral program ensure that cultural competence is attained by graduates of its program?

Students

4. What are the desirable characteristics that students entering clinical doctoral audiology programs should possess?

5. What is the optimal size of the student cohort?

II. CLINICAL CURRICULUM: BREADTH AND DEPTH

1. What are the characteristics of optimal clinical experiences (e.g., clinical practicum, grand rounds, externships) that address the full breadth and depth of the scope of practice?

2. What are the qualifications of the off-campus clinical supervisors/preceptors in a quality clinical doctoral program in audiology?

3. What are the optimal methods used for clinical supervisors to communicate appropriate feedback?

4. What are clinical supervisors’ expectations of students when placed in off-site clinical experiences?
III. FACULTY, RESOURCES, AND ASSESSMENT

Faculty

1. What is the optimal number (critical mass) of on-campus faculty for a quality clinical doctoral program in audiology?

2. What is the optimal balance and use of on-campus research faculty and on-campus clinical faculty in a quality clinical doctoral program in audiology?

3. What are the qualifications of the on-campus academic (teaching/research) and clinical (supervising) faculty in a quality clinical doctoral program in audiology? (Faculty members could serve in both academic and clinical roles.)

Resources

4. What are the optimal resources, including budget elements, that contribute to a quality clinical doctoral program in audiology?

Assessment

5. What are the elements of assessment of student acquisition of knowledge and skills in a quality clinical doctoral program in audiology?

6. What are the elements of program assessment for quality clinical doctoral programs in audiology?

IV. INTERACTIONS: ACADEMIC AND CLINICAL RELATIONSHIPS

1. What are the characteristics of optimal interactions and relationships between the academic and clinical curricula?

2. What are the characteristics of optimal interactions and relationships between the clinical doctoral program and off-site clinical experiences?

3. What are the characteristics of optimal interactions and relationships between the research and clinical training?

4. What are the characteristics of optimal interactions and relationships between the university and the community?
DISCUSSION SUMMARIES

The following summary of the discussions regarding each of the questions considered during the Summit includes the specific characteristics or elements that the groups identified, and on which they had at least general agreement, as Essential for a quality clinical doctoral program in audiology. Following the characteristics is an explanation of the salient points made during the discussion related to that particular Essential element. If the groups identified any characteristics as being Above Essential for a quality doctoral program, that information also is included.

There were some instances, when multiple breakout groups considered the same question, in which there were variations among the groups in the level of agreement or the specific categorization of characteristics as Essential or Above Essential. In some of these cases, the full group was not able to reach resolution on these apparent inconsistencies. Any such variations are addressed in the Salient Discussion section.

Further, if a particular topic or question was so complex or a discussion so diverse that the breakout groups or full group could not reach general levels of agreement, the issue was targeted for further consideration at future meetings. All of these topics are noted in the following section as Issues for Future Discussion.

I. ACADEMIC CURRICULUM: BREADTH AND DEPTH AND STUDENTS

Breadth and Depth

1. What are the characteristics of an optimal academic curriculum that addresses the full breadth and depth of the scope of practice?

Summit participants agreed that the following characteristics are Essential and Above Essential elements of the academic curriculum in a quality doctoral program:

Essential

- The academic curriculum covers the breadth of the scope of practice, but not all aspects of the scope of practice need to be covered to the same depth.
- The academic curriculum fully integrates science, research, and practice.
- Laboratory experiences are part of the curriculum, where appropriate.
- The curriculum is regularly reviewed to ensure currency and relevance to program goals.

Above Essential

- Program specialization is available, but not at the expense of the breadth of the student experience.
Salient Discussion

Individuals in both small groups assigned to this question believed that the breadth of the scope of practice must be covered, but that all areas need not receive the same depth of coverage. Both small groups believed that programs should have the flexibility to create areas of specialization for their students, as long as it isn’t at the expense of the breadth of student training. Discussion also focused on defining “core” versus “peripheral” elements in the scope of practice, but consensus was not reached in this area.

Much of the small and large group discussion focused on the number of credit hours (or program length) needed to cover the breadth and depth of the audiology scope of practice. While participants agreed that clinical doctoral programs must have significantly more credit hours than master’s programs (one group proposed 90 didactic hours based on number of courses that would be needed to cover the breadth of the scope of practice), consensus regarding the optimal number of didactic credit hours could not be reached. Both small groups discussing this question also noted the fundamental tension between the desire to mandate an Essential number of didactic hours (or program length) and the current focus on student outcomes, which inherently de-emphasizes concepts like program length or number of credit hours.

One group also deliberated on the optimal balance between course work taken within and outside the “home” communication sciences and disorders department. Although no consensus regarding the optimal balance was reached, it was generally agreed that the majority of course work should be offered within the home department and that there is value in having students obtain specialized knowledge from experts in departments outside of the discipline of communication sciences and disorders.

Because no agreement could be reached on the issue of the optimal number of didactic hours, this area was targeted for further consideration at future meetings or conferences.

Note: Summit participants later agreed to engage in added small and large group discussion on the topic of program length. A summary of these discussions follows.

2. What is the optimal length of a quality clinical doctoral program in audiology?

A small and large group discussion period that focused specifically on the length of a quality clinical doctoral program was added to the agenda at the request of Summit participants. The majority of Summit participants agreed to the following:
Essential

- Clinical doctoral programs in audiology ordinarily require a period of 4 years to adequately prepare students to cover the breadth and depth of the Scope of Practice in Audiology.

Salient Discussion

The vast majority of summit participants believed that a 4 year clinical doctoral program is needed to prepare students for professional practice in audiology. Participants did acknowledge that data do not exist to indicate that students trained in 3 year programs are less competent than students trained in 4 year programs. They also acknowledged that program length alone does not ensure adequate student outcomes. However, summit participants felt that there are a number of compelling reasons for requiring a 4 year program, including the following:

- Four years is necessary to educate students to meet the full breadth and depth of the scope of practice.
- Students gain confidence and maturity when integrating knowledge and skills over 4 years.
- Clinical doctoral programs must look significantly different than master’s programs with a clinical fellowship.
- A 4 year doctoral program is required to put the profession on an equal footing with other “doctoring” professions.

Participants spent a significant amount of time discussing how best to define a year (e.g., calendar year [12 months], academic year [9 months], semesters, weeks), but no final definition was determined. Although it was not part of the question posed, two small groups specifically indicated that the 4th year should be devoted to a full-time externship.

3. What are the research competencies expected of graduates of an optimal clinical doctoral program?

Summit participants agreed that the following research requirements are considered Essential and Above Essential in clinical doctoral programs:

Essential

- Student research experiences should vary depending on the specific clinical doctoral degree obtained (e.g., AuD or PhD).
- Research should be integrated into courses and experiences throughout the curriculum.
- Students must have the knowledge and skills needed to be critical consumers of research.
• Students must have the knowledge and skills needed to use evidence-based practice.
• All students should participate in a “research-focused” project.

Above Essential

• Programs should provide opportunities for AuD students to complete independent research projects.

Salient Discussion

An important area of small group discussion focused on the fact that student research competencies are likely to vary from program to program for the following reasons: (a) different degrees may be offered (AuD vs. PhD), (b) the role of research will vary according to a particular university’s mission, and (c) degree programs may be defined differently across universities (professional degrees vs. graduate degrees). However, the small and large groups agreed that all clinical doctoral students in audiology must be prepared to be “critical consumers” of research (i.e., students must understand the scientific method, study design, research ethics, and statistics) and must have the knowledge and skills needed to use evidence-based practice (i.e., students must be able to ask clinical questions and then must be able to evaluate the literature related to those questions). It was also generally agreed that all students should participate in research at some level (e.g., case study, literature review and synthesis, participation in faculty research, etc.), and that students in clinical PhD programs must engage in independent research.

Given the complexities of the issue, Summit participants specifically targeted the area of expected research competencies of AuD students as one for further discussion.

4. Within the academic curriculum, how does the optimal clinical doctoral program ensure that cultural competence is attained by graduates of its program?

Summit participants agreed that the following mechanisms are Essential or Above Essential for ensuring that cultural competence is attained by the graduates of a quality clinical doctoral program:

Essential

• Issues related to cultural competence are infused throughout the curriculum.
• Instruction in cultural competence should comprise both social and professional issues.
• The program takes measures to recruit a diverse student body.
Above Essential

- The program offers a course specific to cultural issues in communication sciences and disorders.

Salient Discussion

The small group discussing this question originally suggested that the term *cultural competence* be changed to *cultural awareness*. This recommended change sparked an intense response during the large group discussion period. Several participants expressed serious reservations concerning the change, stating that the discipline had moved well beyond cultural awareness and that cultural competence should be the goal. Because most large group participants tended to agree, the question remains in its original form in this report.

Individuals in both the small and large groups indicated the need to consider the demographics of the area in which the program is located. Programs in regions of the country with limited diversity will be less likely to have a diverse student body or to see diverse patient populations in their on-campus clinics. Participants cautioned that this, in and of itself, should not be considered inappropriate as long as additional mechanisms are in place to ensure cultural competence in program graduates.

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Students

5. *What are the desirable characteristics that students entering clinical doctoral audiology programs should possess?*

Summit participants agreed that the following characteristics are Essential or Above Essential for students entering clinical doctoral programs:

Essential

- prerequisite preparation in math and the basic sciences
- personal characteristics (e.g., maturity, professionalism, flexibility, cultural sensitivity, responsibility for learning, respect for others) to ensure success in the classroom and clinic
- skills (e.g., oral and written communication, critical thinking, problem solving) to ensure success in the classroom and clinic
- ability to meet the essential functions of an audiologist (i.e., possess the requisite physical and sensory abilities) as defined by the program
- awareness of the expectations and demands (financial, emotional, commitment) of a clinical doctoral program
Above Essential

- facility with more than one language

Salient Discussion

The small group discussion focused on the characteristics that are necessary for students to be successful in their clinical doctoral programs and later as practicing professionals. As noted above, summit participants articulated a number of personal characteristics and skills that students should possess. Although participants spent a considerable amount of time discussing how each of these characteristics and skills might best be measured, no consensus was reached on the optimal measurement methods.

Participants indicated that students in clinical doctoral programs must be able to meet the essential functions of an audiologist (i.e., possess requisite physical and sensory abilities), but caution was expressed by those in the large group because essential functions have not been well defined by the profession. Participants also briefly discussed educating students with disabilities (particularly those with hearing loss), but this topic was determined to be beyond the scope of this Summit.

Small and large group participants generally agreed on the need for students to possess a strong basic science background to include courses in math and statistics as well as the physical, behavioral, biological, and social sciences. There was general agreement that it was not Essential for students to possess a background in communication sciences and disorders, provided the graduate program had mechanisms for dealing with students who enroll without this background.

Even though summit participants agreed on some basic aspects of undergraduate preparation (e.g., more math and science needed), participants expressed the need to explore the area of undergraduate preparation in more detail, particularly related to the specific prerequisite coursework needed from inside and outside of the discipline.

6. What is the optimal size of the student cohort?

Summit participants could not come to agreement on the optimal size of the student cohort in a quality clinical doctoral program.

Salient Discussion

Although the small and large group participants believed that a “critical mass” of students is necessary to create a dynamic learning environment and to allow the program to succeed financially, no agreement on the minimum size of the student cohort could be reached. Participants also were not able to determine a maximum size of the student cohort, as it was believed that the maximum size would be dependent on a host of variables such as the size of the faculty, the number and variety of
practicum sites available to the students, and the overall resources of the program. Small group participants emphasized the need to discuss creative supervision models to increase clinical practicum efficiency, giving due consideration to professional ethics and federal and state guidelines.

Because agreement could not be reached on the optimal size of the student cohort, Summit participants targeted this area for future consideration.
II. CLINICAL CURRICULUM: BREADTH AND DEPTH

1. What are the characteristics of optimal clinical experiences (e.g., clinical practicum, grand rounds, externships) that address the full breadth and depth of the scope of practice?

Summit participants agreed that the following items were Essential to providing an optimal clinical experience for clinical doctoral students in audiology. Above Essential items were viewed as worth pursuing, but not absolutely necessary.

Essential

- The clinical practicum should promote a progression of student skills and didactic instruction leading to independence. Supervision should reflect this progression and be commensurate with the clinical skills of the student.
- Clinical practicum sites should be adequately diverse to cover the full breadth and depth of the scope of practice.
- Students should begin obtaining clinical experience during their first semester commensurate with their background and knowledge.
- Student skill development should be regularly monitored, with regular feedback provided to students, to promote clinical skills. Clinical skill expectations should be explicit at every clinical training phase.
- Clinical practicum opportunities should be provided that allow sufficient practice and repetition to ensure skill mastery.
- Clinical experiences should include instruction in ethical practice and provide guidance regarding practitioner limitations and obligations.
- Evidence-based practice should be integral to clinical practicum experiences.
- Opportunities beyond clinical practicum (grand rounds, case studies, staffing, etc.) should augment the experience.

Salient Discussion

There was overwhelming agreement that it was important that the clinical practicum and didactic instruction reflect the distribution of activities in a contemporary audiology practice. Further, students should advance through clinical practicum not on the basis of accumulated clinical hours but on the acquisition of the necessary clinical skills. The acquisition of these skills should be monitored closely and documented, and feedback should be provided to the student. Initial supervision should be intense (i.e., 100% face-to-face), with a gradual progression to less face-to-face supervision and eventual independence.

The group agreed that identification of quality external practicum sites is critical to the training of audiologists. To this end, some discussion ensued regarding the recognition and “accreditation” of clinical sites. The group did not reach agreement on whether there should be an “accrediting” process for practicum sites. This topic was targeted as one for further consideration at future meetings.
Above Essential

- didactic and clinical opportunities for specialized skills and knowledge (intraoperative monitoring etc.)

2. *What are the qualifications of the off-campus clinical supervisors/preceptors in a quality clinical doctoral program in audiology?*

The topic of supervisor/preceptor qualifications provided the opportunity for a discussion about minimum educational, experiential, and credentialing requirements. Additionally, supervisor/preceptor attitude and/or readiness for clinical teaching were addressed. Methods for compensating and evaluating clinical supervisors/preceptors were discussed.

Summit participants agreed that the following qualifications are Essential and Above Essential for off-campus clinical supervisors/preceptors in a quality clinical doctoral program:

**Essential**

- Regarding personal characteristics, supervisors/preceptors should:
  - o demonstrate a desire to teach and/or mentor a student clinician;
  - o have the necessary interpersonal and communication skills for mentoring a student;
  - o have the same interpersonal, counseling, and communication skill set required of students; and
  - o have a clear understanding of the needs and role of a student clinician.
- Supervisors/preceptors should hold licensure and/or registration when required by state law.
- Non-audiology supervisors/preceptors should have the appropriate licensure, degree, and/or certification necessary for practice in his or her own profession.
- Supervisors/preceptors should provide evidence of continuing professional development.
- Supervisors/preceptors should be active professionally by belonging to professional organizations and participating in professional activities and committees.
- Supervisors/preceptors should have some training in clinical supervision.
- Supervisors/preceptors should be regarded highly in the professional community.
- Supervisors/preceptors should, in the future, have a doctoral degree, when sufficient numbers of practitioners hold the doctoral degree, but allowances for truly outstanding “master” clinicians should be made.
- Supervisors/preceptors must adhere to the professional code of ethics.
- Supervisors/preceptors should be compensated either monetarily or in some other non-monetary form (adjunct faculty status, library/university privileges, workshops, etc.)

**Salient Discussion**

A significant portion of the discussion regarding supervisor/preceptor qualifications revolved around the interpersonal skills of the individual. It was important to the group that supervisors/preceptors have well developed interpersonal skills and the maturity
necessary to assume the role of a mentor. These individuals should be chosen on the basis of their desire, commitment, and passion for clinical teaching. Professional reputation and ethics should be beyond reproach and, in regard to professional activity, extraordinary. A clear understanding of students and supervision is critical to a successful clinical practicum.

Group participants varied in their perceptions of the qualifications of individual supervisors/preceptors. At a minimum, supervisors/preceptors need to hold the appropriate licenses for the jurisdiction in which they practice. National certification for audiologists, while desirable, was deemed as Above Essential for supervision. There was no clear consensus regarding a minimum number of years of postgraduate experience necessary to be a supervisor/preceptor. However, it was acknowledged that recent graduates would not have the necessary clinical skills and expertise needed to be effective supervisors. The eventual requirement that supervisors/preceptors hold the doctoral degree was overwhelmingly agreed upon. It was noted that there needs to be a delay in implementing this recommendation since there may not be adequate numbers of qualified doctoral level practitioners.

The continuing education of supervisors/preceptors was deemed important. Adequate instruction in the specific university supervision requirements and needs (i.e., paperwork, evaluation tools, etc.) as well as general instruction in supervision was recommended. While it was not agreed that an external body “rating” supervisors was necessary, it was agreed that a method of evaluating supervisor skills should be developed.

**Above Essential**

- national certification (ASHA and/or American Board of Audiology)
- an external body to evaluate and rate external supervisors/preceptors
- specialty certification or recognition (audiologists and non-audiologists)

3. **What are the optimal methods used for clinical supervisors to communicate appropriate feedback?**

Summit participants agreed on the following Essential methods for clinical supervisors to communicate feedback in a quality clinical doctoral program:

**Essential**

- formalized skill assessment tool developed by the program that is consistently applied across all practicum sites
- periodic informal contact during clinical experiences
- regular face-to-face meetings with students
- an individual from the university dedicated to communications with off-site supervisors/preceptors
- a formalized method of assigning clinical grades
- a formalized program-to-practicum site and practicum site-to-program feedback tool
- a formalized assessment system at midterm and end-of-term (used to evaluate both students and the practicum site)
Salient Discussion

Summit participants believed that the process of providing feedback to the student and the practicum site (and vice versa) should begin with clear instructions provided by the program, including a clear delineation of the needs and skills of the student. It was noted with some fervor that feedback to the students is critical. Daily feedback to a student was optimal, but methods such as reflective journaling and chat rooms could serve as valuable tools. It was suggested that while a student is on-campus, daily contact is Essential whereas more formal assessments/discussions of student clinicians should ideally take place monthly.

The use of formalized assessment tools was deemed critical to communication between students and practicum supervisors/sites. The group did not describe precise instruments, but believed that one developed by the program that reflects the different levels of student skills and knowledge is necessary. Additionally, a method of remediation describing the levels of remediation would be helpful to practicum sites, students, and the university.

Finally, it was acknowledged that there would be a need for flexibility on behalf of the program. Practicum sites may differ in their ability to accommodate students as well as provide the level of documentation required.

Above Essential

- program representatives visiting all practicum sites where students are currently placed

4. What are clinical supervisors’ expectations of students when placed in off-site clinical experiences?

The Summit participants modified the above question when discussing this issue to include the expectations of all involved (university, students, and practicum site). The expectations, not surprisingly, overlapped among all parties. The revised question was “What are the expectations of students, supervisors/preceptors, and universities for off-site clinical experiences?”

Essential

- Supervisors/preceptors should understand that those assigned for practicum are students and appreciate the tentativeness and peculiarities of a clinician in training.
- The university is responsible for the placement process.
- There is clear, frequent, and documented communication between the university and the supervisor/preceptor.
- There is clear, frequent, and documented communication between the student and the supervisor/preceptor.
- There is clear, frequent, and documented communication between the university and the student.
- The supervisor/preceptor expects the student to arrive on site with solid audiological skills and knowledgeable about procedures.
Placements are selected to provide exposure to the breadth of the scope of practice, and this is communicated to the students.

The supervisor/preceptor expects the student to understand the professional and social requirements for the practicum site (e.g., dress code, punctuality, confidentiality requirements, patient priority, workload, protocols, etc.).

The supervisor/preceptor should expect the student to:
- demonstrate initiative,
- accept constructive feedback,
- be open to learning new methods,
- be able to self-evaluate,
- problem solve/troubleshoot,
- be responsible for learning,
- make and learn from mistakes,
- be appreciative of the preceptor’s/supervisor’s time and expertise,
- communicate needs,
- be collegial, and
- be a program ambassador.

The supervisor/preceptor communicates expectations to the student via a written job description and through regular formal and informal communication.

Salient Discussion

Much of the discussion of this issue began with a description of the level of student preparation for an off-site clinical placement. The amount of professional modeling provided by the program (in-house) and the level of audiological skills taught were addressed. Whether a program models appropriate professional behavior or expects the practicum site to teach these skills was not answered. Nevertheless, participants agreed that programs should provide good professional role models. It was clear, however, that the program was responsible for the student’s acquisition of the necessary audiological skills for the placement.

The various legal and logistical issues (i.e., insurance, licensure, transportation, forms, etc.) were considered to be the responsibility of the program. On the other hand, the university should expect the supervisor/preceptor to understand the student’s role and their responsibility to that student.

Above Essential

- a portfolio of the student’s level of knowledge and skills
III. FACULTY, RESOURCES, AND ASSESSMENT

Faculty

1. What is the optimal number (critical mass) of on-campus faculty for a quality clinical doctoral program in audiology?

Summit participants agreed on the following Essential characteristics of a quality clinical doctoral program:

Essential

- 7–10 full-time equivalent (FTE), which includes academic and clinical faculty
- 75% of the faculty must be full-time

Above Essential

- at least one person on the faculty with clinical and research expertise in each area of the scope of practice.

Salient Discussion

For the purposes of this question, on-campus faculty was defined as “those who would be invited to participate in faculty meetings.” The small group discussion focused on the need to address the breadth and depth of the scope of practice as well as the full range of responsibilities of faculty (scholarship responsibilities, student advising and mentoring, program development and administration, etc.).

Although the large group generally was comfortable with the small group’s conclusion that 7–10 FTE faculty are essential, cautions were expressed about trying to assign an optimal on-campus FTE without considering other program characteristics (e.g., Carnegie classification of the university, number of students, mission and goals of the program, specializations provided, etc.). It was generally agreed that 75% of the faculty must be full-time in the program, which can ensure consistency and continuity of instruction.

2. What is the optimal balance and use of on-campus research faculty and on-campus clinical faculty in a quality clinical doctoral program in audiology?

Summit participants agreed on the following Essential characteristics related to a balance of on-campus research and clinical faculty in a quality clinical doctoral program:

Essential

- Core faculty defined as those responsible for setting the curriculum should possess both clinical expertise and research expertise.
- Core clinical faculty should be provided the same security, rights, and privileges as other department faculty in order to assure program stability and continuity.
- Both clinical audiology expertise and teaching expertise in sciences is the responsibility of the on-campus faculty.
Salient Discussion

The small group discussed the fact that there are educational models in which both clinical doctorates and research doctorates are offered and that this may influence the optimal balance of core faculty. It was determined that in many situations the university mission will dictate the faculty mix. It was agreed that in order to ensure their commitment to the program and the program’s commitment to its faculty, all full-time faculty should be provided the same security, rights, and privileges as other department faculty. With regard to the use of off-campus faculty for instruction, it was agreed that the optimal program should provide the clinical and scientific expertise necessary to develop and maintain the curriculum, and off-campus faculty would be used to enhance the program. Although one small group discussion agreed that more than half of the collective on-campus faculty commitment should be clinical, there was not agreement on this issue when presented to the large group. This topic was targeted for further discussion.

3. What are the qualifications of the on-campus academic (teaching/research) and clinical (supervising) faculty in a quality clinical doctoral program in audiology? (Faculty members could serve in both academic and clinical roles.)

Summit participants agreed on the following Essential qualifications for faculty in a quality clinical doctoral program:

Essential

- A doctoral degree is essential for all faculty.
- Faculty must have training in classroom, laboratory, and clinical teaching.
- Faculty must have expertise in the areas in which they teach.
- Clinical faculty must have had clinical experience.
- Clinical faculty must hold state licensure.
- PhD faculty should be actively involved in research.
- Clinical and research faculty should be actively engaged in scholarly activities.
- The faculty, as a group, should collectively have diverse backgrounds in audiology.
- The program should have access to non-audiology faculty for related field courses (e.g., genetics, pharmacology).
- There should be an appropriate ratio of faculty to students.

Above Essential

- Non-audiology faculty should be on the Audiology faculty.
- Clinical doctoral programs should have PhD faculty with formal postdoctoral education.

Salient Discussion

Small group discussion from two separate groups determined the Essential and Above Essential characteristics of the academic and clinical faculty in a clinical doctoral program. Although it was agreed that some individuals with master’s degrees would be participating in clinical doctoral programs, eventually all faculty would be trained at the doctoral level.
The specific ratio of faculty to students was not determined, although this topic was discussed in another breakout session. Participants agreed that although it would be helpful to have faculty in the program whose area of expertise were, for example, genetics or pharmacology, this was considered to be Above Essential. Although a small group discussion determined that all research faculty should be externally funded, there was not general agreement in the larger group. Although an exact ratio of faculty to students was not determined, participants agreed that the ratio should be appropriate for providing quality instruction and possessing thorough familiarity with each student’s progress in the program.

**Resources**

4. What are the optimal resources, including budget elements, that contribute to a quality clinical doctoral program in audiology?

**Essential**

Summit participants agreed that the following resources were Essential for a quality clinical doctoral program:

- resources to support the development of clinical and academic faculty
- sufficient physical space
- funds for student recruitment
- funds for faculty recruitment
- start-up funding for faculty
- adequate budget to maintain accreditation
- an in-house clinic or formalized contractual arrangement of ongoing clinical training
- hearing aid dispensing at the on-site clinic or at the contractual site
- financial assistance provided to students
- 4.5 FTE clinical faculty
- 3 FTE core academic faculty

**Salient Discussion**

Small group discussion from two separate groups determined the Essential resources necessary for a clinical doctoral program. They indicated that to provide patient follow-up and teach business practices and sales, the clinical experience must provide hearing aid dispensing. The groups also believed that sufficient funds need to be available for recruitment and support of students and faculty. With regard to the number of faculty necessary for a quality clinical doctoral program, one small group determined that a total of 7 FTE would be necessary, while another group indicated that the number should be 10 FTE.
Assessment

5. **What are the elements of assessment of student acquisition of knowledge and skills in a quality clinical doctoral program in audiology?**

Summit participants agreed that the following elements of student assessment were Essential for a quality clinical doctoral program:

**Essential**

- periodic clinical review conducted on multiple levels by multiple individuals
- written documentation of review shared with student
- a national external summative assessment
- a system or mechanism to validate assessment instruments
- clinical skills evaluated at specified times in the curriculum
- summative assessment prior to students’ final clinical placement
- student self-evaluation opportunities
- comprehensive examinations
- posttraining evaluation of students’ knowledge and skills

**Salient Discussion**

Small group discussion emphasized the need to assess students on multiple levels, including skill development, knowledge, application, and appropriate social skills. They noted that these assessments should be conducted periodically and by all individuals actively involved in the student’s education. The outcome of the assessments should result in action, such as continuation in the program, the need for remediation, or dismissal from the program. Written documentation of the evaluations should be provided to students. Students should be required to provide self-evaluations of their performance and progress. Comprehensive programmatic examinations that assess the application of academic knowledge (integration, analysis, and synthesis) should be administered periodically.

6. **What are the elements of program assessment for quality clinical doctoral programs in audiology?**

Summit participants agreed that the following elements of program assessment were Essential for a quality clinical doctoral program:

**Essential**

- Faculty in clinical doctoral programs must undergo assessment.
- Instructors of clinical courses must be engaged in clinical activity.
- Faculty must have scholarly productivity with national dissemination.
- Supervisors should be involved in teaching (guest lecturing, team teaching, teaching courses for which they are qualified).
- Employers of program graduates should be surveyed.
- Graduates of programs should be surveyed 1 and 5 years after program completion.
- Clinical placement experiences must be assessed for quality.
- Programs should seek and utilize input from employers of program graduates.
Above Essential

- Programs should conduct national annual formative assessments of students’ clinical and classroom skills.

Salient Discussion

Small group discussion concerned the difficulty of separating the assessment of the quality of the program from the assessment of the student. Participants agreed that faculty instructing clinical application courses should be spending a portion of their professional time engaged in providing clinical services. It was also agreed that all faculty providing instruction in clinical doctoral programs should undergo evaluation of their instructional and clinical skills, although the method of evaluation was not discussed. There was agreement among small group participants that the program must have assessment methods in place to assure clinical placement sites that students being placed have the requisite knowledge and skills. It was also agreed that assessment of a quality program must include feedback from employers of program graduates and program graduates themselves and that this feedback be used for ongoing program improvement. All participants agreed that although there are differences in clinical placement experiences, all sites must be assessed for quality of instruction and variety of experiences, although a specific method for site assessment was thought to be a topic for future discussion. Participants agreed that assessment of the program includes assessment of the student and that a great deal of overlap between these areas exists. Participants also agreed that evaluation of graduates should be provided at 1 and 5 years following program completion to gather information that can assist in program review and ongoing curricular development.
IV. INTERACTIONS: ACADEMIC AND CLINICAL RELATIONSHIPS

1. What are the characteristics of optimal interactions and relationships between the academic and clinical curricula?

Essential

Summit participants agreed that the following Essential characteristics signify optimal interactions and relationships between the academic and clinical curricula:

- Clinical education (observation, assisting, direct service delivery) should occur throughout the duration of the curriculum (i.e., from the first semester until graduation).
- There is an ongoing bidirectional flow of information between academic and clinical faculty (e.g., through labs, team teaching, grand rounds, case studies, etc.).
- Clinical experiences across the curriculum reflect a progression of students' clinical abilities (i.e., independence, responsibility, and skill development).

Salient Discussion

The small group discussion focused on the importance of programs fostering mutual respect among respective faculty who teach academic and clinical curriculum. Suggested strategies included the following:

- joint activities where academic and clinical faculty can work together, avoiding the "us versus them" approach (e.g., case conferences with students and academic and clinical faculty, keeping the focus on students)
- grand rounds; team-teaching
- academic faculty involvement in clinic
- joint/applied research and capstone projects that are interdisciplinary
- teaming on research committees
- regular meetings (once/twice per month) with an audiology working group or hearing group (both academic and clinical faculty)
- exchange of information and ideas regarding curriculum and clinical experiences
- sensitivity and attention to titles of clinical instructors
- consistent communication between academic and clinical faculty, matching didactic material and clinical experiences/protocols

The group could not come to consensus on a specific number of credit hours within the curriculum for clinical practicum because each university defines the credit hours assigned to practicum differently.

The group believed that a true partnership should exist between teaching faculty and supervisory faculty, with decisions shared equally. Both should be equally responsible and active in students’ application of knowledge to the development of clinical skills. There should be joint staffing of students and equal participation in all departmental decisions related to the curriculum. The group also made the point that all faculty teaching clinical courses should be involved in clinical practice, although no agreement was reached as to whether or not this was an Essential characteristic.
The group also raised the question of whether clinical supervisors should be teaching didactic courses. The group believed that it depends on their qualifications, although no agreement was reached as to whether this was an Essential characteristic.

2. What are the characteristics of optimal interactions and relationships between the clinical doctoral program and off-site clinical experiences?

Although this question was intended to focus on the interactions and relationships between the program and the off-site clinical experiences, it became evident that participants discussed a number of the characteristics identified in the discussion above regarding the academic and clinical curricula. As a result, there are similarities in some of the characteristics identified as essential.

Summit participants agreed that the following are Essential characteristics of optimal interactions and relationships between the clinical doctoral program and off-site clinical experiences:

**Essential**

- There must be open and transparent communication between the site and the program. The program evaluates what students know and need to learn, and the site will work together with the program to develop learning objectives and outcomes with the student. This must be a collaborative approach.
- Programs should know the clinical site faculty (strengths and weaknesses and willingness to handle problems). There needs to be some sort of periodic site visit to evaluate adequacy and quality of the site.
- Optimal length of time for a meaningful rotation should be determined jointly by the supervisor/preceptor and the academic program.
- Off-sites are afforded the opportunity to provide input to curriculum development.
- The off-site supervisor needs to be considered faculty and be included as a colleague (e.g., involved in faculty meetings, curriculum decisions, mutual sharing of information, and participation on advisory committees).
- Students should have clinical experience in-house before engaging in any form of off-site clinical experience.
- There is a known system for determining minimum standards for off-site placement. The program and site need to evaluate and articulate student level of academic preparation and there needs to be clear communication about students’ preparation; this information needs to be made available to the clinical sites. That is, academic programs are obligated to evaluate and disclose the academic preparation and clinical skills of students prior to placement at a specific site.
- The academic program should have a sufficient number of contractual agreements with an adequate core number of clinical sites, provide adjunct status to supervisors, and so on.
- Students should have some sort of academic and/or clinical experience in an area (e.g., vestibular) before or concurrent with going to an off-campus site where that area will be a part of the clinical practice.
Salient Discussion

Some participants believed that exposure to didactic information about or experience with a clinical procedure prior to external placement was Essential, whereas others rated this as Above Essential and could be learned on-site.

The participants discussed the value of providing the site with course content and curricular materials and raised some questions:

- Is interaction with on-site different than off-site?
- Is academic course work required before clinical practicum?

Participants also discussed the value of clinical education definitions. Some suggestions included the following:

- Clerkship—clinical training within a university
- Rotation—short-term clinical training outside of a university
- Externship—long-term clinical training outside of a university

There was general agreement that early clinical exposure can be helpful to didactic instruction and that supervisors/preceptors need to know what experience and course work the student has had before placement.

The optimal length of time for a meaningful rotation should be determined jointly by the supervisor/preceptor and university. Some participants believed that students do better with a concentrated rotation (e.g., full-time for 5 weeks vs. 1 day per week for 15 weeks).

Competence versus independence should be defined the same way by the supervisor/preceptor and university. The best way to determine when a student is ready for non-faculty supervision was raised and it was suggested that information from a student’s Knowledge and Skills Acquisition (KASA) summary form could help determine readiness. It was also suggested that supervisors could measure the student's ability to administer audiology services within a usual and customary time frame accepted for such service as a way to determine competence and independence.

Above Essential

Some participants believed that didactic course work or exposure to the procedure prior to the clinical placement should occur, whereas others believed that on-site exposure was adequate.
3. **What are the characteristics of optimal interactions and relationships between the research and clinical training?**

Summit participants agreed that the following were Essential characteristics of optimal interactions and relationships between the research and clinical training in a quality clinical doctoral program:

**Essential**

- There is a role for research in AuD clinical training.
- AuD programs do have a responsibility in maintaining and enhancing the profession and discipline.
- There must be some research component in AuD programs (e.g., classes in statistics, research methods, critical review, guided research, research proposals) to ensure the preparation of competent consumers of research and evaluators of evidence-based practice and sensitivity to ethical considerations of research.
- Programs should teach the philosophy that evidence-based practice is a career-long commitment.
- Programs should facilitate an exchange of research on evidence-based practice with sites through a variety of means.

**Salient Discussion**

Summit participants discussed the realities of the marketplace that attract many students to clinical positions versus seeking a PhD and becoming a teacher-researcher. Professional interests and the size of the profession suggest that AuDs may/will have some role in research and PhDs may/will have some role in providing clinical services, as has been the case historically. For AuDs this role may vary between review and understanding of published research and taking an active role in large-scale data collection and analysis. Thus, if AuD holders are acting as peer-reviewers, these skills need to be taught. Participants articulated that research-related skills need to be included in AuD programs to help ensure that autonomous, critically thinking professionals are graduating.

Research should be considered a typical part of usual clinical inquiry. The participants recognized that there is an opportunity for academic programs and clinical sites to work together to generate clinical research, which could be seen as a possible benefit to sites for taking AuD students. The quality of a practicum site could be determined by incorporation of evidence in service delivery. In light of changes in service delivery with an increasing focus on evidence-based practice and the use of “best practices,” AuD students will be required to engage in data collection and analysis in the clinic. “Research skills” will be useful whenever a clinician is asked to answer a question in the workplace (such as to justify a new position or address the diagnostic or treatment needs of a challenging patient). It was also noted by the group that these skills are needed for quality improvement decisions in the workplace.
The Summit participants identified and discussed the following research-related issues:

- Programs should be training students as consumers of research within an evidence-based practice framework. This could be accomplished through a melding of clinic and research experiences.
- Examples of optimal interactions for students to experience research were identified. These experiences may include:
  - “clinical researcher–master clinician” pairings that provide clinical services in university clinics based on evidence-based practice principles,
  - collaboration/modeling provided by clinical researchers to in-house supervisors and students,
  - university faculty providing research expertise to practicum sites, and
  - presentations that express the enjoyment and fulfillment of successful models of researcher–clinician interactions.
- There is often a mismatch between practice and outcomes research.
- There may be a mismatch between didactic classes and off campus clinical experiences related to “best practices” foundations.
- How can research be incorporated into a clinical doctorate program?
  - Course(s) might be in a different department or combined with another department.
  - What is optimal?
    - evidence-based practice is Essential
    - design a clinical research project
- There was discussion regarding the need to inform students of human research ethical issues, Institutional Review Board (IRB) existence and requirements, that research ethics is different from professional ethics, and that the National Institutes of Health (NIH) has a certificate program in research ethics.
- How do off campus supervisors become knowledgeable of evidence-based practice?
  - In-services from faculty at sites or bringing supervisors to campus could be effective.
  - Some clinical sites have ongoing research and could inform the program.
- It was noted that some universities are hiring AuDs in tenure track positions—therefore, AuDs need some research training. Some suggested that doctoral programs include a clinical faculty track (formerly MA/MS clinical supervisor jobs) in addition to the PhD tenure track.

It was noted that programs that do not value research will likely not survive. It also was noted that NIH is moving toward translational research and promoting clinical research and clinical trials. Participants expressed disappointment in the role of research in clinical doctoral programs, particularly given the NIH movement, and that the creation of AuD programs without a solid research component devalues this initiative. There was a sense that this topic needed to be discussed in more detail than time allowed.
4. What are the characteristics of optimal interactions and relationships between the university and the community?

Summit participants agreed that the following were Essential characteristics of optimal interactions and relationships between the university and the community:

**Essential**

- Programs need to have a greater participatory role in the state associations and organizations.
- Programs should get the community more involved in the clinical doctoral program by conducting forums or focus groups to obtain their input regarding necessary clinical skills, ways to assess students, and so on.
- Programs should involve members of the audiology community by including them on advisory committees to the program.
- Programs should foster and build a partnership with the community practitioners.

**Salient Discussion**

Participants made the following suggestions that may result in a strong relationship between the university and the community:

- Hold annual dinners for community colleagues as a time for informal connections.
- Develop models that make students more attractive to the off-campus sites so that off-sites seek out program students.
- Establish a community advisory group that can provide input to the university regarding a variety of issues (e.g., supervisor/student expectations, curriculum, student assessment, clinical opportunities).
- Attempt to place graduates in jobs in their communities to improve the chances of placing future students.
- Offer perks such as continuing education, teleconferences, and faculty visits to off-sites to share expertise or provide free consultation.
- Establish a community journal group that is coordinated by the university and offers free continuing education units.
- Consider providing appointments at the university.
- Establish a “guest lecture list” of community audiologists who would be willing to give guest lectures.

Participants noted the value of service learning projects and the opportunity for students to work within the community (e.g., hearing screening at Head Start programs or for migrant laborers/farmers). Such activities could provide incentives for increased community interaction and visibility within the community of audiologists. Participants also noted the value of acknowledging the importance of consumers providing feedback on how programs and the profession are doing.
Issues for Future Discussion

During the Summit, it became apparent that some discussion topics were so complex that agreement on the issues could not be reached in the time available. Consequently, program participants agreed to set such topics aside for additional consideration at future meetings or conferences. The following topics were determined by Summit participants to warrant further discussion:

- the optimal number of didactic hours of a clinical doctoral program in audiology
- the research competencies expected of graduates from AuD programs and the role of the AuD in the research base of the discipline
- the optimal undergraduate preparation for students entering clinical doctoral programs in audiology
- determination of the size of the student cohort in an optimal clinical doctoral program
- determination of the optimal balance between “research” and “clinical” faculty
- the nature and amount of didactic and clinical preparation necessary before going to external placements

In addition to the topics planned by the Summit advisory committee, Summit participants expressed a need to meet further to discuss other items relevant to the education of audiologists. The following issues were identified by the group for consideration in the future:

- the “4th year” clinical placement, including issues related to state licensure and compensation
- further discussion of compensation of off-campus supervisors
- assessment or “accreditation” of student placement sites
- professional development in supervision for those providing clinical supervision
- methods of evaluating supervisor skills
- educating students with disabilities, particularly those with hearing loss
- reducing student debt/increasing salaries
- the use of matching programs for full-time externships

The Summit advisory committee encourages organizations interested in the education of clinical doctoral students in audiology (e.g., the Council of Academic Programs in Communications Sciences and Disorders, the Council on Academic Accreditation in Audiology and Speech-Language Pathology, the Accreditation Commission for Audiology Education, the American Speech-Language-Hearing Association, the American Academy of Audiology, the Audiology Foundation of America, and others) to incorporate opportunities for in-depth discussion of these topics in future conferences and meetings.
Dissemination of Report

The advisory committee agreed that this final report would be distributed to each of the participants at the Summit, as well to each of the three sponsoring organizations for the conference (ASHA, CAA, CAPCSD). These organizations will then have the discretion to disseminate or use the document as they deem appropriate.

Next Steps

There appeared to be general agreement among the Summit participants that it will be important to convene additional meetings in the future to continue discussions on certain of the outstanding issues identified above. Of particular interest and concern are issues related to the clinical education experiences required of doctoral audiology students. Specifically, participants requested a future conference that is designed to explore and address issues related to the clinical education of audiology doctoral students such as qualifications of sites, qualifications of supervisors/mentors/preceptors, credentialing, reimbursement, and stipends.

At the time of the writing of this report, the three sponsoring organizations of this Summit (CAA, ASHA, CAPCSD) had agreed to continue to pursue their work in this area and will conduct an Audiology Education Summit II in early 2006, with a specific focus on these clinical issues. The American Academic of Audiology also has agreed to participate in the planning for this second conference. Members of the audiology licensing and reimbursement communities also will be invited to participate in this conference. The goal of the conference will be to produce proceedings that provide a general summary of the issues discussed, serve as a guide for professional service delivery sites providing supervised clinical experiences to audiology doctoral students, and serve as a guide for academic programs granting the clinical doctorate degree.

As with the original Summit, the ASHA National Office staff will assist in the logistics of the meetings for the planning committee and the conference. ASHA will support the activities by providing funds to cover the cost of food and lodging for the members of the Planning Committee and provide a meeting location for each of the three planning meetings. ASHA will also provide support for the conference to include advertising and registration organization, record keeping, and the production of the proceedings with the assistance of the advisory committee.
APPENDIXES
APPENDIX A: Meeting Agenda

The advisory committee planned the following agenda that was followed during the Summit.

**Friday, January 14, 2005**

7:30–8:00   CONTINENTAL BREAKFAST
8:00–8:05   *Plenary Session* - Welcome and Introductions   Dennis Burrows
8:05–8:30   “The Essentials and Beyond: Setting the Framework”   Dennis Burrows
8:30–9:30   Introductory Remarks, Meeting Logistics, & Ground Rules   James Gelatt
9:30–9:45   BREAK
9:45–10:15  Invited Presentation #1: *Resources, Faculty, & Assessment*   Robert Novak
10:15–11:30 Breakout Discussions   ALL
11:30–1:00  LUNCH (provided)
1:00–2:15   Group Summary Reports & Participant Reaction (TOPIC 1)   James Gelatt
2:15–2:45   Invited Presentation #2: *Academic Curriculum: Breadth and Depth; Students*   Dianne Meyer
2:45–3:00   BREAK
3:00–4:00   Breakout Discussions   ALL
4:00–5:30   Social Hour and Poster Session   ALL

**Saturday, January 15, 2005**

7:30–8:00   CONTINENTAL BREAKFAST
8:00–8:05   Welcome Back   James Gelatt
8:05–9:15   Group Summary Reports & Participant Reaction (TOPIC 2)   James Gelatt
9:15–9:45   Invited Presentation #3: *Clinical Curriculum: Breadth and Depth; Students*   Gary Jacobson
9:45–11:00  Breakout Discussions

11:00–1:00  LUNCH/Informal Networking (On Your Own)

1:00–2:15  Group Summary Reports & Participant Reaction (TOPIC 3)  
            James Gelatt

2:15–2:30  BREAK

2:30–3:00  Invited Presentation #4: Interactions: 
            Academic and Clinical Relationships  
            Neil DiSarno

3:00–4:15  Breakout Discussions

4:15–4:45  BREAK
            Combined Groups Report Preparation (FACILITATORS/RECORDERS)

4:45–6:00  Group Summary Reports & Participant Reaction (TOPIC 4)  
            James Gelatt

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**Sunday, January 16, 2005**

7:30–8:15  BREAKFAST (provided)

8:15–8:30  Welcome Back/Objectives for the Morning  
            Dennis Burrows

8:30–9:00  Topic 1 Summary & Discussion  
            Advisory Committee
            •  So What Did We Say?
            •    Quality Program Characteristics:  
                  Faculty, Resources, & Assessment
            •    Essentials
            •    Beyond – Examples of Exemplary

9:00–9:30  Topic 2 Summary & Discussion  
            Advisory Committee
            •  So What Did We Say?
            •    Quality Program Characteristics:  
                  Academic Curriculum Breadth & Depth, Students
            •    Essentials
            •    Beyond – Examples of Exemplary

9:30–10:00  BREAK

10:00–10:30  Topic 3 Summary & Discussion  
            Advisory Committee
            •  So What Did We Say?
            •    Quality Program Characteristics: 
                  Clinical Curriculum Breadth & Depth
            •    Essentials
            •    Beyond – Examples of Exemplary
10:30–11:00 Topic 4 Summary & Discussion
  - So What Did We Say?
    - Quality Program Characteristics:
      Interaction of Academic & Clinical Relationships
  - Essentials
  - Beyond – Examples of Exemplary

Advisory Committee

11:00–11:30 Summit Summary
  - What’s In It for Me? How Can I Use the Information?
  - Strategies for Implementing Exemplary Practices

James Gelatt

11:30–11:45 Summit Wrap-Up and Evaluation
  - James Gelatt

11:45–12:00 Closing Remarks
  - Dennis Burrows
APPENDIX B: Rosters

Advisory Committee for 2005 Summit on Audiology Education

Dennis L Burrows, Chair
(Council on Academic Accreditation Representative)
Constance Brown Hearing Ctrs.
Kalamazoo, MI 49048
Phone (Daytime): (269) 343-2601
Fax (Main): (269) 343-9257
E-mail: dennisb@cbrown.org

Lawrence W Higdon
(ASHA Representative)
306 Wishing Tree Lane
Oxford, MS 38655
Phone (Daytime): (512) 426-7178
Fax (Main): (208) 247-4973
E-mail: lhigdon@asha.org

Stephanie A Davidson
(ASHA Representative)
Ohio State University
Rm 110 Pressey Hall
1070 Carmack Rd
Columbus, OH 43210
Phone (Daytime): (614) 292-1802
Fax (Main): (614) 292-7504 (Unlisted)
E-mail: strang.7@osu.edu

Lisa Lucks Mendel
(Council of Academic Programs Representative)
School of Aud & Speech-Lang Path
807 Jefferson Avenue
Memphis, TN 38105
Phone (Daytime): (901) 678-5865
Fax (Main): (901) 525-1282 (Unlisted)
E-mail: lmendel@memphis.edu

Neil J DiSarno
(Council of Academic Programs Representative)
Missouri State University
901 South National Avenue
Communication Disorders
Springfield, MO 65804-0095
Phone (Daytime): (417) 836-6511
Fax (Main): (417) 836-4242
E-mail: neildisarno@smsu.edu

James J Mahshie
(Council of Academic Programs Representative)
Gallaudet Univ
Dept of Hrg Spch & Lang Sci
800 Florida Ave NE
Washington, DC 20002
Phone (Daytime): (202) 651-5329
Fax (Main): (202) 651-5324
E-mail: james.mahshie@gallaudet.edu

Vic S Gladstone
(ASHA Representative)
ASHA
10801 Rockville Pike
Rockville, MD 20852
Phone (Daytime): (301) 897-0102
Fax (Main): (301) 571-0481 (Unlisted)
E-mail: vgladstone@asha.org

George O Purvis
(Council on Academic Accreditation Representative)
VA Medical Center
800 Zorn Ave
Louisville, KY 40206-1499
Phone (Daytime): (502) 899-4214
Fax (Main): (502) 287-6236 (Unlisted)
E-mail: george.purvis@med.va.gov
Facilitators and Recorders

The following individuals served as group facilitators and recorders during the small breakout sessions at the conference:

Facilitators

Dennis Burrows
Neil DiSarno
John Ferraro
Jaynee Handelsman

Jim Mahshie
Dianne Meyer
George Purvis
Brenda Ryals

Recorders

Nancy Aarts
Jason Box
Deborah Carlson
William Clark
Stephanie Davidson
Newell Decker
Vic Gladstone

Claire Jacobson
Loretta Nunez
Colleen O'Rourke
John Preece
Sharon Sandridge
Patti Tice
APPENDIX C: Recorder Template

Major Topic Area
Faculty, Resources, and Assessment

Question being discussed
Optimal number of on-campus faculty?

Facilitator: Burrows Recorder: Davidson

Salient aspects of discussion:

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APPENDIX D: Breakout Group Assignments

### Day 1 (Friday)

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- Dennis Burrows, Stephanie Davidson, Teri Bellis, Lu Beck, Carol Cokely, Lou Echols-Chambers, John Ferraro, Ashley Harkrider, Karen Richardson, Todd Ricketts, Laura Smith-Olinde
- Jaynee Handelsman, Vic Gladstone, Raymond Colton, T. Newell Decker, Lisa Devlin, Robert Keith, Candace Hicks, Malcolm McNeil, Joanne Schupbach, Ian Windmill
- John Ferraro, Deb Carlson, Raymond Colton, T. Newell Decker, Lisa Devlin, Robert Keith, Candace Hicks, Malcolm McNeil, Joanne Schupbach, Ian Windmill
- Brenda Ryals, Loretta Nunez, Chris Bauch, Marc Fagelson, Lisa Flores, Laura Jennings-Kepler, Sumalai Maroonroge, Elaine Mormer, Bob Novak, Bette Stevens
- George Purvis, Claire Jacobson- Recorder, Ann Clock Eddins, David Henry, Gil Herer, Gary Jacobson, Barb Laufer, Jill Preminger, Sharon Sandridge, Janet Schoepflin
- Dianne Meyer, Colleen O’Rourke – Recorder, Jason Box, Sumitrajit Dhar, Susan Erler, Jacquelyn Georgeson, Frances P. Harris, Gary Lawson, Sharon Lesner, Dennis Ries, Emily Salazar
### Day 2 (Saturday)

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<td>Robert Steven Ackley</td>
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APPENDIX E: Presentations

Welcome

Audiology Education Summit: A Collaborative Approach
January 14-16, 2005
Ft. Lauderdale, Florida
Advisory Committee

- CAPCSD
  - James Mahshie, Ph.D.
  - Lisa Lucks-Mendel, Ph.D.
  - Neil DiSarno, Ph.D.
- CAA
  - Dennis L. Burrows, Ph.D.
  - George Purvis, Ph.D.
  - Rick Talbott, Ph.D.
- ASHA
  - Larry Higdon, M.S.
  - Neil Shepard, Ph.D.
  - Stephanie Davidson, Ph.D.
  - Vic Gladstone, Ph.D.
ASHA National Office Staff

- Patti Tice
- Tess Kirsch
- Loretta Nunez
- Lauren Ero

The Essentials and Beyond: Setting the Framework

Dennis L. Burrows, Ph.D.
Executive Director and President
Constance Brown Hearing Centers
Kalamazoo, MI
Essential

• Defined:
adj. Basic or indispensable; necessary; essential ingredients.
n. fundamental; necessary or indispensable

Why are we here?

“You got to be very careful if you don’t know where you are going because you might not get there”

Yogi Berra
Historical Perspective

- 1987 Future of Audiology
  - Lu Beck: George Osbourn: Jim Jerger: Jay Hall: Rick Talbott
- 1989 AAA Task Force on Professional Doctorate
- 1988 ADA “Move The Mountain Conference”
  - Move to the doctoral level - AuD
- ASHA LC-789-
  - Move to separate professions
- ASHA 1993-Academic Feasibility of Clinical and Professional Doctoral Degrees in Audiology (LC 44-93)

History (cont’d)

- 2001 CAPCSD-ASHA-AAA JOINT AD HOC COMMITTEE ON STANDARDS FOR NON-ENTRY LEVEL PROGRAMS IN AUDIOLOGY
  - Fred Bess: Jan Ingham: Rick Talbott: John Ferraro: Jim Mahshie: Jack Roush
- Big Ten Consensus Conference
- AAA Consensus Conference on the 4th Year AuD Student
- 2004 CAPCSD Task Force on Supervision-John Ferraro
- 2005 Audiology Education Summit
Summit Planning

• Many topics; too little time
• The necessity to be able to make an impact within the time we have available
• Focused on:
  – Academic and clinical curriculum
  – Faculty qualifications
  – Resources
  – Assessment

Topics of Discussion

• Faculty, Resources, Assessment
• Academic Curriculum
• Clinical Curriculum
• Interactions: Academic and Clinical Relationships
The Process

- Key Presentations
  - Bob Novak
  - Dianne Meyer
  - Gary Jacobsen
  - Neil DiSarno
- Breakout Groups
  - BVD
    - Brainstorm
    - Vote
    - Discuss
- Group Reports

The Final Product

- Presented here on Sunday
- Presented at CAPCSD
- Developed by the sponsoring organizations and disseminated
Our Charge

“I have opinions of my own – strong opinions – but I don’t always agree with them.”

– George W. Bush

Our Facilitator

• Jim Gelatt, Ph.D.
  – Prentice Associates
  – Professor at the University of Maryland, Graduate School of Management
  – Author
  – Active Professional
Faculty, Resources and Assessment
Robert E. Novak Ph.D.

“Critical Mass” of Faculty
Is there an essential number?

Assertion: A quality clinical doctoral program in audiology must have a “core” faculty sufficient in number, breadth and depth to present a curriculum that represents the majority of the Scope of Practice of the profession.
“Critical Mass” of Faculty

- Definition of “core”? (e.g. full or part-time faculty to whom the institution has a long-term formalized commitment)
- Are “core” faculty necessary for a quality clinical doctoral program in audiology?

“Critical Mass” of Faculty
Is there an essential number?

- How to objectify “sufficient number”?
  - Accessibility to students: are there enough faculty to allow for accessibility through
    - regular office hours or “open door” availability
    - review sessions
    - journal groups
    - student-group (NSSHLA, NAFDA, etc) advising
    - other?
“Critical Mass” of Faculty
Is there an essential number?

- How to objectify “sufficient number”
  - State, national visibility through publications & presentations
    - Can this be met without negatively affecting “accessibility of faculty” to their students?
    - Are there enough faculty to allow for the development of programmatic mechanisms that will support both “accessibility to students” and “state/national visibility” of all faculty members?
  - How does this relate to a minimum requirement for Student-Faculty Ratio?

- Can three “core” audiology faculty members deliver a curriculum that represents the full scope of audiology practice while at the same time meeting the first two criteria of “accessibility” and “state/national visibility”?
Traditional Recipe for Success of Audiology Programs and Their Tenure-Track Faculty

- Assertion: In the current environment of doctoral universities, if an audiology program is to survive and flourish (be recognized by its university as a “quality” program), the following activities must be well-represented among the faculty:
  - Productive and funded research with publications (“the rich get richer”)
  - Active and successful involvement in teaching
  - Service that includes expectations for revenue generation through delivery of clinical services
  - Traditional department/college/university, professional & community service
  - Development activities to address fiscal needs of programs for scholarships, professorships & buildings

Need for a true division of faculty workload expectations?

- P.A.S.T. tense: how many tenure-track assistant professors will view their traditional faculty appointments when a university has these unrealistic productivity expectations for every new faculty member!
- One type of faculty member cannot do it all...WELL!
Mandate for the development of **research** and **clinical faculty** tracks?

- each with its own unique requirements for recruitment and retention (Scholarship Reconsidered: Priorities of the Professoriate (Boyer, 1990), for example:
- Ph.D. (research-emphasis doctorate) required for the research track?
- Doctorate or Master’s (until none left) with clinical expertise and participation in activities that define “the cutting edge” in clinical practice for the clinical track?
- Promotion ladder in each (assistant-to-full professor) is needed, with well defined and unique criteria for movement between ranks?

What is the optimal balance between on-campus research and on-campus clinical faculty?

- **Is determination of an appropriate division of labor- (by design, they would not be the same) important?**
  - e.g. research faculty teach & research; clinical faculty teach & deliver clinical service with opportunity for involvement in research. Each achieves national visibility as appropriate to their faculty roles and contributes to the service needs of the program and university as needed and appropriate.
  - Should the ratio be determined not by formula, but by justification? **What are the justifications for increasing the numbers of each to achieve a quality clinical doctoral program?**
Who should fill the ranks of Research faculty versus Clinical faculty?

- **Research faculty**: research doctoral degree (e.g. Ph.D.), with interest/excellence in teaching, line/s of research that is/are funded and disseminated via publication and service?
- **Clinical faculty**: First professional degree with interest/excellence in teaching, clinical practice, service, service/practice integration and clinical science?

- Relationship of Boyer, Rice clinical scholarship models (clinical faculty track) to the “traditional research faculty” scholarship model (research faculty track)
- A possible mechanism for demonstrating “quality” of the clinical faculty to other colleagues within a university?
Must assure that each group is evaluated according to their unique standards for appointment and retention (model based/university-specific)

- Should only faculty with doctorates (clinical or research) teach didactic courses? MA faculty?
- Expectations for research/scholarship/clinical productivity for PhD research faculty?
- Expectations for research/scholarship/clinical productivity for clinical faculty?
- Support necessary for each?
- Expectations for continuing professional growth of each group?
- How is continuing professional development supported by the program?
- How is the initial and continuing competence of faculty from each group determined? (appointment/promotion guidelines?)

Tenure for each group?

- **Tenure:** “a status granted after a trial period to a teacher protecting him (her) from summary dismissal” (Webster). Is the concept of tenure important for assuring quality of the core faculty in clinical doctoral programs?
  - Should both positions be tenure-track?
  - What are the unique criteria for tenure for the clinical track?
  - Term appointment alternative:
    - Assumption: if you are doing your job well you will keep it.
    - Reality: if personnel dollars become scarce, term positions are eliminated before tenured positions.
    - If the need for your position is reconsidered you will be gone at the end of your contract period (typically 1-5 years)
    - However, tenured positions can also be terminated: fiscal exigency/loss of program area.
Adjunct/Part Time Outside-of-the University Faculty

- Possible issues related to successful use of these type of faculty resources in a quality program?
  - Assurance of knowledge/skill set necessary for inclusion
  - Mutual commitment to a role in the program
  - Integration into the “core” faculty via group meetings, social events, frequent communication
  - Long term commitment if the relationship is mutually beneficial...assuring continuity and quality of students’ experiences from one class to the next
  - Innovative compensation packages to attract and maintain participation of these important program members

Can Programs Short on Faculty Share Personnel Resources and Still be Considered- Quality Programs?

- Assertion: Shared resources such as distance participation in clinical grand rounds, didactic lectures, virtual experiences, etc. should be used only to enhance the program being delivered by an adequate number of core faculty and never in place of them.

- Do we need criteria to determine when the balance between core personnel resources and shared personnel resources is appropriate?
Quality indicators of off-campus clinical instructors/preceptors in a quality clinical doctoral program in audiology

- Should all hold the clinical doctorate? Are experienced Master’s-level preceptors allowed?
- What type/length of clinical experience should be required of off-campus clinical instructors/preceptors?
- How is their initial and continuing competence determined?
- What type of compensation could be offered to off-campus clinical instructors/preceptors?

If non-audiologists are used as clinical instructors/preceptors....?

- What are the criteria for their acceptance by the program as a non-audiologist alternative clinical instructor/preceptor?
- What percentage of a student’s “12 month full-time equivalent supervised clinical experience” can be precepted by non-audiologist preceptors?
What are optimal clinical site resources to support a quality clinical doctoral program in audiology?

- **Is an on-campus clinic necessary to provide consistent initial and continuing clinical experiences for students?** If so...
  - Should the clinic dispense hearing aids & assistive listening devices with support aural rehabilitation programs?
  - How diverse should an on-campus clinic patient population be?
  - Does an on-campus clinic need to provide experiences in all or most aspects of the Scope of Practice?
Off Campus Clinical
(Externship/Preceptorship/Practicum) Site

**Resources:** criteria for Inclusion in a quality doctoral program in audiology

- **Assertion:** specific guidelines for inclusion of practicum sites in a program must be created and address issues such as accreditation by appropriate bodies (e.g. Board of Health, JCAHO, etc) number and adequacy of preparation of site supervisors, consistency of amount of supervision and willingness of supervisors to use university program-approved metrics for formative assessment of student competencies acquired at the site, responsiveness of the site to the needs of the academic program, scope of practice represented within the site, approval of site supervisors by the academic program, etc.

---

**Resources**

Does **location** of the program matter for a quality clinical doctoral program in audiology?

- Is a university (doctoral-degree granting) “home” critical for an audiology clinical doctoral program to be considered for “quality” status designation?

- Are independent focused “schools/colleges of audiology” viable alternatives (e.g. Colleges of Chiropractic)?
What are the elements of an adequate budget for a quality clinical doctoral program in audiology?

- How should budget priorities be established?
- What would be considered adequate annual funding for clinical and research faculty to attend professional meetings/conferences?
- What would be considered adequate equipment budget for clinical and research equipment?
- What role should vendors play in placing equipment and products (diagnostic equipment, hearing aid assessment equipment, sample products, software programs, etc) in academic programs?

What business office resources should exist to support on-campus clinics and off-campus clinic contracts?

- What level (receptionists-to-administrative assistants) and amount of secretarial support is needed to support a quality clinical doctoral program in audiology?
- What level of development (fund raising) support is needed either from an in-house development officer or from a college or university level development office?
Assessment

How is student acquisition of knowledge and skills optimally assessed in a quality clinical doctoral program in audiology?

- Should knowledge/skill mastery be assessed at specific times (end of first year, second year, third year) or at specific points in the curriculum (prior to on-campus placements, off-campus placements, prior to 4th year experiences, etc)?
- Should this be consistent across audiology programs?

Assessment

How is program quality assessed for clinical doctoral programs in audiology?

- What pieces of evidence should be used to assess the overall success of the program?
  - Graduation rates
  - Placement rates
  - Employer evaluations
  - Student evaluations of program at graduation and some time after being out in practice
  - Performance of graduates on a national summative assessment
  - Other?
- Should faculty productivity in the various performance areas for clinical or research faculty be an element of the program’s self-assessment? (would relate to a program’s “model for clinical scholarship” approved by their university for purposes of appointment/promotion)
Assessment

How is student acquisition of knowledge and skills optimally assessed in a quality clinical doctoral program in audiology?

- What type of assessment tools (course exams, periodic comprehensive exams, periodic practical exams, clinical evaluations, papers, presentations, etc) should be used?
- Should this be consistent across programs?
- What is an optimal summative assessment mechanism? Should there be more than one?
- How should the assessment plan be validated?
The Au.D. Academic Curriculum

- It is important not to be constrained by the old model. The Au.D. curriculum should not be viewed as the master’s curriculum with hours added.
- This is a paradigm shift. The old model, including the academic curriculum, is no longer adequate.
The Au.D. Academic Curriculum

- A clear vision of the Au.D. is needed.
- Knowledge areas and skills included in a curriculum are based on that vision.
- Review of the goal/vision for the Au.D. will help identify quality indicators of the academic curriculum.

The Goal: Doctoral Education and Doctoral Practitioners (ASHA, AAA, ADA references)

- “Audiologists are professionals engaged in autonomous practice.”
- “The audiologist is an independent practitioner who provides services in hospitals, clinics, schools, private practices, and other settings.”
- “Audiologists teach physicians, medical students, residents, and fellows about the auditory and vestibular system.”
The professional doctoral degree establishes audiologists in a clearly defined and prominent role within the healthcare delivery system.

Audiology doctoral education “must demonstrate sufficient depth and breadth to warrant the doctoral designation.”

“Individuals completing an AuD will be critical consumers of research and may choose to participate in clinical research including the evaluation of the efficacy of current diagnostic and treatment strategies.”
The Goal: Doctoral Education and Doctoral Practitioners (ASHA, AAA, ADA references)

- “The advanced level of training the professional doctorate mandates is necessary to ensure the provision of the highest standards of delivery of service to individuals with auditory, vestibular, and related disorders.”

The Academic Curriculum

- Is a plan with strategies for achieving the goal (along with the clinical curriculum)
  - How we perceive the profession will influence the curriculum
  - Subject matter is one component. What content is essential to being a successful doctoral level clinical audiologist?
The Academic Curriculum: Selected Quality Indicators

- Quality of the content is closely related to how it is organized, along with the teaching and learning experiences that are available.
- How the curriculum is evaluated is a quality indicator.

Breadth and Depth of the Academic Curriculum

- **Breadth**
  - Diversity of subject matter; range and variety of knowledge
- **Depth**
  - Particular focus in an area; what degree of knowledge is the student expected to achieve?
- Determined by the goal (programmatic and professional)
The Academic Curriculum: Selected Quality Indicators to Consider

- **Amount of time to complete the curriculum**
  - Length of the curriculum may impact the breadth and depth of study that is possible.
  - 4 years.....Or less??
    - Many other doctoral-level professions have 4-year curricula
    - Most Au.D. programs believe that 4 years are necessary to acquire knowledge and skills
    - Some contend that the same outcomes are possible in less time.

The Academic Curriculum: Selected Quality Indicators to Consider

**Amount of Time to Complete the Curriculum (cont’d)**

- Compare length of curriculum to three other professions:
  - Optometry (often compared to audiology)
  - Physical Therapy (also transitioning to the doctoral level)
  - Medicine
- Based on published standards
<table>
<thead>
<tr>
<th>Professional Curriculum</th>
<th>Specified Length of Program</th>
</tr>
</thead>
<tbody>
<tr>
<td>Optometry</td>
<td>Minimum 4 years</td>
</tr>
<tr>
<td>Physical Therapy</td>
<td>At least 3 academic years</td>
</tr>
<tr>
<td></td>
<td>o Preferably, the series of courses included in the <em>professional curriculum</em> is awarded at least 90 <em>semester credit hours</em> (or the equivalent) and the clinical education component of the curriculum includes a minimum of 30 weeks of full-time <em>clinical education experiences</em>.</td>
</tr>
<tr>
<td>Medicine</td>
<td>At least 130 weeks of instruction</td>
</tr>
</tbody>
</table>

**The Academic Curriculum: Selected Quality Indicators to Consider**

- **Basic Science Content**
  - Need sufficient depth and breadth of basic science knowledge to warrant the doctoral designation
  - May need to increase prerequisite requirements and/or include more basic science in the academic curriculum
Basic Science (cont’d)

- Examples:
  - Chemistry and advanced biology may be needed to study pharmacology.
  - Concepts from molecular biology may be needed to understand and keep current in genetics.
  - More in-depth coursework in amplification may necessitate stronger backgrounds in electronics and mathematics.

Optometry – Specified Basic Science

- Basic science instruction must provide a foundation of knowledge in physical, biological, and behavioral sciences essential for clinical optometric care.
- From the Illinois Rules of the Optometric Practice Act: anatomy, physiology, and biochemistry
Physical Therapy - Specified Basic Science

- biological and physical sciences (e.g., anatomy/cellular biology, histology, physiology, exercise physiology, exercise science, biomechanics, kinesiology, neuroscience, pathology, and pharmacology).
- behavioral sciences (e.g., applied psychology, applied sociology, communication, ethics and values, management, finance, teaching and learning, law, clinical reasoning, evidence-based practice, and applied statistics), including laboratory or other practical experiences.

Medicine - Specified Basic Science

- Behavioral and socioeconomic subjects, in addition to basic science and clinical disciplines.
- Contemporary content of those disciplines that have been traditionally titled anatomy, biochemistry, genetics, physiology, microbiology and immunology, pathology, pharmacology and therapeutics, and preventive medicine.
- Instruction within the basic sciences should include laboratory or other practical exercises that entail accurate observations of biomedical phenomena and critical analyses of data.
The Academic Curriculum: Selected Quality Indicators to Consider

- **Inclusion of Scope of Practice**: Should all areas be included in the curriculum and all areas to the same depth?
  - Includes identification, assessment, treatment and rehabilitation, hearing conservation, prevention, intraoperative neurophysiologic monitoring, and education/research/administration.
  - Including the full scope to a sufficient depth may impact length of the curriculum as measured by credit hours.

The Academic Curriculum: Selected Quality Indicators to Consider

**Scope of Practice** (Cont’d)

The following table shows that the number of credit hours in Au.D. curricula varies substantially across programs. Perhaps the scope of practice is being taught to a greater breadth and depth in some programs than in others.

*NOTE: These preliminary data should be interpreted cautiously (CAA, 2005).*
### CAA Accredited Au.D. Programs

**Approximate Data from CAA (n~56 programs)**

<table>
<thead>
<tr>
<th></th>
<th>RANGE</th>
<th>MEAN</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total Academic Credits</td>
<td>82-164</td>
<td>119</td>
</tr>
<tr>
<td>Didactic Credit Hours</td>
<td>58-117</td>
<td>79</td>
</tr>
<tr>
<td>Clinical Credit Hours</td>
<td>15-75</td>
<td>38</td>
</tr>
</tbody>
</table>

### The Academic Curriculum: Selected Quality Indicators to Consider

**Scope of Practice (Cont’d)**

- Do quality indicators include specific coursework or number of credit hours or both?
- Should core didactic areas be identified? For example, areas such as diagnostics, rehab, vestibular (or others) would be taught in greater depth than other areas.
The next slide shows the previous data, but now it is compared to the number of credit hours reported by Doctor of Physical Therapy programs.

- Notice that the mean number of didactic hours reported for Au.D. programs is 13% less than the mean number of didactic hours reported for D.P.T. programs (79 vs 90.9). In this comparison, the Au.D. academic curricula appear to have fewer hours than the D.P.T. academic curricula.

### CAA Accredited Au.D. Programs Compared to D.P.T. Programs

<table>
<thead>
<tr>
<th>Approximate Data</th>
<th>RANGE</th>
<th>MEAN</th>
<th>D.P.T. Programs – Mean Total Hours (adj.)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total Acad. Credits</td>
<td>82-164</td>
<td>119</td>
<td>115.5</td>
</tr>
<tr>
<td>Didactic Acad. Credits</td>
<td>58-117</td>
<td>79</td>
<td>90.9</td>
</tr>
<tr>
<td>Clinical Credit Hrs.</td>
<td>15-75</td>
<td>38</td>
<td>24.3</td>
</tr>
</tbody>
</table>
The Academic Curriculum: Selected Quality Indicators to Consider

Scope of Practice (Cont’d)

- Development of specialty areas may be a quality indicator.
  - A program with exceptional expertise and resources may develop and feature that aspect of its curriculum.
  - Specialty areas require attention to curriculum design and content.
  - Example: A program with an exceptional pediatric base may include coursework in child development; pediatric neurology; pediatric assessment, management, and rehab; educational audiology; coursework may be complemented by special pediatric clinical rotations.

The Academic Curriculum: Selected Quality Indicators to Consider

- Research Content of the Academic Curriculum
  - Coursework in research design and statistics
  - Faculty-conducted research
  - Infusion of research-clinical link throughout the curriculum and other learning activities.
  - Student opportunities to engage in clinical investigations and/or systematic reviews of clinical evidence.
  - Conceptual foundations of evidence-based practice
  - Opportunity to conduct investigative project
  - Balance between professional and research components of the academic curriculum
Of the three professions we looked at previously (optometry, PT, Medicine), only the standards for optometry address the research component.

(next slide)

<table>
<thead>
<tr>
<th>Professional Curriculum</th>
<th>Specified Research Component</th>
</tr>
</thead>
<tbody>
<tr>
<td>Optometry</td>
<td>The program must support, encourage, and maintain research activity in vision and related services</td>
</tr>
</tbody>
</table>
The Academic Curriculum: Selected Quality Indicators to Consider

**Shared Instruction**
- A single faculty in audiology may not be qualified to provide all the didactic teaching needed in basic science, professional scope of practice, and research areas.
- Non-audiology faculty may offer special expertise and new perspectives.
- Audiology faculty manage the curriculum content; balance between departmental courses and courses provided by other departments or outside faculty.
- Standards from Optometry and Medicine address this issue (Next slide).

---

Use of instructors/courses outside the department

<table>
<thead>
<tr>
<th>Professional Curriculum</th>
<th>Curricular Elements Taught by Non-core Faculty</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Optometry</strong></td>
<td>With shared instruction, the program must retain primary responsibility for its curriculum</td>
</tr>
<tr>
<td><strong>Medicine</strong></td>
<td>There must be comparable educational experiences and equivalent methods of evaluation across all alternative instructional sites.</td>
</tr>
</tbody>
</table>
Academic Curriculum: Breadth & Depth

- Avoid being constrained by the master’s curriculum as we identify quality indicators of Au.D. academic curricula.
- Process has been “backwards.” Programs developed academic curricula, and now we are going back to identify quality indicators.

Academic Curriculum: Breadth & Depth

- The professionals we are educating and training are different than those we educated just a few years ago.
- As a result, the practice of audiology will change, and
- Curricula will continue to change and update more than ever before.
ACADEMIC CURRICULUM CYCLE

Curriculum Changes
↓
New Level of Audiologist
↓
New Level of Audiology Practice
↓
More Curriculum Changes and Updates
CLINICAL CURRICULUM
Depth and Breadth
(Practicum – Years 1-3)

Gary P. Jacobson, Ph.D
Vanderbilt University
Nashville, TN

Credit Where Credit is Due
Appreciation for Helpful Comments

• Sue Hale, M.CD.
• Gus Mueller, Ph.D.
• Todd Ricketts, Ph.D.
• Neil Shepard, Ph.D.
Assumptions of Presentation

- Academic programs will have insufficient on-site clinical placements for 1\textsuperscript{st}-3\textsuperscript{rd} year students and must seek opportunities off-site.
- Students will enter clinical doctorate programs with little, if any, background in audiology and will be unable to provide any real support to off-site practices.

Assumptions of Presentation

- Academic programs will have to balance ‘control over the process of clinical training’ with what are practical expectations.
- There will be variability in the depth and quality of individual clinical experiences.
Discussion of Certification Standards

www.asha.org/membership-certification/certification/aud_standards_new.htm

- “Time spent in clinical practicum experiences should occur throughout the graduate program.”
- “Students shall participate in practicum only after they have had sufficient preparation to qualify for such experience.”

Discussion of Certification Standards

www.asha.org/membership-certification/certification/aud_standards_new.htm

- “Students must obtain a variety of clinical practicum experiences in different work settings and with different populations so that the applicant can demonstrate skills across the scope of practice in audiology.”
• "Supervision of clinical practicum must include direct observation, guidance, and feedback…"
• "Supervisors must hold a current CCC in the appropriate area of practice."

• "…clinical educators must have assessed developing knowledge and skills throughout the applicant’s program of graduate study… Applicants may also be part of the process through self-assessment."
General Topic 1: What are characteristics of clinical training models that address the full breadth and depth of the scope of practice?

- The “classical” approach is to take the student from...:
  - observation of the supervisor – to -
  - direct supervision of the student doing less technically sophisticated activities – to -
  - direct supervision of the student doing more technically challenging activities – to -
  - more independent practice in the clinic.

Topic 1: Questions
What are clinical models that address preparation of students to deliver clinical services across the breadth and depth of the scope of practice?

- Is it possible to provide supervision of students in a busy clinical practice?
- Is it feasible to implement “competency based” training models in busy clinical practices?
- Is it possible for students to have a sense of independence and be supervised in clinical practices?

Continued...

- How do other activities (e.g. case conference/grand rounds, journal clubs) augment conventional clinical training.
- Can simulated experiences in laboratory settings augment skills students will bring to the off-campus clinical sites?
Continued...

- Must students “master” all areas of clinical audiology to begin the 4th year as a generalist?
- Is it enough to provide students with clinical practicum experiences that meet the “letter of the certification standard” versus across the scope of practice (e.g. advanced BFT, IOM, CI), or,
- Must patient contact be across scope of the profession of audiology (i.e. versus computer simulations etc.)?

How often, & when, should clinical experiences occur throughout the clinical doctoral training?

- Should clinical training begin after some point in academic training so that students have an adequate academic foundation to make use of the practical training (e.g. versus from day 1)?
  - i.e. should the majority of the clinical experiences occur during the 2nd year? 3rd year? or 4th year externship?
What criteria should programs use to select off-site clinical facilities? ("Beggars can't be choosers?")

- Should there be a minimum set of parameters that defines a quality off-site placement?
  - e.g. defined by degree and experience of staff?
  - e.g. defined by scope/type of clinical services offered at that site?
- Should these parameters be defined by academic programs? ...national organizations?

How should academic programs evaluate the quality & effectiveness of clinical training provided by off-sites?

- Will quality & effectiveness be based on:
  - subjective evaluations by students, or,
  - an external standardized measure (e.g. inservice examination) that permits training programs to place their students into a larger (i.e. national) context, or,
  - by external accreditation (e.g. the former PSB)
General Topic 2: What are the qualifications of off-campus clinical supervisors in a quality clinical doctoral program?

- For larger programs there will be inadequate on-site clinic support for 1st-3rd year students.
- It will be essential for students to obtain clinical experiences through off-site placements.
- These will be staffed by a mixture of MA/MS, Au.D., and Ph.D. clinicians.

Topic 2: Questions
What minimum qualifications should clinical supervisors possess?

- M.A.?
- Au.D.?
  - Is it necessary for clinical doctoral students to be supervised by Au.D. clinicians?
- Ph.D.?
  - Have we been complicit in the destruction of the Ph.D. by creating the dichotomy that Au.D. = clinician and Ph.D. = researcher.
- CCC-A?
- AAA Board Certification?
- State license?

What minimum clinical experience should be required for off-campus supervisors?

- Specified by numbers of years of patient contact (e.g. 5 years clinical experience, 10 years clinical experience?), or...
Continued...

• Other benchmarks that might be used (?):
  • intensive experiences of supervisor
  • professional development with certain procedures
  • specialty certification/recognition
  • being a recognized expert in an area due to good clinical outcomes
  • strong referral base from other professionals?

What type of supervisory education and/or experience should be required for off-campus supervisors?

• Should professional development in supervision be required of clinical faculty/supervisors?
• How do you enforce this requirement for off-site faculty if academic programs are hard-pressed to find practicum sites (i.e. continuing education can be expensive).
What are the expectations (and support) for continuing professional development for clinical faculty?

- How can we ensure the high quality clinical training of our students?
- CCC-A? (i.e. min. 1.0 CE/yr)
- Should CE requirements be increased for off-site supervisors?
  - Will this dis-incent supervisors from offering off-site supervision for academic programs?
  - What is the external evidence showing a relationship between CE and clinical competence?

How is the initial and continuing competence of off-campus supervisors determined?

- Maintenance of certification?
- Periodic review by an accrediting agency (e.g. the old PSB model)?
- CAA review of credentials submitted with annual reports as well as re-accreditation information?
How are the program’s expectations for off-site clinical supervisors (i.e. training, degree, competence) different from onsite faculty?

What compensation could/should be offered to off-site supervisors in return?

• Should off-site supervisors be compensated…
  • in cash?
  • with adjunct appointments and access to university resources
  • with free entry to continuing education activities provided by the home Departments?
  • All or none of the above?
• Should academic programs be compensated by off-sites if students produce revenue?
General Topic 3: What are clinical supervisors’ expectations of students when placed in off-sites for clinical experience?

• Clinical supervisors will be volunteering their practices and their own valuable time to train students.
• Clinics have a life of their own. Busy clinics do not tolerate slow throughput. Accordingly, clinics have a right to expect students to behave in specific ways.

Topic 3: Questions
How does the off-site communicate to the academic program what characteristics it desires in students?

- Should the off-site supervisor be permitted to interview and select the student/s?
- Is it reasonable for supervisors:
  - to expect students to possess a minimum level of clinical training and proficiency prior to placement?
  - to specify what minimum level of training or proficiency they will accept given their knowledge of the specific training program.

Continued...

- Is it reasonable for supervisors:
  - to expect students to observe only when the supervisors are engaged in major retail transactions?
  - to have the option of rejecting students if they are continually late, dress inappropriately, talk inappropriately?
How does the program communicate to the clinical facility what level of knowledge and skills their students possess prior to placement, and, hope to possess after placement?

- Student to compile a “portfolio” that describes their academic training (e.g. courses and grades), and previous clinical experiences (e.g. sites, types of clinical exposures, evaluations) they carry with them from off-site to off-site?
- Discussion between off-site supervisor and the academic program?

Are these expectations different from on-site clinical placements?

- Should on-site clinical placements continue be the initial clinical experiences where students learn “basic” clinical audiological concepts (e.g. pure tone air and bone conduction audiometry, masking) prior to off-site placement?
General Topic 4: What are optimal methods used by clinical supervisors to communicate appropriate feedback?

- Students will work both on-and-off campus with a number of different clinical supervisors.
- If left without direction each may provide feedback to the student in different ways.
  - May range from organized feedback, to ad lib, to none at all.

Topic 4: Questions
What are optimal methods to communicate feedback... to students regarding their performance in clinical sites?

- Should supervisors provide feedback about student performance:
  - ...directly to the student?
  - ...directly to the practicum coordinator (i.e. should feedback be filtered or interpreted and presented to the student in a standardized manner by the practicum coordinator?)

What are optimal methods to communicate feedback... to program faculty regarding students’ on-site, and, off-site clinical performance?

- Methods of providing feedback regarding clinical competencies:
  - universal form for providing written feedback
  - a form developed by each training program
  - let things vary as they are now?
General Topic 5: Should off-sites that provide the majority of clinical experiences have greater opportunities to influence the academic program?

- e.g. Program A provides students with 600-800 hours across the first three years of the program and Program B provides very limited clinical experience in the first three years
  - Should Program A expect to have influence in student admissions, student clinical appraisals, etc. across the full scope of the academic program?

General Topic 6: To what extent should students have exposure to clinic-based research

- Students must learn to read critically existing and future scientific literature in order to grow professionally
- Is it appropriate for supervisors to expect students to participate in research projects (e.g. chart reviews, data collection) in off-site placements.
Audiology Education Summit
January 14-16, 2005

Interactions:
Academic and Clinical Relationships

Lisa Lucks Mendel, Ph.D.
The Big Challenge

- To optimize the interactions and relationships between the academic and clinical experiences in a clinical doctoral program in audiology
Academic and Clinical Experiences

The Players

Didactic Experiences  Clinical Experiences
**Didactic vs. Clinical**

<table>
<thead>
<tr>
<th>Didactic</th>
<th>Clinical</th>
</tr>
</thead>
<tbody>
<tr>
<td>– Classroom learning</td>
<td>– Experiential learning</td>
</tr>
<tr>
<td>– Academic faculty</td>
<td>– Clinical faculty</td>
</tr>
<tr>
<td>– Laboratory experience</td>
<td>– Hands-on experience</td>
</tr>
<tr>
<td>– Sequence of coursework</td>
<td>– Sequence of clinical</td>
</tr>
<tr>
<td>– Content of coursework</td>
<td>experiences</td>
</tr>
<tr>
<td>– Hours</td>
<td>– Types experience</td>
</tr>
</tbody>
</table>

**Challenge #1: Integration of Information**

- Effective integration of content from academic coursework into the student’s clinical experience
- Fostering the application of the knowledge obtained in the academic coursework to the skill demonstrated in the clinic
More Players

Academic Faculty

Clinical Faculty

Degrees

• Doctorate
  – Ph.D.
  – Au.D.
  – Other

• Masters
  – M.A.
  – M.S.
  – Other
Faculty Roles and Responsibilities

- Involvement in
  - Academic education
  - Clinical education

Challenge #2: Enhancing Interactions

- Enhancement of the interaction between the academic and clinical faculty
Off-Site Clinical Experiences

Optimal interactions and relationships between the clinical doctoral program and off-site facilities

The Players

Academic Preparation  Clinical Preparation
Preparation

- Academic
  - Coursework
  - Assessment of knowledge

- Clinical
  - Experience
  - Assessment of skill

Challenge #3: Preparation

- Balancing academic and clinical preparation for optimal off-site clinical experiences and placements
- Assessment of knowledge and skill
More Players

University Faculty  Off-Site Supervisors

Interaction Between University Faculty and Off-Site Supervisors

- Coordination
- Interaction
- Level of involvement
- Rotations vs. 4th year
One More Player

Student Learning Objectives and Assessment

Scope of Practice
Challenge #4: Enhancing Interactions with Off-Site Facilities

- Enhancing interaction between university faculty and off-site coordinators
- Considering the full scope of practice
- Coordinating objectives and assessments of student performance

Clinical and Research Experiences
The Role of Research in the Clinical Doctorate

- Interactions between research and clinical training
  - Contribution to maintaining and enhancing the profession/discipline
  - Contribution to the science of the profession

- Role of the clinical doctorate trained professional in the audiological research community

Challenge #5: Enhancing Relationships Between Clinic and Research

- Defining roles and contributions
- Evidence-based practice
The University and the Community

Interacting with the Community

- Enhancing connections within the community for improving clinical education
- Acknowledgement of community and off-site contributions toward students’ clinical education
- Cooperation
Challenge #6: Enhancing Interaction with the Community

- Determine ways to improve the clinical education of our students

Interaction Challenges

1. Integration of Information
2. Clinical and Academic Faculty
3. Clinical and Academic Preparation
Interaction Challenges

4. Off-site Facilities

5. Clinic & Research

6. Community
APPENDIX F: Glossary of Terms

Although the Summit did not include a discussion of specific definitions, the Advisory Committee approved the following glossary for the purposes of this report:

**Academic Curriculum** – course work and experiences designed to meet accepted standards for education and training

**Accreditation** – a process of external quality peer review used by higher education to scrutinize colleges, universities, and programs.

**Carnegie Classification Categories** – leading typology of American colleges and universities that is the framework in which institutional diversity in U.S. higher education is commonly described (http://www.carnegiefoundation.org/Classification/)

**Clinical Curriculum** – course work and clinical experiences designed to provide the student with the knowledge and skills for assessment and treatment

**Clinical Education** – instruction in the application of knowledge and skills in clinically relevant situations

**Clinical Practicum** – clinical instruction and supervised clinical experiences in the application of knowledge and skills

**Clinical Supervisor** – a professional appropriately trained and credentialed who serves as a mentor to a student engaged in a professional clinical training program OR On-site or externally-based individuals who supervise practicum of students or Fellows in a clinic, school, or professional service program

**Course Work** – a class offered for college credit that is part of a larger curriculum of study, and may be for academic, clinical, or laboratory experience.

**Credit Hours** – standard of measure for college courses. Each credit hour requires one hour of teacher/student contact per week for a semester or quarter. Most college courses are worth 3 credit hours and thus a student is expected to be in class 3 hours per week for that course.

**Curriculum** – the series of courses offered by a department or program to meet degree requirements and to develop knowledge and skills within a specific discipline.

**Externship** – clinical experience off campus designed to allow a student to apply knowledge and skills of assessment and treatment to clinically relevant patients under the supervision of a clinical supervisor

**Faculty** – any member of an education program whose responsibilities include the provision of instruction/demonstration for the purposes of passing that relevant information on to a student enrolled in the program
**Mentor** – a trusted advisor; a mentor often serves as an advocate, nurturer, friend in the professional setting, role model, and teacher. Mentoring is often key to professional development.

**Preceptor** – an expert or specialist who gives practical training to a student

**Program Clinic** – on-campus clinic(s) or those staffed by university/program employees

**Research: Applied/Clinical** – scientific research directed toward application in the field or for quality assurance and quality improvement.

**Research: Basic** – scientific research directed toward the development of knowledge *per se.*
APPENDIX G: Poster Presentations

Poster Board 1

Title: The Awareness of Audiology Among College Students
Authors: Jeremy J. Donai, AuD, L. Doerfler Audiology Assoc.
         Diana C. Emanuel, PhD, Towson University
         Peggy A. Korczak, PhD, Towson University
         Barbara Laufer, PhD, Towson University

Abstract: It is important for the profession of audiology to attract highly qualified students into the field early in their academic career, as they are making decisions regarding a major field of study and an eventual career path. This study was conducted to examine the awareness of both the profession of audiology and the Communication Science and Disorders (CSD) Department among college freshman students at California University of Pennsylvania (Cal U). Fifty-four percent of the students reported being unfamiliar with the profession of audiology, while 46% reported some degree of familiarity with the profession. Most of the students who were familiar with the profession were unaware of the undergraduate program in Communication Science and Disorders at their university. Many of these students reported their first encounter with the profession occurred during their high school experience.

Poster Board 2

Title: From MS to AuD: Challenges and Opportunities
Authors: Martha R. Mundy, AuD, University of North Carolina
         Jackson Roush, PhD, University of North Carolina

Abstract: This presentation will examine the transition from master’s to doctoral education in audiology at a research intensive (R-1) academic institution, within a School of Medicine, based on our experience with three AuD cohorts. We will highlight changes in the admissions review process, coursework, clinical education/rotation, comprehensive examinations, research requirements, and an innovative plan for fourth year externships involving core clinical rotations. In addition to the many positive aspects of the transition we will examine controversial and unresolved issues, particularly those related to clinical education in the fourth year.
**Poster Board 3**

**Title:** The PCO School of Audiology Professional AuD Degree Curriculum  
**Author:** George S. Osborne, PhD, DDS, Dean, PCO School of Audiology

**Abstract:** This poster will outline the modular curriculum of the PCO School of Audiology professional AuD degree program. The curriculum, a full-time 4 year experience, adds an extensive basic science biomedical foundation to the traditional academic/clinical components.

**Poster Board 4**

**Title:** Student Engagement in the AuD Program at Western Michigan University  
**Authors:** Gary D. Lawson, PhD, Western Michigan University  
Teresa Crumpton, AuD, Western Michigan University

**Abstract:** Characteristics of clinical doctoral programs, no doubt, will vary with the program faculty, the program’s college home, university, and surrounding community, and with the available resources. Each program must use innovative and creative ideas to take best advantage of its talents and resources to achieve program quality. This poster presentation will share with audiology colleagues some ways in which the AuD program at Western Michigan University engages its students. The poster will present a flow chart describing the program’s major requirements (including the summative assessment) and will present an overview of the program faculty roles, the typical curriculum, the on-campus clinical service program, a student assistance plan for learning through work; interactions between classroom, research, and clinical teaching; how audiology contributes to the financial status of the clinic at large; the use of off-campus practicum rotations; and the use of other off-campus learning opportunities.

**Poster Board 5**

**Title:** The Northeast Ohio AuD Consortium (NOAC): A Collaborative Model  
**Authors:** Sharon A. Lesner, PhD, The University of Akron  
Mona Klingler, AuD, The University of Akron  
Craig Newman, PhD, The Cleveland Clinic Foundation  
Sharon A. Sandridge, PhD, The Cleveland Clinic Foundation

**Abstract:** The Northeast Ohio AuD Consortium (NOAC) is a collaborative AuD program that includes The University of Akron, Kent State University, and The Cleveland Clinic Foundation. The purpose of this poster will be to describe the Consortium, including information about the administrative structure, curriculum, and resources. Particular emphasis will be given to the benefits that result from a consortium model of education as well as the unique challenges such a model presents.
Poster Board 6

Title: Combining Clinical Training and Research in an Audiology PhD Program
Author: Laura Jennings Kepler, PhD, University of Colorado at Boulder

Abstract: This poster will discuss the PhD program in Audiology at the University of Colorado at Boulder. This program is designed for students who are seeking clinical competency and certification in addition to earning a research degree. The poster will address the issue of research competencies for doctoral training in audiology, including the resulting need for increased interactions and relationships between the academic, research, and clinical curricula. It will also discuss the challenges of making extensive use of off-campus clinical training sites in a doctoral program.

Poster Board 7

Title: Integrating Research Into the AuD Program at The University of Tennessee
Author: Ashley W. Harkrider, PhD, University of Tennessee

Abstract: AuD students at The University of Tennessee are required to design and implement a research project in which data are collected, analyzed, interpreted, and presented in poster format to the department. This is a two semester process that begins with enrollment in a course on research design taken Fall Semester of the second year. During this class, students are taught critical analysis of published literature, methods for effectively designing experiments, basic statistics, and appropriate ways to interpret findings. Each student chooses a research topic and is advised by a project committee comprised of (1) the course instructor and (2) the academic faculty member within the department whose area most closely matches the research interest. By the end of the course, a project prospectus is completed and approved by the project committee. The Spring Semester of the second year, the student implements the experiment, analyzes the data, and presents the findings to the department and possibly at a state or national meeting. Integrating research into the AuD program by requiring students to plan and execute a project allows these future clinicians to learn the importance of staying current with the literature as well as using essential tools such as reading critically and interpreting findings appropriately. Placing the research requirement during the second year provides ample opportunity for a student who may decide to pursue a PhD to do so by the start of the third year. Examples research topics will be included.

Poster Board 8

Title: Interdisciplinary Opportunities for Instruction and Research
Authors: Ron D. Chambers, PhD, University of Illinois at Urbana-Champaign
Lou Echols-Chambers, MS, University of Illinois at Urbana-Champaign
David Gooler, PhD, University of Illinois at Urbana-Champaign
Charissa Lansing, PhD, University of Illinois at Urbana-Champaign
Carol Parker, M.A., University of Illinois at Urbana-Champaign
Abstract: The Department of Speech and Hearing Science at the University of Illinois at Urbana-Champaign (UIUC) offers a Doctor of Audiology (AuD) degree for clinical students and a Doctor of Philosophy (PhD) degree for research students. The Department includes affiliate faculty members who are interested in hearing and its disorders from diverse disciplines from across and outside of the campus such as psychology, cell and structural biology, electrical and computer engineering, molecular and integrative physiology, veterinary biosciences, and Carle Foundation Hospital in Urbana, Illinois. These faculty members may participate in the programs of both AuD and PhD students. These affiliate faculty may teach courses that are appropriate for students interested in hearing from diverse disciplines, offer guest lectures in speech and hearing science courses for AuD and PhD students, serve on student research committees for AuD and PhD students, and may direct or co-direct student research projects for AuD and PhD students.

The AuD students complete a Doctoral Research Project during the third year of the program that is a cumulative, rigorous project of clinical focus but of smaller scope than a dissertation. The students may have the opportunity to observe and/or work in laboratories and clinical practice settings of the affiliate faculty members, and the students’ Doctoral Research Project, if appropriate, may be carried out in these locations.

As part of the interdisciplinary effort, AuD and PhD students may have the opportunity to participate in multidisciplinary research programs. For example, the Intelligent Hearing Aid Project has included faculty from diverse units at the UIUC and members of the hearing aid industry, and has as its purpose the development of high-performance hearing aid systems that are capable of extracting a sound in noise. The Biomolecular High-Resolution Cochlear Implant Technology Project is a multidisciplinary approach to developing an improved technology for cochlear implants, and involves scholars from diverse units at the UIUC, Carle Foundation Hospital, and other universities in the use of modern biomolecular and bioengineering techniques to develop an improved association between auditory nerves and cochlear implant electrodes. The Carle Clinic/Carle Foundation/ UIUC Research Group involves experts from speech and hearing science, medicine, and industry who collaborate on research projects for the diagnostics, treatment, and rehabilitation of the hard-of-hearing and deaf. Current projects involve the effects of aging on auditory evoked potentials and electric auditory evoked potentials recorded from patients with cochlear implants. The poster will describe the structure of the AuD program, and how the interdisciplinary opportunities described above potentially enrich the depth and breadth of the clinical research training available for AuD students.

Poster Board 9

Title: Faculty Team Assessment as a Tool to Improve Learning Across the Curriculum
Authors: Elaine Mormer, MA, University of Pittsburgh
         Kris English, PhD, University of Pittsburgh

Abstract: The AuD degree gives training programs the opportunity to teach more courses and provide more clinical training, but this additional instruction also increases the worry that students will merely "learn facts for grades," without acquiring genuine understanding of the content. All instructors grapple with a student mindset that assumes "the only learning worth doing is learning you get points for doing" (Weimer, 2002, p. 123).
The University of Pittsburgh has adopted a "3-D Assessment" approach. In addition to the traditional "one-dimension" assessments (exams within each course), we also assess students in two other dimensions: horizontally (that is, across courses and clinic within a term, measuring understanding of content and the connections across content) and vertically (that is, over time: measuring how students maintain/apply/build on that understanding from one term to the next). To do so, we use faculty team assessments, conducted in an oral exam or practical exam format, as described by Biggs (1999), Rawson (2000), and Angelo and Cross (1993). This poster will explain the rationale behind faculty team assessments and show examples of how such assessments are implemented across courses and clinic in our AuD program.

Poster Board 10

Title: Tracking Student Clinical Performance: The NSU Model
Authors: Teri Hamill, PhD, Nova Southeastern University
Barry Freeman, PhD, Nova Southeastern University
Jonette Owen, AuD, Nova Southeastern University
Erica Friedland, AuD, Nova Southeastern University

Abstract: The poster session will describe how the Nova Southeastern University AuD program faculty:
- set clinical expectations for the first two years of training, and incorporate those expectations into the clinic course syllabi
- provide feedback to students about their progress towards meeting clinical skill proficiency targets, including derivation of a numerical course grade
- utilize the department’s exhaustive list of diagnostic and amplification competencies, which are targeted to be completed by certain points in training
- incorporate the clinical competency checklist into documentation of having achieved the CAA Knowledge and Skills Acquisition benchmarks.

Poster Board 11

Title: Pediatric Audiology: Extern Site Scope of Experience
Author: Gilbert R. Herer, PhD, Children’s National Medical Center, Washington, DC

Abstract: The advent of universal newborn hearing screening programs nationwide over the past decade revealed the lack of pediatric audiologists available for vital follow-up services for infants, babies, and children identified with hearing loss. The paucity of audiologists in the United States with pediatric experience was highlighted at three national conferences in 2004. Doctoral education programs in audiology provide an opportunity to significantly increase the cadre of pediatric audiologists by offering the clinical training necessary to address the comprehensive needs of children with impaired hearing. This poster session describes the ingredients of the clinical curriculum content at extern sites needed to prepare doctoral students for careers as pediatric audiologists. It reviews the programs, procedures, professional communications, and specific clinical elements that would provide the necessary experiences to undertake the important audiological care
responsibilities required by children with hearing loss. Programs include hospital clinics, universal newborn hearing screening, cochlear implant team, and educational audiology. Procedures involve case history assessment, behavioral evaluation methods, electrophysiological testing, infant screening, cochlear implant protocols, hearing aid selection/fitting, central auditory processing evaluation, and auditory neuropathy/dysfunction exploration. Professional communication encompasses written reports, parent conferencing/counseling, communication with referral sources and other professionals, and team participation. Specific clinical elements include the etiological diagnostic work-up, language/education/intervention methods, and cultural and language diversity understanding, as well as clinical experiences with chronic otitis media, minimal/unilateral/progressive hearing losses, and case management/advocacy. Children are a segment of our society who, for the first 18 years of their lives, need understanding of their physical, social, emotional, and cognitive development. They and their families/caregivers are a very unique population to serve as audiologists. Doctoral students need comprehensive practicum experiences that allow them to understand the many facets of pediatric audiology. The experiences set forth in this poster session should prepare them to meet the challenges and opportunities presented by children who will come into their care in the future.

Poster Board 12

Title: Innovative Strategies for Connecting With Metropolitan Off-Sites to Better Clinical AuD Education
Authors: Connie Barker, PhD, Lamar University
          Sumalai Maroonroge, PhD, Lamar University

Abstract: The primary objective of the AuD program at Lamar University is to train competent practitioners in the diagnostic and management of audiology service. The Doctor of Audiology degree is a four-year post baccalaureate program that includes three years of course work with clinical experiences plus one year of full-time externship. The AuD requires a minimum of 86 semester credits of didactic coursework and 66 semester credits of clinical practicum and externship. The course work provides an overall knowledge while the clinical component enhances the practical skills. We have a variety of practical opportunities at the Speech and Hearing Center and 23 different off-sites. Lamar University is a comprehensive public university with no medical facility affiliation. The purpose of this poster is to describe successful strategies to partner with various metropolitan hospitals and clinics to better our clinical education. The strategies include selection of sites that share our mission, ranking of sites based on students’ need, and team approach for clinical education.
Title: The Northeast Ohio AuD Consortium (NOAC): Fourth-Year Supervised Professional Experience at The Cleveland Clinic Foundation

Authors: Sharon A. Sandridge, PhD, The Cleveland Clinic Foundation
         Craig W. Newman, PhD, The Cleveland Clinic Foundation
         Sharon A. Lesner, PhD, The University of Akron

Abstract: The Section of Audiology in the Head and Neck Institute at the Cleveland Clinic Foundation (CCF), the School of Speech-Language Pathology and Audiology at The University of Akron, and the School of Speech Pathology and Audiology at Kent State University have formed The Northeast Ohio AuD Consortium (NOAC). The primary goal of this collaborative effort is to merge the strong assets of two university programs focusing on the scientific and clinical bases of audiology with a major medical center offering students clinical exposure to the breadth and depth of contemporary diagnostic and rehabilitative audiology. Students completing their 12-month fourth-year extern at CCF will complete a number of rotations under the mentorship of practicing audiologists who will assume responsibility as preceptors and primary educators. This poster session will describe the rotations that will be both within the Audiology Clinic as well as other clinical (e.g., otology, gerontology, pediatric, and neurology clinic observations, otology surgery) and educational (e.g., temporal bone lab, audiology research lab, grand rounds, and journal club) experiences. In addition, we have created a learning lab, known as Hearing Education and Research (HEAR) Lab that has been designed to provide guided clinical learning experiences in behavioral and physiologic audiologic technique and interpretation. The educational and clinical opportunities offered through the HEAR Lab will be highlighted.
# APPENDIX H: Participant List

<table>
<thead>
<tr>
<th>Name</th>
<th>Institution</th>
<th>Address</th>
<th>Email</th>
</tr>
</thead>
<tbody>
<tr>
<td>Nancy L. Aarts</td>
<td>USA Speech &amp; Hearing Center</td>
<td>2000 University Commons, Mobile, AL 36688</td>
<td><a href="mailto:naarts@usouthal.edu">naarts@usouthal.edu</a></td>
</tr>
<tr>
<td>R. Steven Ackley</td>
<td>Gallaudet University</td>
<td>800 Florida Ave. NE, Washington, DC 20002</td>
<td><a href="mailto:robert.ackley@gallaudet.edu">robert.ackley@gallaudet.edu</a></td>
</tr>
<tr>
<td>Connie J. Barker</td>
<td>Lamar University</td>
<td>P.O. Box 10076, Beaumont, TX 77710</td>
<td><a href="mailto:barkercj@hal.lamar.edu">barkercj@hal.lamar.edu</a></td>
</tr>
<tr>
<td>Dolores Battle</td>
<td>Buffalo State College</td>
<td>1300 Elmwood Avenue, Buffalo, NY 14222</td>
<td><a href="mailto:battlede@buffalostate.edu">battlede@buffalostate.edu</a></td>
</tr>
<tr>
<td>Christopher Bauch</td>
<td>Section of Audiology</td>
<td>200 1st Street SW, Rochester, MN 55905</td>
<td><a href="mailto:bauch.christopher@mayo.edu">bauch.christopher@mayo.edu</a></td>
</tr>
<tr>
<td>Nancy Barlow</td>
<td>Indiana Univ Hearing Clinic</td>
<td>200 S. Jordan Ave, Bloomington, IN 47405</td>
<td><a href="mailto:nbarlow@indiana.edu">nbarlow@indiana.edu</a></td>
</tr>
<tr>
<td>Lu Beck</td>
<td>Aud &amp; Spch Path Service (117E)</td>
<td>50 Irving Street, NW, Washington, DC 20422</td>
<td><a href="mailto:lucille.beck@med.va.gov">lucille.beck@med.va.gov</a></td>
</tr>
<tr>
<td>Teri James Bells</td>
<td>Univ of South Dakota</td>
<td>Dept of Communication Disorders, Vermillion, SD 57069</td>
<td><a href="mailto:tbellis@usd.edu">tbellis@usd.edu</a></td>
</tr>
<tr>
<td>Judith Blumsack</td>
<td>Auburn University</td>
<td>1199 Haley Center, Auburn, AL 36849-5232</td>
<td></td>
</tr>
<tr>
<td>Jason Box</td>
<td>Southwest Missouri State University</td>
<td>901 S National Ave., Springfield, MO 65804</td>
<td><a href="mailto:jasonbox@smsu.edu">jasonbox@smsu.edu</a></td>
</tr>
<tr>
<td>Carolyn J. Brown</td>
<td>University of Iowa Hospital</td>
<td>Dept Sp Path and Audiology, 127A SHC, Iowa City, IA 52242-1078</td>
<td><a href="mailto:carolyn-brown@uiowa.edu">carolyn-brown@uiowa.edu</a></td>
</tr>
<tr>
<td>Dennis L. Burrows</td>
<td>Constance Brown Hearing Ctrs.</td>
<td>1634 Gull Road, Kalamazoo, MI 49048</td>
<td><a href="mailto:dennisb@cbrown.org">dennisb@cbrown.org</a></td>
</tr>
<tr>
<td>Deb Carlson</td>
<td>University Of Texas Medical Brnc</td>
<td>301 University Blvd, Galveston, TX 77555-0523</td>
<td><a href="mailto:dlcarslo@utmb.edu">dlcarslo@utmb.edu</a></td>
</tr>
<tr>
<td>Arlene Carney</td>
<td>University of Minnesota</td>
<td>Dept of Commun Disorders, 164 Pillsbury Dr SE, Minneapolis, MN 55455</td>
<td><a href="mailto:carne005@umn.edu">carne005@umn.edu</a></td>
</tr>
<tr>
<td>Ron Chambers</td>
<td>Univ of Illinois</td>
<td>Dept. of Sp &amp; Hrng, 901 S 6th St, Champaign, IL 61820-6206</td>
<td><a href="mailto:rdc@uiuc.edu">rdc@uiuc.edu</a></td>
</tr>
<tr>
<td>Craig A. Champlin</td>
<td>Univ of Texas at Austin</td>
<td>Dept Comm Sci &amp; Dis, 1 University Station, A1100, Austin, TX 78712-1089</td>
<td><a href="mailto:champlin@mail.utexas.edu">champlin@mail.utexas.edu</a></td>
</tr>
</tbody>
</table>
William Clark
Washington University
660 S. Euclid Ave.
Campus Box 8042
St Louis, MO 63110
clarkw@msnotes.wustl.edu

Carol G. Cokely
600 Ridgecrest Cir
Denton, TX 76205
cokely@utdallas.edu

Raymond Colton
Syracuse University
Gebbie Hearing Clinic
805 S. Crouse Ave
Syracuse, NY 13244
rcholton@syr.edu

Deb Culbertson
East Carolina University
Room 7 Belk Annex 5
Greenville, NC 27858
culbertsond@mail.ecu.edu

Stephanie Davidson
Ohio State University
Rm 110 Pressey Hall
1070 Carmack Rd
Columbus, OH 43210
strang.7@osu.edu

T. Newell Decker
Univ of Nebraska-Lincoln
318 G Barkley Memorial Ctr
Lincoln, NE 68583
tdecker1@unl.edu

Lisa Devlin
Gallaudet University
800 Florida Ave. NE
Washington, DC 20002
lisa.devlin@gallaudet.edu

Sumitrajit Dhar
Northwestern University
2240 Campus Drive
Evanston, IL 60208
s-dhar@northwestern.edu

Neil DiSarno
Southwest Missouri State Univ.
901 South National Avenue
Communication Disorders
Springfield, MO 65804-0095
neildisarno@smsu.edu

Lou Echols-Chambers
University of Illinois
Dept of Sp & Hrg Science
901 S 6th St
Champaign, IL 61820
lec@uiuc.edu

Ann Clock Eddins
University at Buffalo
137 Cary Hall, 3435 Main St.
Buffalo, NY 14214
aeddins@buffalo.edu

Susan Erler
Northwestern University
2299 N Campus Drive
Evanston, IL 60208-3550
s-erler@northwestern.edu

Lauren Ero
ASHA
10801 Rockville Pike
Rockville, MD 20852
lero@asha.org

Marc Fagelson
East Tennessee State University
Dept of Comm Disorders
Box 70643
Johnson City, TN 37614-0643
fagelson@mail.etsu.edu

John A. Ferraro
Univ of Kansas Medical Center
Sp/Lang Hrg, Intercampus Prog
3901 Rainbow Blvd
Kansas City, KS 66160
jferraro@kumc.edu

Lisa Flores
TTUHSC Speech Language & Hearing
3601 4th St, Ste 2A300
Mailstop 6073
Lubbock, TX 79424
lisa.flores@ttuhsc.edu

Cynthia Fowler
Univ of WI - Madison
Dept Communicative Disorders
1975 Willow Drive
Madison, WI 53706
cgfowler@wisc.edu
Laura Kepler
SLHA Dept., 409 UCB
2501 Kittredge Rd.
Boulder, CO 80309
laura.kepler@colorado.edu

Tess Kirsch
ASHA
10801 Rockville Pike
Rockville, MD 20852
tkirsch@asha.org

M. Barbara Laufer
Towson University
3819 Grosvenor Dr.
Ellicott City, MD 21042-4939
blauffer@towson.edu

Gary D. Lawson
2608 Strathmore
Kalamazoo, MI 49009
gary.lawson@wmich.edu

Sharon A. Lesner
Audiology and Speech Center
School of SLP & Aud
U of Akron, 181 Polsky Bldg
Akron, OH 44325-3001
lesner@uakron.edu

James Mahshie
Gallaudet University
Dept of Hrg Spch & Lang Sci
800 Florida Ave NE
Washington, DC 20002
James.Mahshie@gallaudet.edu

Sumalai Maroonroge
Lamar University
11510 Ridge Run Drive
Houston, TX 77064
maroonroge@aol.com

Malcom R. McNeil
University of Pittsburgh
Dept of Communication Sci/Dis
4033 Forbes Tower
Pittsburgh, PA 15260
mcneil@pitt.edu

Dianne Meyer
Rush University Medical Center
Dept Comm Disorders & Sciences
1653 W Congress Parkway
Chicago, IL 60612
Dianne_H_Meyer@rush.edu

Elaine Mormer
University of Pittsburgh
4033 Forbes Tower
Pittsburgh, PA 15260
emormer@pitt.edu

Martha Mundy
UNC
CB 7190, Wing D Med School
Chapel Hill, NC 27599-7190
mmundy@med.unc.edu

Craig Newman
Cleveland Clinic Foundation
Desk A71
9500 Euclid Ave
Cleveland, OH 44195-5034
newmanc@ccf.org

Robert E. Novak
Purdue University
Dept of Aud/SP Sci, 500 Oval Dr
1353 Heavilon Hall, 13 C
West Lafayette, IN 47907
novakr@purdue.edu

Loretta M. Nunez
ASHA
10801 Rockville Pike
Rockville, MD 20852-3279
lnunez@asha.org

Colleen M. O'Rourke
Georgia State University
328 Woodward Ave S.E.
Atlanta, GA 30312-2133
corourke@gsu.edu

George S. Osborne
PCO School of Audiology
Office of the Dean
8360 Old York Road
Elkins Park, PA 19027-1598
gosborne@pco.edu

Davida L. Parson
Ohio Univ
Schl of Hear & Speech Sci
Grover Ctr W181
Athens, OH 45701
parsonsdl@ohiou.edu
Gilmour M. Peters  
Wayne State University  
12960 Glenmore Ct  
Plymouth, MI 48170-5300  
gpeters@sun.science.wayne.edu

John Preece  
University of Rhode Island  
Speech & Hearing Center  
Independence Sq, Suite I  
Kingston, RI 02881  
preece@uri.edu

George O. Purvis  
VA Medical Center  
800 Zorn Ave  
Louisville, KY 40206-1499  
george.purvis@med.va.gov

Karen J. Richardson  
12 Golfview Circle N.E.  
Winter Haven, FL 33881  
krichard@chuma1.cas.usf.edu

Dennis Ries  
Ohio University  
Grover Center W221  
Athens, OH 45701  
ries@ohio.edu

Brenda M. Ryals  
James Madison University  
Dept Comm Science & Disorders  
MSC 4304  
Harrisonburg, VA 22807-0002  
ryalsbm@jmu.edu

Emily R. Salazar  
3072 Big Leaf Dr  
Little Elm, TX 75068  
esalazar@unt.edu

Sharon A. Sandridge  
The Cleveland Clinic  
Desk A71 9500 Euclid Ave  
Cleveland, OH 44195  
sandridges@ccf.org

Janet R. Schoepflin  
13 Westfield Dr  
Centerport, NY 11721  
jrschoep@aol.com

Joanne Schupbach  
Rush University Medical Center  
Dept Comm Disorders & Sciences  
1653 West Congress Parkway  
Chicago, IL 60612  
Joanne_E_Schupbach@rush.edu

Dee Shafer  
ASHA  
10801 Rockville Pike  
Rockville, MD 20852  
dshafer@asha.org

Neil T. Shepard  
University of Nebraska - Lincoln  
6351 Campbell Drive  
Lincoln, NE 68510  
vpaudqual@aol.com

Laura Smith-Olinde  
Univ of AR for Medical Science  
AUSP-Spch Bldg 120  
2801 S. University  
Little Rock, AR 72204  
SmithOlindeLauraK@uams.edu

Bette Stevens  
9814 Homeland Avenue  
Baltimore, MD 21234  
bstevens@towson.edu

Patti Tice  
ASHA  
10801 Rockville Pike  
Rockville, MD 20852  
ptice@asha.org

Jennifer Tufts  
Univ of CT Communication Sci Dpt  
850 Bolton Rd, Unit 1085  
Storrs, CT 06269  
jennifer.tufts@uconn.edu

Lana B. Ward  
981 Atwood Ct. 1  
Granbury, TX 76049  
lward@esc11.net

Ian Windmill  
Univ. of Louisville  
Myers Hall  
Louisville, KY 40292  
imwind01@Louisville.edu