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Mickey Hart: What a Long, Strange, Trip It’s Been  Learn more about Hart’s experiences with recording sounds from outer space, being a sound junkie, and managing his hearing loss.
By David Fabry and Robert Sweetow

Teaching Educational Audiology: From Classroom to Practice  Learn techniques for teaching educational audiology to AuD students and training them to work with children in the educational setting or for educational purposes.
By Hala Elisy

The Circle of Life: A Possible Rehabilitative Journey Leading to Improved Patient Outcomes  The current president and two past presidents of the Academy of Rehabilitative Audiology call on audiologists to incorporate meaningful hearing rehabilitation into the hearing aid dispensing process.
By John Greer Clark, Patricia Kricos, and Robert Sweetow

Alarming Facts Audiologists Must Know  Learn more about the increased risk individuals with hearing loss have in failing to hear traditional alarms and smoke detectors.
By A. U. Bankaitis

Billing for Services Provided by Support Personnel: Audiologists—No, Physicians—Rarely  Audiologists cannot bill Medicare for services provided by an audiology assistant. However, physicians can bill Medicare for a limited number of services provided by a technician.
By Teri A. Hamill and Debra Abel
The American Academy of Audiology publishes Audiology Today (AT) as a means of communicating information among its members about all aspects of audiology and related topics.

Send article ideas, submissions, questions, and concerns to amiedema@audiology.org.

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Last July, the Academy hosted a dinner meeting with leaders from the AAAF, ABA, and ACAE. We discussed the current challenges facing audiology and often felt stymied by our limitations, for instance, minimal support to our PAC limits our impact on Capitol Hill. The Foundation has an impressive list of philanthropic goals but does not get much support from audiologists to meet those goals. At one point, someone mentioned, “We are such a small profession....”

And that’s when it hit everyone at once. Yes, we are small, but are we resigned to this limiting self-concept? Is it time to challenge the assumption that we will always be small?

Upon reflection in subsequent months, we developed this premise:

Audiology can no longer afford to remain a “small” profession.

“Small” does not only refer to the number of practitioners (12,000 FTE, per the Department of Labor). Our numbers are an issue, of course: because we are small, we struggle with public awareness. However, “small” also refers to average salary levels (far less than comparable health-care professions). Because our salaries are smaller, we have less discretionary income available for PAC donations (result: less ability to be heard in government) and Foundation donations (less ability to “do good”). Moreover, do we stay small in productivity because we are unwilling to “own” and employ a paraprofessional arm (i.e., assistants) or “own” automated testing procedures?

To explore these issues, the boards of the Academy, AAAF, ABA, and ACAE have been holding “think tanks” across the country. These have been gatherings of 8–12 audiologists, often at state academy meetings, who tackle these questions for about one hour. We consider not only the premise but also this resolution:

Resolved: By the year 2020, we will grow, by:

1. Increasing the number of practicing audiologists by 20 percent.
   a. Supporting the development of larger classes in AuD programs (to increase our intellectual base as well as meet a growing patient base).
   b. Obtaining gender balance and cultural diversity in our profession.

2. Increasing annual average salary by 50 percent (including cost of living allowance [COLA] over 10 years)
   a. Using audiology assistants to increase productivity.
   b. Using automated audiometry to enhance, not replace, audiologists.
   c. Training students on how to use assistants—change their self-perception from technician to doctoral-level practitioner.

3. Increasing the number of patients served from 20 percent (of overall population with HI) to 50 percent.
   a. Using measurably effective marketing campaigns to lead patients to audiology care.
   b. Applying marketing research to effect change, shape decisions.

4. Standardizing use of satisfaction and other outcomes to measure/market our effectiveness.

During these discussions, all possibilities are on the table. Notes are taken to summarize each discussion and submitted to Academy President-Elect Pat Kricos. She is heading a task force charged to analyze these data for themes and strategies for change and growth. This analysis will inform a membership survey later this year, to make
Still undecided?
Check out the session lineup at www.audiologynow.org.
Register today! Rates are going up on January 15.
See you in San Diego.
Sure everyone has a chance to weigh in. This means you! Survey results will then help update our strategic plan.

I have had the opportunity to hold a few think tanks already and have been profoundly moved by audiologists’ passion and commitment for a better tomorrow. During these discussions, I see Gawande’s (2007) words in action: “Better is possible. It does not take genius. It takes diligence. It takes moral clarity. It takes ingenuity. And above all, it takes a willingness to try” (p. 264).

Better is possible. It takes moral clarity. It takes ingenuity. And above all, it takes a willingness to try.

Kris English, PhD
President
American Academy of Audiology

Reference


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Thank you! Thanks to you, our members,

we received valuable insights into
our communication tools from the
Publications and Media Survey, fielded
in fall 2009. Our goal of continual
improvement in the Academy’s
products and services can only be
achieved with your feedback. Here’s
a glimpse at the results:

**Journal of the American
Academy of Audiology (JAAA)**
- Over 50 percent consider JAAA a
  “must-read” in research and information, when compared to other journals
- Based on usefulness and relevancy, JAAA was ranked the highest when compared with other journals
- Over 60 percent save every issue of JAAA
- Over 60 percent would be interested in an interactive online subscription to JAAA

**Audiology Today (AT)**
- Almost 60 percent consider AT a
  “must-read” for professional information and industry news, when compared to other magazines
- Based on usefulness and relevancy, AT was ranked the highest when compared with other magazines
- 75 percent read AT to keep up with the profession, and 63 percent read AT to keep up with Academy initiatives and advocacy efforts
- Feature articles are the most read pages of AT (84 percent)
- You asked for more articles about coding/reimbursement, hearing aid dispensing, and vestibular issues

**www.audiology.org**
- 85 percent access the Web site
  1-10 times a month (another 8 percent up to 30 times a month)
- Over 60 percent visit the latest news and information regularly
- Other areas visited most regularly are Publications & Resources, Professional Development, and Education & Research
- You asked for more resources in practice management, coding and billing, and state information

Relevant content is the reason
our periodicals are being read.
Special kudos to our content editors
James Jerger, PhD (JAAA), David
Fabry, PhD (AT), and Douglas Beck,
AuD (Web site) for their roles in
finding top-notch features, research,
and information. In fact, their roles
depend on receiving articles and ideas from you.
While the Academy uses these
vehicles to communicate with our members, the vehicles are, in turn, enhanced when members are engaged and submit articles, research, etc.

Keep the content coming!

Cheryl Kreider Carey, CAE
Executive Director
American Academy of Audiology

P.S. Check out our newest Web site:
www.howsyourhearing.org. Launched
several months ago, this consumer
Web site features the “Find an
Audiologist” directory, Turn It to the
Left®, as well as resources on a grow-
ing list of topics. We invite all Academy
members to link to this consumer site
from your Web site.  

(Administrative) Survey Says
All the News That’s Fit to E-mail

E-newsletters are a cost-effective way to reach a large number of patients very quickly and at minimal expense, delivering insightful information in a professional, well-branded format. Quality e-newsletters typically meet with a more favorable reception than direct mail, and many publishers predict that they will become more important in the future. If you haven’t considered expanding your practice’s footprint with an e-newsletter, here are some reasons why you should, along with advice on how to optimize their effectiveness.

A Marketer’s Best Friend

Think of an e-newsletter as a lead generator. Your practice can send an e-newsletter to introduce itself to thousands of prospective patients, demonstrating its expertise, and establishing itself as a leader. The e-newsletter can link back to your practice’s Web site and encourage recipients to stop by for a visit. Likewise, the e-newsletter can market to your existing patient base by offering solutions that they may not have otherwise considered. Because it is customizable, the e-newsletter can highlight a particular service that might be of interest to a specific segment of the recipient list.

E-newsletters also have the distinct advantage of being measurable, enabling practices to accurately monitor how many leads originated from the e-newsletter. Because e-newsletters are transmitted electronically, senders can track which articles are the most popular and flag the readers who express the most interest in a service by clicking deep into a Web site.

The RSS Feedbag

With the emergence of RSS feeds as a new medium for distributing information, some business leaders are hedging their bets on e-mail newsletters. Experts note that these technologies are distinct, however, and one should not be viewed as a replacement for the other.

Among the many differences between the two, RSS feeds provide updated information in real time, while the delivery of e-newsletters is subject to the publication cycle of the sender. A knee-jerk reaction to this distinction could be to view the RSS feed as the logical replacement for the e-newsletter, given the immediacy of its delivery. Even in a world of instant information, however, e-newsletters are not likely to be rendered obsolete. Because RSS feeds deliver raw information as soon as it appears on the Web, they are not subject to the same vetting process as the e-newsletter. While e-mail may not be as effective at providing instant updates, the content delivered in an e-newsletter is typically more thorough, more balanced, and better researched. It is fair to say that what RSS feeds offer in immediacy, e-mail makes up for in scope, perspective, and analysis.

A crucial difference between RSS feeds and e-mail marketing is the relationship that they create between the sender and the recipient. RSS feeds are more likely to be viewed as a vehicle for real-time data, giving them a distinctly utilitarian character. E-newsletters, by contrast, are more of a relationship-building tool that has yet to be surpassed in its effectiveness at reaching a well-defined, target audience. Recipients are more likely to identify an e-newsletter with its sender, particularly when the publisher customizes it with branded content or a personal word from a practice leader.

Help Is There for the Asking

For many smaller practices, the task of writing, editing, producing, and distributing an e-newsletter can be too much. There are many companies that specialize in that very service, however, and freelancers can usually be found in abundance in virtually every market. Remember that the e-newsletter, like any other marketing material, should be the best possible representation of your practice, and often the writing and formatting can be most capably handled by a company that specializes in e-news services.

There are many factors to consider when putting together an e-newsletter, but none should be more important than credibility. Be sure that your service provides a legitimate value to your recipients, otherwise your practice will become identified with irritating, unwanted e-mail. Many companies find that outsourcing the production of their e-newsletter is the most cost-effective way to deliver a high-value, professional service. Whether you opt for a news-heavy format or prefer a more folksy product that might feature interviews or profiles, make sure that your service connects in a personal way with your readers, and that it stands as the best possible representation of your practice to both new and existing patients.

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CALENDAR

JANUARY

13
eAudiology Web Seminar—Recent Advances in Understanding Conductive Hearing Loss (.2 CEUs)
1:00–3:00 pm ET

14
AudiologyNOW! 2010 Early Registration and Hotel Rate Deadline
www.audiologynow.org

15
State Science Fair Application Deadline
www.audiologyfoundation.org/sciencefair2010.htm

22
AAAF Member Assistance Program Deadline
www.audiologyfoundation.org

FEBRUARY

3 and 10
eAudiology Two-Part Web Seminar—Ethics and Research (Tier 1) (.4 CEUs)
1:00–3:00 pm ET

6–10
Association for Research in Otolaryngology, 33rd Annual Mid-Winter Meeting
Anaheim, CA
www.aro.org/mwm/mwm.html

25–27
National Hearing Conservation Association Conference
Orlando, FL
www.hearingconservation.org
Intro to Aural Rehabilitation: Interview with Raymond H. Hull, PhD
Douglas L. Beck, AuD, Web content editor, speaks with Dr. Hull about his new book, Introduction to Aural Rehabilitation. The book is divided into four sections: The Nature of Aural Rehabilitation (AR), Introduction to AR—Pediatrics, Introduction to AR—Adults, and then finally, Considerations for Older Adults with Impaired Hearing. Get the insights about the book from the author and review the table of contents.

Search key words: “Raymond Hull”

NEW FOR 2010!
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Beginning January 1, 2010, audiologists will be able to report on up to four measures under the Physician Quality Reporting Initiative program.

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Search key words: “CE Registry”

The Academy’s Consumer Web Site
Have you linked your Web site to www.howsyourhearing.org? This new site features an overview of topics including hearing loss prevention, hearing aids, cochlear implants, and more. It also features easy access to the “Find an Audiologist” directory and the latest consumer-friendly articles from Audiology Today.

Go directly to www.howsyourhearing.org
The legendary member of the Grateful Dead speaks with AT about his experiences with recording sounds from outer space, being a sound junkie, and managing his hearing loss.
Mickey Hart is a percussionist, author, and musicologist. He is best known as one of the two drummers for the Grateful Dead, performing with the band for nearly three decades and remaining with them until their official dissolution in 1995. They toured almost continuously during that time, playing well over 2,000 shows, and fans, known as “Dead Heads,” followed them from venue to venue.

Subsequent to Jerry Garcia’s death, Hart continues to collaborate with the remaining members of the band, under the modified name The Dead. In addition, he has embarked on a number of solo projects, many of which relate to his lifelong passion of all things rhythmic. At the leading edge of the baby boomer generation, Hart represents the new face of today’s senior that, instead of retiring, seems destined to change tempo and pick up a new rhythm. Audiology Today was able to slow him down for a few minutes recently, to speak with him and his audiologist, Academy member Dr. Robert Sweetow.

AT: It is a pleasure to speak with you today. Mickey, as a musicologist, you have studied the cultural impact of musical forms, styles, genres, and traditions. What similarities and differences have you found?

MH: Describing music is like trying to draw a picture of spirit; everyone has a different image in mind, and no two renderings are the same. In addition, everyone loves at least some kind of music, and the real question is why do we have this relationship with the world of vibrations around and inside us. Listening, composing, and playing music transforms spirit into something concrete and connects us to the world around us; the magic of music is what is interesting to me. Music has sprung from social movements,
political causes, and religious fervor. Music can unite, heal, and uplift, and it can arise from unlikely sources.

Speaking of which, Dr. Sweetow tells me that you have been working with NASA to record sounds from outer space.

MH: Yes. Part of my latest project is to gather cosmic wave forms and translate those light waves into sound. If we transpose those sounds into the audio bandwidth and play them through loudspeakers, we can actually listen to them and hear them as music. This is the music of the spheres.

Okay, I have heard of global music, but this is an entirely different dimension. I saw the recent History Channel program on pulsars and quasars, and I really enjoyed it. You were interviewed about your recordings of sounds from outer space. Exactly what does this mean, and how did you turn it into music?

MH: I wanted to interact with the fabric of the universe—the things that blew us into creation—the seed sounds. We have turned these electromagnetic waves into sonic waves—pulsars are especially interesting.

The way I understand it, pulsars are rotating neutron stars that are created when a massive star ends its life in a supernova explosion. What remains after the supernova is a pulsar that generates large amounts of electromagnetic radiation with periodic rhythms that relate to its rotational speed. Different pulsars have different rates of spin, which in turn have different rhythms. You have collaborated with NASA and even SETI to get recordings—right?

MH: Initially, I contacted SETI (Search for Extraterrestrial Intelligence) and they led me to the sounds that I was looking for; sounds from the universe turned it into music. Once these things started coming my way, I saw that the universe was “singing.” It is fun, but is also a deep spiritual experience for me.

That indeed sounds fascinating—it is mind-bending to think about being able to able to hear “The Big Bang” or other events that actually occurred a long time ago. Please explain what you are doing to make sense of the sounds you record.

MH: They are recorded and then transposed into the audible spectrum. Some are increased in frequency, others are decreased. The slow ones sound like a bump, and the higher ones like a tone or a rainforest or a choir of angels.

Are the sounds recorded in analog or digital format?

MH: Digital. It is true that when you use digital sampling, you miss the gaps in between the sampling rate. Digital permits the signal to be analyzed and transposed more effectively.

The signal does store better in digital format, too, over the long haul. It is interesting that you are using frequency-shifting techniques, as they have recently made their way into hearing aid technology. In hearing aids, the most commonly used techniques are linear or nonlinear frequency lowering, but in this case, you are
Mickey Hart: What a Long, Strange Trip It’s Been

sometimes shifting higher in frequency. While we are primarily interested in shifting the information into regions of residual audibility, you are searching for the rhythms in the universe.

MH: Correct. During The Dead’s spring tour, we took our audience on a nightly audio tour of some part of our universe during our “space concerto” section. This got the interest of the folks at the History Channel, who contacted us about the pulsars and quasars program.

I was always interested in the sounds of the city, trolley cars—so the rhythmic tattoo of New York City really captivated me at a young age. I am a “sound junkie” and have always loved the loud in things.

As a percussionist, it seems like you are the ideal person to make sense out of these rhythms and compose music from them. When did you first realize that you heard the world differently?

MH: I was always interested in the sounds of the city, trolley cars—so the rhythmic tattoo of New York City really captivated me at a young age. I am a “sound junkie” and have always loved the loud in things. I also love the sound of rain, because it is so rhythmic. I would stand out in the rain and let it absorb into the subconscious. It was when I really discovered “trance” rhythms. I did not really know what to call it when I was young, but when I would drum alone, it provided a sort of meditation where I was definitely moving in and out of trance.

Funny that you should say that, because I was going to ask you about the Grateful Dead and an experience I had when I heard you play with Dylan and Tom Petty back in 1986 at the Metrodome (in Minneapolis). One thing that always impressed me was the loyal following of your fans for live performances, even more so than for your recorded music. As one of the Grateful Dead’s “rhythm devils” (Bill Kreutzmann is the other) the improvised segments between the “songs” provided a continuous thread that held everything together. It was more like a theatrical performance than a concert where “discrete” songs were played. In a sense, it felt like trance music. As a fellow drummer, I am biased, but I think that it was the critical factor that contributed to the “live” experience, aside from all the pharmaceuticals that were used in the audience in those days (laughing).

MH: Good observation.

Another thing that I observed at the concert was that aside from the terrible acoustics in the Dome, you didn’t feel the need to amplify your music to unbearable levels to be enjoyed—was this a conscious effort?

MH: Of course, when we were touring with Dylan, you wouldn’t want to blast the sound—he is a poet and you want to hear the words. That’s not to say at other times we didn’t play loud, because we did, but you are right—it is different with Dylan.

It was a fantastic concert. You mention that you are a “sound junkie;” many audiology
Mickey Hart: What a Long, Strange Trip It’s Been

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Photo © Jay Blakesberg.
clinicians have experienced this phenomenon with their patients who have more significant hearing losses and like their hearing aids “loud.” Have you acquired hearing loss over the years because of the exposure to loud sounds?

MH: I have worn hearing aids for around 10 years.

RS: Mickey first wore CICs in 2000, and we have him fit now with micro BTEs, and, yes, he likes them loud!

How do they work for you?

MH: They work great, with the possible exception of on the cell phone.

Wow, that is quite an endorsement for the improvements in hearing aids, especially coming from you. I have seen your audiogram, and it is surprising that you don’t have more high-frequency hearing loss, especially as a drummer and fellow sound junkie. One of my mentors (W. Dixon Ward) studied the issue of individual susceptibility to hearing loss, and you would definitely seem to be on the low side of that curve! You guys were also pretty “early adopters” on the use of hearing protection while you performed, which probably helped, too.

MH: One thing that I have always tried to do is to “train” my ears to anticipate changes in dynamics. I rarely turn things up dramatically without “desensitizing” my ears first, which I think has protected them over the years. In addition, we have always used high-quality Meyer Sound loudspeakers, which have no distortion, and I think that makes a difference, too. I may be addicted to loud sounds, but at least I am getting the best sonic punch from my delivery system. Meyer Sound is the gold standard.

RS: You have touched on an area of auditory research that suggests some people can “toughen” their ears to be resistant to noise-induced hearing loss.

Yes, I recall seeing some work with chinchillas, guinea pigs, and rats (Pukkila et al, 1997), but most of the research I have seen suggests that the damage risk criteria related to the intensity,
duration, and temporal nature of noise exposure is the strongest predictor. That said, individual differences certainly exist.

The issue of music-induced hearing loss remains rather controversial, as some studies suggest that risk of hearing loss increases with music exposure, while others find little correlation between the two (Morata, 2007). It appears to be an area for further study, but we know that an awful lot of musicians suffer to some degree from hearing loss or tinnitus. Do you have any ringing in your ears?

MH: No.

RS: Well, I do.

(laughing) There you have it; I know that Dr. Sweetow doesn’t have a musical bone in his body, so this is conclusive proof that a lack of musical talent causes tinnitus. Speaking of musical talent, how did you become a drummer?

From my understanding, both your parents were drummers.

MH: Yes, it is in my DNA. My father was a champion rudimental drummer.

Yes, and I read that your parents won the Mixed Doubles competition at the 1939 World’s Fair in New York. Did you ever perform professionally with either of your parents?

MH: No, but I did compete against my father one time.

Who won?

MH: I did, but my father was getting older by then.

You have also been involved with the Institute for Music and Neurologic Function.

MH: I have been interested in the connection between healing and the neural basis of rhythm. Music has a way of connecting people with the infinite, with the vibratory universe. If connections in the brain are broken they can be reconnected by using rhythmic stimulus. This led me to rhythm therapy and to music therapy, which has powerful healing qualities.
Again, interesting parallels to our field. Dr. Sweetow, among others, has been involved with sound therapy methods for tinnitus treatment that involve using specific musical patterns designed to desensitize the brain to tinnitus.

MH: Think about it—although your heart is beating continuously, you are not always aware of it. It is something that I refer to from time to time, just to feel my personal rhythm.

Great analogy. I am aware of my pulse right now. Thankfully, it is still going. One of your many projects was your Planet Drum project, which received the first-ever Grammy Award for World Music.

MH: New rhythms are being born in places we know of and also in unknown places. That is the way music works—it either grows and becomes relevant, serving the community, or it dies. Almost all music on this planet is a mutation of something else that came before. Before rock-and-roll, there was Latin music, which is full of syncopation. Even before that were the trance groups of Western Africa and all the way back to the Neolithic, 6,000 BC.

And drums were always at the center of it all, perhaps because percussionists have been such a creative lot. What’s the most unusual item that you have used as an instrument?

MH: I have used combs, wooden shoes, and wine glasses. How about a human skull? I hadn’t thought about that in awhile, but one time in the recording studio I was looking for a specific sound, and it just occurred to me to use someone’s head as a drum.

Well, I have to say that this has been a most enjoyable and interesting interview, and I appreciate your both taking time to speak with us today. Mickey, I hope that we didn’t bore you too much. Dr. Sweetow, I hope that you figure out what to do with that cell phone. What is next for you, Mickey?

MH: I am after the sounds of the universe; that is where I am headed right now. There is a lot to do.

Best of luck chasing it down—where can we find some examples of your music from space?

MH: There are some samples on www.mickeyhart.net and www.dead.net.

I’ll be sure to check it out.

Dave Fabry, PhD, is the content editor for Audiology Today. He is also the managing director of AudioSync Hearing Technologies. Robert Sweetow, PhD, is the director of the audiology at the University of California, San Francisco.

References


Also of Interest

Visit www.audiology.org and check out some of AT’s other music-related articles:

- Interview with guitar legend Les Paul (Sept/Oct 2008) and search key words “Les Paul”
- Interview with Blues Brother and musician Jim Belushi (Jan/Feb 2009) and search key words “Jim Belushi”
- “If I Can Hear Their Headphones, It’s Too Loud, Right?” (May/June 2009) and search key words “Hearing Loss and Headphones”
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Teaching Educational Audiology: From Classroom to Practice

By Hala Elisy

This article presents techniques for teaching educational audiology to AuD students, with the goals of engaging the students, sparking their interest in educational audiology, and training them to work with children in the educational setting or for educational purposes.
ducation and training of future audiologists include a rigorous curriculum that incorporates didactic courses and clinical practicum training. Training of future educational audiologists extends beyond the classic clinical audiologist training. It requires added expertise in understanding the effect of hearing impairment and auditory processing deficit on the educational success of children, and how that might impact their language and psychosocial development. This article presents some techniques for teaching educational audiology to AuD students; these techniques will integrate practice with classroom teaching. The goals are to engage the students, spark their interest in the field of educational audiology, and train them to work with children in the educational setting or for educational purposes.

Historical Background
Audiologic services for the deaf and hard-of-hearing children in the schools were first discussed in the 1964 National Conference on Audiology and Education of the Deaf. The subsequent publication of the report by the Joint Committee on Audiology and Education of the Deaf (Ventry, 1965) addressed the need for audiologic services in the educational setting. In 1966, Samuel Fletcher and Frederick Berg developed the first training curriculum for audiology practice in the schools at Utah State University, through a grant from the U.S. Office of Education (Berg, 1970). It was not until 1975 that educational audiology was further recognized and defined in the Education for All Handicapped Children Act (PL 94-142) and all its reauthorizations, currently referred to as the Individuals with Disabilities Education Improvement Act (IDEA 2004). This federal law laid the foundation for the field of educational audiology and defined the role of the audiologist working in the school setting.

How Is Educational Audiology Different?
The roles and responsibilities of an educational audiologist extend beyond that of a mainstream audiologist working in a clinical setting. The American Speech-Language-Hearing Association (ASHA) published the Guidelines for Audiology Services in Schools (ASHA, 1993), and later the Guidelines for Audiology Services Provision in and for Schools, (ASHA, 2002), describing the comprehensive audiology services in the schools to include prevention, identification, assessment, (re)habilitation, and providing follow-up and monitoring, equipment and materials, administrative support, evaluation, and research. The Educational Audiology Association (EAA) further defined the roles and responsibilities of educational audiologists working with children in the school or for educational purposes to add skills that are unique to educational audiology, such as analyzing the instructional listening environment, recommending modifications for the school environment or programs, and assisting school personnel and parents to help make instruction accessible to students with hearing loss for their academic and social success (EAA, 2002, 2009). These skills require added knowledge in areas such as classroom acoustics, speech perception, visual aspects of speech comprehension, phonology, communication strategies, amplification options and assistive listening technology, child development, social and emotional issues associated with hearing loss, educational planning and support, and the impact of hearing loss on the child’s learning and educational success. Thus, it is crucial for future audiologists to have adequate training and didactic curriculum aimed at developing not only their skills as clinicians but their competencies to work in different professional settings, including the schools, as well as with the school-age population.

The AuD Degree
Beckrow and Nerbonne (2002) conducted a survey of academic programs accredited by ASHA to determine whether the students receive adequate preparation in knowledge and skills, targeting the minimum competencies for educational audiology, as established by the Educational Audiology Association (EAA, 2009). Results from 48 programs indicated that the students receive adequate academic and clinical preparation for competencies associated with assessment and other mainstream areas of clinical audiology, but significantly less preparation in most competencies related to audiology practice in the educational setting. The study concluded that audiology programs do not appear to be adequately preparing graduates for employment in the schools. Furthermore, the study strongly suggested the need for substantial changes in the audiology programs across the nation to better prepare future audiologists academically and clinically in the field of educational audiology (Beckrow and Nerbonne, 2002).

With the movement to the doctor of audiology degree as the entry level to audiology practice, university programs across the United States developed their curricula to meet ASHA (ASHA, 1993, 2006) and the American Academy of Audiology (1996) accreditation and certification standards for this new doctoral degree.

Most programs developed a didactic course dedicated
to teaching educational audiology, with the goal of graduating clinicians who are better prepared to work as educational audiologists and better prepared to serve the needs of school-age children who are deaf or hard of hearing, or who exhibit auditory processing deficits.

Preparing Future Educational Audiologists
After working as an educational audiologist in the Indiana schools, I currently teach the educational audiology course to second-year AuD students at Purdue University. In this article, I am sharing my experience in teaching educational audiology and how my prior exposure to the field of educational audiology helped me bring both the practical and the classroom learning together to better prepare the students to practice in the area of educational audiology. The main objective of the course is for the students to develop a comprehensive knowledge of the field of educational audiology, with focus on hearing loss and auditory processing disorders, and their impact on the child language, academic, and psychosocial development. The course covers the responsibilities of an educational audiologist as explained in the ASHA guidelines (1993, 2002), and the EAA guidelines (2002, 2009). The EAA recommends the following professional practices for audiologists working in the school setting (EAA, 2002):

- Identification and Assessment—Includes screening/management of hearing screening programs, audiologic evaluations, and assessment of central auditory processing
- Amplification—Includes hearing aid evaluation and analysis, cochlear implants, and classroom amplification
- Hearing Loss Management—Includes medical/educational referral, counseling and guidance of students/parents/teachers, in-service training/consultation and interpretation for school personnel, re)habilitation and instructional services, and individualized education plan (IEP)/individualized family service plan (IFSP) planning and writing
• Conservation/Consultation—Contains hearing conservation, sound-field amplification, and classroom acoustics

• Program Management—Provides training and supervision of support personnel, calibration, record maintenance, and program administration

• Professional Leadership/Development—Includes community leadership/collaboration, evaluation, and research

**Empowering an Active Learning Approach**

I developed the course material to include these recommended practices. I also used teaching strategies that create an active learning environment to engage the students and to spark their interest in educational audiology practice (Meyers and Jones, 1993). For example, federal legislation dealing with special needs children in the educational setting, along with the Special Education Rules of the Indiana State Board of Education (2008) are explained in detail. The students are then assigned case scenarios of legislative issues, such as disagreement between the school and the parent on the special services provided to the child, or about his educational placement. The students provide their input based on their understanding of the laws in a classroom discussion format. This helps the students make sense of applying the federal and state regulations, and know the interpretation of the regulations when faced with a similar situation in the future.

Some of the active learning methods I used involve cooperative and collaborative learning. In cooperative learning, the students work in small groups to complete a specific task assigned by the instructor (Cottell and Millis, 1998). For instance, while discussing the topic of classroom acoustics, students are assigned to work in groups of two or three to perform a functional listening evaluation in a regular classroom (Johnson and Von Almen, 1993). The students examine the effect of noise, distance, and the presence (or lack of) visual input on their understanding of speech, which provides them with a realistic perspective on the listening difficulties the hard-of-hearing children face every day in their classrooms.

Collaborative learning is similar to cooperative learning in that the students are still working in-group, but it is different in that it highlights individual group members’ abilities and contributions (McKeachie, 1994). For example, the students are assigned to work as a group to prepare and present a proposal on how to improve the acoustic of a particular classroom. Each student would contribute his or her ideas and thoughts to develop the proposal, making this method of learning more student centered and enhancing individual students’ innovative and creative thinking.

Another example of active engagement employs problem-based instructional learning, where students collaboratively solve problems and reflect on their experiences. One example of this activity is to assign students with different case studies of children with hearing loss wearing specific makes and models of hearing aids, or cochlear implants. The students’ task is to select a suitable FM system (personal or classroom) that fits each child’s needs, and to write recommendations and justifications to the school to provide the selected FM system.

The students also develop checklists to be used by school-teachers and speech-language pathologists. These checklists have some tips to help the educators with the operation, maintenance, and troubleshooting of the children’s hearing aids or cochlear implants, and FM systems in the classroom.

Identification of children who are deaf or hard of hearing is one of the key topics discussed in detail. The students learn about hearing screening procedures in light of the ASHA guidelines and the Indiana State Board of Education requirements. Class activities involve reviewing the current protocol used in local schools and developing their own hearing screening protocol, including all the forms and handouts needed. An example of a hearing screening protocol developed by the students is included in APPENDIX 1. The students have an opportunity to practice hearing screening in the community by screening preschool children in the local preschools, and youth camp students during the summer.

Hearing conservation is another area that sparks the creativity of the students. One of the class assignments involves developing separate hearing conservation

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**Also of Interest**

“Autonomy of Audiologists in Educational Settings,” by Jane Seaton, Peggy Von Almen, and James Blair: www.audiology.org/resources/journal/documents/jaaa05/jaaa_05_06_08.pdf
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**INDICATIONS FOR USE:** The Zen program is intended to provide a relaxing sound background for adults (21 and older) who desire to listen to such a background in quiet. It may be used as a sound therapy tool in a tinnitus treatment program that is prescribed by a licensed hearing healthcare professional (audiologists, hearing aid specialists, otolaryngologists) who is trained in tinnitus management.
programs for elementary, middle, and high school students. Each program comprises a fun fact sheet about hearing and hearing loss, and some hands-on activities that stress the danger of exposure to loud music, which may lead to noise-induced hearing loss. The students use available resources such as Turn It to the Left® (www.turnittotheleft.com), Listen To Your Buds™ (www.listentoyourbuds.org), Dangerous Decibels® (www.dangerousdecibels.org), and the Better Hearing Institute (www.betterhearing.org) Web sites and others to develop such activities.

In addition to working in groups, individual students are also assigned relevant articles and topics to present in class. Their peers critique the presentations, and the feedback is provided to each student to help improve his or her skills. Some of these topics include the educational options for placement of the deaf and hard-of-hearing children in the classroom, and communication philosophies for teaching them. Students are encouraged to include case studies as part of their presentations. The students engage the class in discussing the best placement option and communication strategy of each case, and how it complies with the IDEA (U.S. Congress, 2004) mandate of providing free and appropriate public education (FAPE) in the least restrictive environment (LRE).

Integrating Practice with Classroom Teaching

As part of their class activities the students have an opportunity to visit a local school that contains a special education classroom for the deaf and hard-of-hearing children. The students observed firsthand the communication strategies that the teacher uses with the deaf and hard-of-hearing children, and wrote their reflections on the visit. Feedback from the students encouraged me to consider repeating the visit next year. As one student put it, “I think the field trip we took to the school was very interesting and helpful to actually be able to see how this type of classroom communication worked.”

Moreover, the importance of pairing what the students learn in class with clinical practice cannot be stressed enough. Having the audiology clinic housed within our department makes it possible for the students to apply what they learned. The clinic also has a contract with the local schools to provide audiologic services to children referred by the school. The contracted services include assessment and management of hearing impairment, and auditory processing disorders evaluation. This gives the students an opportunity to integrate and apply what they learned in class about the audiologic assessment and amplification options for school-age children. The students also get to work with children using FM systems with their hearing aids during the aural rehabilitation sessions in clinic.

About one-third of the class syllabus is dedicated to educating the students about auditory processing disorders (APD). The goal is for the students to develop basic knowledge of APDs, with emphasis on evaluation, identification, remediation, and counseling. One of the students’ activities is to practice different APD tests on each other in the clinic. With each test introduced in class, the students are assigned to work in pairs to administer the test, score it, and interpret it. The students appreciated having that opportunity to practice, as indicated in this student’s quote: “I think the hands-on with the APD tests was very useful because it was good to listen to the tests to supplement what we had learned about them in the class.” At the conclusion of the APD section, students are expected to be able to identify children at risk of having APD, based on the case history and the initial screening. They also should have the ability to administer the APD test battery, interpret the results, and write a clinical report with appropriate recommendations. After completing the course, students are assigned to test children and adolescents for auditory processing disorders, as part of their clinical practicum caseload.

Conclusion

Educational audiology is a unique field of practice that provides audiologic services to children in the schools. It is vital that future audiologists in general, and future educational audiologists in particular, receive adequate instruction and training in educational audiology to better serve the needs of this school-age population. One way to help reach this goal is by utilizing active learning instructional methods that integrate classroom teaching with clinical applications. Including case studies, and discussing how to deal with each case in a professional approach, helps the students to manage real-life situations they might face working in the schools or with school-age children. Finally, learning is a continuous process and does not stop after graduation. With the rapid developments in the field of audiology, and the advancements in hearing aids, cochlear implants, and assistive listening technologies, educational audiologists need to keep up with everyday challenges and be able to deliver a full spectrum of audiologic services to children in the educational setting.

Hala Elisy, PhD, is a clinical assistant professor in the Department of Speech, Language, and Hearing Sciences at Purdue University in West Lafayette, Indiana.
References


Indiana State Board of Education. (2008) Special Education. Title 511 Article 7.
### Appendix 1

**HEARING SCREENING PROTOCOL**

<table>
<thead>
<tr>
<th>Who are we screening?</th>
<th>Referral Criteria</th>
</tr>
</thead>
<tbody>
<tr>
<td>Preschool</td>
<td>Pass Pass No follow-up necessary; follow ASHA screening guidelines</td>
</tr>
<tr>
<td>Kindergarten</td>
<td>Pass CNT Monitor</td>
</tr>
<tr>
<td>First Grade</td>
<td>Pass Fail If ECV large—medical referral</td>
</tr>
<tr>
<td>Second Grade</td>
<td>Pass Fail (fail retest = medical referral)</td>
</tr>
<tr>
<td>Third Grade</td>
<td>Fail Pass Retest (fail retest = diagnostic evaluation)</td>
</tr>
<tr>
<td>Seventh Grade</td>
<td>Fail Fail Medical referral</td>
</tr>
<tr>
<td>Eleventh Grade</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>What tests are we providing?</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pure tones</td>
</tr>
<tr>
<td>Tympanograms</td>
</tr>
<tr>
<td>Everyone in preschool, kindergarten, and first, second, and third grade.</td>
</tr>
<tr>
<td>Children in grades above third will be screened only when necessary.</td>
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</tbody>
</table>

<table>
<thead>
<tr>
<th>Pass/fail criteria</th>
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<tbody>
<tr>
<td>Pass</td>
</tr>
<tr>
<td>Pure tones Thresholds better than 20 dB HL at 500, 1000, 2000, 4000, and 6000 Hz in both ears.</td>
</tr>
<tr>
<td>Tympanometry: Normal Type A: ECV: 0.4–1.0 ml Compliance: 0.2–0.9 ml Gradient: 60–150</td>
</tr>
<tr>
<td>Fail</td>
</tr>
<tr>
<td>Pure tones Thresholds greater than 20 dB HL at 500, 1000, 2000, 4000, and 6000 Hz in either ear (even if at only one frequency and one ear).</td>
</tr>
<tr>
<td>Tympanograms Anything out of the “normal” criterion Type C—rescreen Type B—rescreen medical referral</td>
</tr>
</tbody>
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<tr>
<th>How to handle results</th>
</tr>
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<tbody>
<tr>
<td>Outcomes will be set depending on pass/fail criteria and referral criteria.</td>
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</table>

<table>
<thead>
<tr>
<th>Rescreening criteria</th>
</tr>
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<tbody>
<tr>
<td>Those you are monitoring</td>
</tr>
<tr>
<td>Failed tympanogram</td>
</tr>
<tr>
<td>Failed pure tones</td>
</tr>
<tr>
<td>New student</td>
</tr>
<tr>
<td>Could not test previously</td>
</tr>
<tr>
<td>Children absent on day of screening</td>
</tr>
<tr>
<td>Parent/teacher concerns</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Who keeps the records?</th>
</tr>
</thead>
<tbody>
<tr>
<td>Speech-language pathologist and school nurse keep screening test results along with other medical records in the student’s medical files.</td>
</tr>
</tbody>
</table>
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A POSSIBLE REHABILITATIVE JOURNEY LEADING TO IMPROVED PATIENT OUTCOMES

BY JOHN GREER CLARK, PATRICIA KRICOS, AND ROBERT SWEETOW
The consistently low level of hearing aid market penetration (approximately 20 percent) and the higher—but still less than desired—degree of hearing aid satisfaction both suggest that the hearing care delivery system is not fully meeting consumer needs. We will highlight in this article one possible contribution to this current state, and call upon audiologists to incorporate meaningful hearing rehabilitation into the hearing aid dispensing process.

Our profession is largely an outgrowth of the aural rehabilitation programs initially established to meet the needs of World War II veterans. As the profession evolved in subsequent years, audiologists were gradually lured from their rehabilitative roots by ever-increasing sophistication in diagnostic testing. Early behavioral audiometric tests could only differentiate conductive from sensory/neural hearing loss, and provide fallible suggestions of a differential diagnosis suggestive of a locus of pathology as either sensory or neural. However, diagnostic measures continued to progress, eventually building up an armament of objective assessments that can now help differentiate pathologies from the middle ear to the auditory cortex.

The profession’s drift from its rehabilitative roots was further propelled by the prohibition to engage in direct, for profit, hearing aid dispensing until the mid-1970s. The inability of audiologists to actively tend to a major component of their patients’ rehabilitative needs created further impetus for a growing niche in diagnostics. However, it is a tenuous position to narrowly define the profession of audiology by the assessments its practitioners provide. It is for this reason, and the desire to provide more comprehensive care, that audiologists were eager to embrace direct hearing aid dispensing when the dispensing prohibition was lifted.

Unfortunately, by the time audiologists began to take a more active role in the comprehensive hearing care of their patients, many audiologists were no longer...
providing rehabilitative services. This is evidenced by findings that indicate the percentage of audiologists who offer rehabilitation extending beyond the hearing aid orientation has dropped since the 1980s (Schow et al, 1993; Millington, 2001). With the frequent—and misguided—perception among professionals and patients that today’s technologies should adequately address communication problems, this trend does not appear to be reversing. Yet, while the use of hearing aids has demonstrated reductions in family discord, anger, frustration, social isolation, and other deleterious effects of diminished hearing (Kochkin and Rogin, 2000), these same shortcomings remain to varying degrees following even the most advanced hearing aid fittings. This fact is borne out by survey results of adult hearing aid users that show less than 30 percent of respondents indicate satisfaction with their hearing aids in noisy situations (Kochkin, 2005). Since adults frequently work and socialize in noisy situations, this level of satisfaction is disconcerting. Despite the advances in technology, there is still a high return rate and little improvement in market penetration. Simply fitting the person with hearing aids clearly does not ensure that his or her communication difficulties are resolved.

Early approaches to aural rehabilitation with adults included development of speechreading skills and auditory training to enhance speech signal detection and differentiation. While these can still be useful tools, current literature suggests these have largely given way to an approach more focused on communication enhancement through direct or computer-guided training toward enhanced listening skills, improved communication strategies for patients and life partners, recognition of barriers to successful communication, and improved management of the communication setting (Clark and English, 2004; Kricos and McCarthy, 2007). Indeed, addressing avenues of communication enhancement and training toward greater speech understanding, particularly in noise, has been shown to help close the gap between the benefits hearing aids provide and the greater successes our patients seek (Sweetow and Sabes, 2006). As we move further into the 21st century, we are seeing an increasing number of evidence-based research outcomes on the benefits of hearing rehabilitation (Palmer et al, 1998; Miller et al, 2004; Sweetow and Palmer, 2005; Stecker et al, 2006). In addition, we are seeing more interdisciplinary research from audiologists, auditory physiologists, cognitive psychologists, and neuroscientists highlighting the neuro-plasticity of the auditory pathways of children and adults (Tremblay and Kraus, 2002; Russo et al, 2004). Yet even with these findings, and the reported generalization of auditory and communication enhancement training from the rehabilitation environment to real-life situations (Sweetow and Sabes, 2006), the majority of audiologists fail to incorporate a meaningful rehabilitation component into their hearing aid fitting protocol.

In a recent article, Palmer (2009) reflected on the ethical conflict within which audiologists place themselves when they fail to practice the hearing aid dispensing aspects of audiology in accordance with established best practice patterns put forth by both the Academy and American Speech-Language-Hearing Association (ASHA). While she was addressing the abhorrent paucity of the routine use of probe-microphone measures, the same admonishment applies for continued hearing aid dispensing practices that do not provide a concomitant rehabilitation component. As Palmer points out, the profession’s code of ethics is clear that failure to follow best practice guidelines is a violation of professional ethics, and the continuation of inferior practice patterns that do not ensure best outcomes negatively impacts both our patients and our profession. As Palmer states, patients trust us by virtue of our professional standing, degrees
conferred, and professional memberships. They expect that we are using the latest technologies and established best practice protocols to ensure satisfactory outcomes. There is no personal or professional defense for failing to meet patient expectations when dispensing hearing aids.

It is frequently noted that all of life traverses a circle, and so too, we hope that audiology completes its life circle by returning to a full embrace of its rehabilitative roots. Failure to close the audiologic rehabilitation circle is a disservice to our profession and the patients we serve. Completing the circle is our ethical responsibility and a move toward evidence-based care. Looking at current hearing loss treatment practices, one could conclude that audiologists are satisfied with the provision of less than comprehensive services. Change is never easy and rarely sought. In spite of this, we hope that all of us can continue to challenge ourselves and each other to ensure continued improvement in the services we provide.

John Greer Clark, PhD, is assistant professor of communication sciences and disorders at the University of Cincinnati, in Cincinnati, OH; Patricia Kricos, PhD, is professor in the Department of Communication Processes and Disorders, Audiology, at the University of Florida in Gainesville, FL; Robert Sweetow, PhD, is the director of the audiology department at the University of California, San Francisco Medical Center in San Francisco, CA.

References


Also of Interest
Learn more about the increased risk individuals with hearing loss have in failing to hear traditional alarms and smoke detectors.

Are you aware that the standard signal emitted by most residential smoke detectors is between 3000 and 4000 Hz (Lee, 2005)? Taking into consideration hearing loss demographics and traditional audiometric configurations related to presbycusis and noise-induced hearing loss, the ability for individuals with hearing loss to effectively hear a standard smoke detector should become an immediate concern. In reality, fire safety is most likely not a primary focus of attention when discussing amplification options with patients, since the assumption may be that a properly fit hearing instrument will enable individuals to hear the smoke detector. Unfortunately, this rationale is only applicable in those instances when patients are awake or wearing their hearing instruments. Since hearing instruments are not worn during sleep, this creates a safety concern for our
patients with hearing loss. So, as audiologists, what do we need to know, and what do we need to do?

**First: Know the Facts**

Currently, residential smoke alarms sold in the United States are required to emit a temporal-three (T-3) pattern signal of at least 75 dBA (National Fire Protection Association, 2002). As defined by the International Standards Organization (ISO), the T-3 pattern signal refers to a sequence of three 0.5 sec on-off pulses followed by a 1.5 sec pause in between each set of three pulses (Bruck and Thomas, 2009a). The T-3 pattern is not associated with or limited to a specific frequency; any frequency may be incorporated in the T-3 pattern. Unfortunately, for reasons that remain unclear, most smoke detectors in the United States are designed to emit a signal of 3100 Hz or higher (Lee, 2005).

Recent research investigating the efficacy of smoke detectors in alerting at-risk patient populations, including individuals with hearing loss, unequivocally demonstrates that the standard signal emitted by current smoke detectors is not the most effective signal in waking those with a mild to moderately-severe high-frequency hearing loss (Bruck and Thomas, 2007). With sleep stages controlled for, sleeping adults with an average binaural threshold of 42.2 and 49.8 dB HL at 2000 and 4000 Hz, respectively, woke up to a 75 dBA T-3 pattern alarm of 3100 Hz only 56 percent of the time. In contrast, 92 percent of the very same adults woke up to a 75 dBA T-3 pattern alarm utilizing a 520 Hz square wave signal. When both signals were increased to an intensity level of 95 dBA, 84 percent woke up to the 3100 Hz signal compared to 100 percent with the 520 Hz square wave signal.
Furthermore, the difference in behavioral response times to each signal is important to note. On average, it took subjects 3 min (180.7 sec) to wake up in response to a 3100 Hz alarm versus a 1 min response time (63.4 sec) to the 520 Hz square wave signal.

Second: Understand Limitations of Current Technology

A number of smoke detectors are commercially available. Specific smoke detectors marketed to the population with hearing impairment usually emphasize the ability for the product to emit a signal of loud intensity (i.e., 90 dBA) with the additional provision of some type of visual and/or vibrotactile signal that occurs in tandem with the auditory signal. In terms of signal intensity, it remains logical to conclude that the louder the signal, the more effective the product will be in alerting hard-of-hearing patients. Unfortunately, a louder-is-better approach is not entirely infallible. First, the frequency response of the signal plays a critical role in signal detection. A 90 dBA 3100 Hz signal marketed as “very loud” may not necessarily be perceived as “very loud” by patients with 85–90 dB thresholds at the same frequency. Second, a louder-is-better rationale is limited to those instances when individuals with hearing impairment are awake or wearing their instruments. U.S. fire fatality data reveals that nearly 40 percent of individuals who die in a residential fire in the presence of an intact, working smoke detector are asleep when they perish (Ahrens, 2008). It has been estimated that a signal may need to be as much as 40 dB louder for detection during sleep as compared to detecting the same signal while awake (Bruck, 2001).

While choosing options for patients based on intensity level alone may make initial sense, this one-dimensional approach may create a false sense of security.

A number of commercially available smoke detectors are additionally equipped with nonauditory signals aimed to awaken sleeping individuals via either visual (i.e., strobe light) or vibrotactile (i.e., bed shaker) stimulation. While earlier literature tends to suggest that individuals with hearing loss, particularly deaf individuals, are more sensitive to strobe lights during sleep as compared to normal hearing individuals (Nober et al, 1990; Underwriters Laboratories, 1991), the conclusions of these studies were based on methodologies that did not control for subjects’ sleep stage, a variable known to influence arousal. Recent studies have implemented more stringent methodologies that not only controlled sleep stages to ensure subjects were in the deepest stage of sleep during test procedures but controlled for strobe light intensities, ensuring that the stimuli used met or exceeded current National Fire Protection Association (NFPA) 72 standards. These studies have revealed very different results than the previous findings. Bruck and Thomas (2007) found that more than 70 percent of subjects with a mild to moderately-severe hearing loss slept through a strobe light alarm. These findings were consistent with the Du Bois et al (2005) study that showed 66 percent of subjects with hearing loss slept through the same type of alarm.

With regard to bed shakers, as with earlier strobe light efficacy research, sleep stages of subjects were not controlled for, resulting in findings associated with questionable validity. Recent studies controlling for sleep stages found that approximately 20 percent of subjects with hearing impairment slept through a bed shaker (Bruck and Thomas, 2009b). In other words, bed shakers, when used alone, are more effective than strobe lights, waking 80 percent of subjects with a mild to moderately-severe hearing loss compared to the 30 percent achieved with visual stimulation. While bed shakers performed better than strobe lights alone, within the context of waking sleeping individuals with hearing loss, an 80 percent success rate is not considered a sufficient performance level.

FIGURE 1: The Loudenlow Model 520 smoke detector. Reprinted with permission from the Darrow Company, Kansas City, KS.
Emerging data over the past decade clearly suggests that the best alerting device for waking individuals with mild to moderately-severe hearing loss is an alarm capable of emitting a low-frequency auditory signal. Different low-frequency signals have been assessed in an effort to determine if one particular signal is more effective than another. Currently, a 520 Hz square wave signal has been found to be the most effective signal in waking subjects with hearing impairment (Bruck and Thomas, 2007; Bruck and Thomas, 2009b; Bruck et al, 2009). This signal has a fundamental frequency of 520 Hz with subsequent peaks at the odd (third, fifth, seventh, etc.) harmonics (Bruck and Thomas, 2009a). According to a waking effectiveness study sponsored by the Fire Protection Research Foundation (FPRF), the 520 Hz square wave successfully awoke 92 percent of subjects at benchmark or minimum standard intensity levels of 75 dBA and 100 percent of the same subjects at 95 dBA (Bruck and Thomas, 2007).

In light of this research, there may be a momentum shift for changes to be made in the current National Fire Alarm Codes for purposes of improving the efficacy of smoke detectors in waking at-risk populations including those with hearing loss (Albert, 2009). Until or unless changes are made and implemented, however, audiologists currently have access to a patient population inherently at risk for failing to wake up to traditional smoke detector technology as a consequence of hearing loss. Audiologists have the opportunity to not only generate awareness about the implication of their hearing loss as it relates to being alerted to their standard smoke detector but to offer viable solutions to their patients.

**Third: Identify Viable Options**

Research currently supports a low-frequency 520 Hz square wave alarm as the most effective alerting signal for waking individuals with mild to moderately-severe hearing loss. There are several smoke detectors available that emit this specific type of low-frequency signal. The Loudenlow Model 520 (Darrow Company, Kansas City, KS) is a battery-operated smoke detector that emits a 520 Hz square wave T-3 alarm at 85 dBA. Shown in FIGURE 1, the product is mounted on a wall and operates in the same manner as traditional smoke detectors. While most smoke detectors maintain a round shape and are relatively small in diameter, the Loudenlow is square and substantially larger (6.5” × 8” × 2”). The larger dimensions are necessary to accommodate necessary components for generating a lower-frequency signal. Perhaps this may be part of the
reason why the fire alarm industry tends to incorporate higher-frequency alarms since this type of signal may be achieved with smaller components, providing the ability to market a product that is smaller in size and, therefore, associated with more market appeal.

The same company offers a second model (Model 1000) that works in the same manner as the above sister model with the exception that it emits a 250 Hz T-3 signal at the same intensity level rather than a 520 Hz square wave signal. While both models emit a low-frequency signal, researchers have specifically identified the 520 Hz square wave signal (Bruck and Thomas, 2007; Bruck and Thomas, 2009b; Bruck et al, 2009) as the best signal for individuals with high-frequency hearing loss. The frequency (520 Hz) and signal characteristics (i.e., square wave) are important factors to take into consideration when identifying viable options for individuals with hearing loss. In other words, research would tend to support that the Model 520 would be a more appropriate choice compared to the Model 1000.

Anecdotal evidence seems to suggest that perhaps combining the 520 Hz square wave signal with a tactile device (i.e., bed shaker) may provide additional effectiveness (Bruck and Thomas, 2007) although more research is needed to substantiate the merits of these observed trends. A relatively new product that is commercially available incorporates both the 520 Hz square wave signal and a vibrotactile alarm in the form of a bed shaker. The Lifetone HL Bedside Fire Alarm and Clock (Lifetone Technology, Chicago, IL) is an innovative product designed to work with current smoke detectors. As shown in FIGURE 2, the Lifetone HL is essentially a bedside fire alarm encased in a fully functional alarm clock. The product is equipped with a patented sensor that continually monitors sound emissions from existing residential smoke detectors. This patented sensor is specifically tuned to identify T-3 stimulus emissions. In the event a smoke detector within the home is triggered to emit an auditory alarm (i.e., required T-3 signal), the Lifetone HL detects this signal emission and, in turn, generates a 520 Hz square wave signal at 90 dBA. In other words, there is no need to invest in a different or new set of smoke detectors; the Lifetone HL is designed to interface with preexisting smoke detectors already installed in the home. In addition, since this product also functions as an alarm clock and is intended to reside on a nightstand, the proximity of the emitted alarm to the sleeping individual it is designed to arouse is much closer than traditional placement of standard smoke detectors (i.e., outside of the bedroom). The product also comes equipped with an optional bed shaker that will similarly respond to an activated smoke detector by vibrating.

**Final Thoughts**

The information provided in this article is intended to make audiologists aware of the increased risk individuals with mild to moderately-severe hearing loss have in terms of failing to hear the traditionally high-frequency alarms generated by most commercially available smoke detectors. The implications of the research reviewed may not be applicable to individuals with profound hearing loss or audiometric configurations involving lower audiometric frequencies. Professional discretion must be used in determining the applicability of this information to specific individuals.

In general, regardless of whether or not a patient is a current hearing instrument wearer, audiologists should make patients with hearing loss aware of the following:

- Most residential smoke detectors emit a signal of a high enough frequency (≥3,100 Hz) that places individuals with hearing loss at risk for not waking to an alarm while sleeping.
- Even if the auditory signal of a current smoke detector is perceived as sufficiently loud when awake, it does not mean that the signal will be effective in waking an individual during sleep.
A recent study found that nearly half of those with a mild to moderately-severe hearing loss did not wake up to a standard auditory alarm.

The signal that was found most effective in waking sleeping individuals with hearing loss was a low-frequency 520 Hz square wave signal.

Several products are currently available that emit a 520 Hz square wave. One product operates in the same manner as a traditional smoke detector except that it is designed to emit a 520 Hz square wave (Loudenlow Model 520). The other product will generate a 520 Hz square wave signal at the bedside any time a smoke detector previously installed in the home is activated.

A. U. Bankaitis, PhD, is vice president of Oaktree Products, Inc., St. Louis, MO.

References


Audiologists cannot bill Medicare for services provided by an audiology assistant. However, physicians can bill Medicare for a limited number of services provided by a technician.

In 2008, Medicare clarified certain audiology reimbursement issues in a document called Transmittal 84, whose subject was “Update to Audiology Policies.” It clarifies how “intermediaries” are to process Medicare claims, as well as describes who may and may not bill for audiology services. One of the important clarifications is that only audiologists may bill for most audiology procedures. Audiologists must now bill Medicare with their own National Provider Identifier (NPI), which is linked to their Medicare Provider Transaction Access Number (PTAN), formerly known as the Provider Identification Number (PIN).

Medicare made very narrow exceptions to the audiology billing rules, much narrower than most audiologists realize, and these rules govern the billing of services rendered by “technicians” (as Medicare terms them) or audiology assistants. Audiologists must provide the services when billing using their PTANs. The services cannot be provided by an assistant acting under the supervising audiologist.

A common misconception is that physicians can be legally reimbursed for services that a technician provides. While state licensure laws permit physicians to delegate the provision of services to technicians, that is not the same as Medicare paying for those services. Medicare has stated that there are two diagnostic services that “technicians” can perform under the supervision of a physician (or qualified nonphysician practitioner, such as a physician assistant or registered nurse practitioner)—(1) tympanometry and (2) vestibular function testing.

Section 5717.14 of Transmittal 84 indicates:

With the exception of screening tests and tympanograms, audiological function tests with medical diagnostic evaluation require the skills of an audiologist. For vestibular function tests, it may be appropriate for a physician or qualified nonphysician practitioner with the skills of an audiologist to directly supervise and provide the skills of an audiologist while the services are being furnished by a technician.

If that statement leaves you scratching your head trying to interpret it, perhaps this later section will help. The Medicare Benefit Policy Manual, chapter 15, section 80.3 (“Audiological Diagnostic Testing”), states:

Some diagnostic audiological tests require... the skills of an audiologist to perform and interpret not only the data output, but also the manner of the patient’s response to the test. These tests must be personally furnished by an audiologist or a physician.

The lists of characteristics about tests that must be furnished by the audiologist include the following: “Modification of the stimulus based on responses obtained during the test” and “Choices of subsequent presentations of stimuli, or tests in a battery of tests.” These characteristics define most testing conducted in audiological practice, including the basic audiological
Billing for Services Provided by Support Personnel

The technical components of certain audiological tests i.e., tympanometry (92567) and vestibular function tests (e.g., 92541) that do not require the skills of an audiologist may be performed by a qualified technician or by an audiologist, physician or nonphysician provider practicing within their scope of practice. If performed by a technician, the service must be provided under the direct supervision of a physician...or qualified nonphysician practitioner who is responsible for all clinical judgment and for the appropriate provision of the service.

Again, Medicare considers professionals such as nurse practitioners and physician assistants to be qualified nonphysician practitioners. Audiologists are not considered qualified nonphysician providers; ergo, the audiologist cannot bill for these services if the technician provides them.

As noted earlier, the Medicare Benefit Policy Manual permits “technician-” performed billing for “i.e.,...tympanometry...and vestibular function tests,” which indicates that only those two items can be billed by qualified nonaudiologists. However, some have interpreted the “i.e.” (that is) as an “e.g.” (for example) and have opined that any audiology code with a technical component could similarly be billed for if performed by a nonaudiologist. Codes 92587 (evoked otoacoustic emissions; limited [single stimulus level, either transient or distortion products]) and 92588 (comprehensive or diagnostic evaluation [comparison of transient and/or distortion product otoacoustic emissions at multiple levels and frequencies]) and 92585 (auditory-evoked potentials for evoked response audiometry and/or testing of the central nervous system, comprehensive) are the remaining codes with a technical component. Importantly, note that CPT code 92557, comprehensive audiometry threshold evaluation and speech recognition (92553 and 92556 combined), does not have a technical component and thus should only be filed for payment to Medicare when the test is performed by an audiologist.

There are direct supervision requirements if a “physician or qualified nonphysician provider with the skills of an audiologist” authorizes support personnel to conduct this testing. Direct supervision “means the physician must be present in the office suite and immediately available to furnish assistance and direction throughout the performance of the procedure. It does not mean that the physician must be present in the room when the procedure is performed.” (CMS Pub. 100-02, Transmittal 17, June 2004).

Audiologists should consult with their Medicare intermediaries as necessary for interpretation. Our review indicates that an audiologist who uses an audiology assistant in his or her own practice will not be able to bill Medicare for the diagnostic services that an assistant may provide. Physicians appear to have somewhat greater latitude, but less so than commonly believed. Our understanding is that, if billing Medicare, physicians can only use technicians to conduct tympanometry and vestibular function testing, and there are direct supervision requirements in these cases. 😊

Teri A Hamill, PhD, is a professor with Nova Southeastern University in Ft. Lauderdale, Florida. Debra Abel, AuD, is the director of reimbursement with the American Academy of Audiology.

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From AuD Student to Professional Audiologist

Jessica Barrett Scott

It seems like yesterday I was a student at University of Maryland-College Park, studying for comps, writing my dissertation, and wondering when it would end. I remember times of little sleep and wondering why I took on four more years of higher education. I can’t say life is going to be easier or less hectic, but the satisfaction of starting and finishing something as rewarding as a doctoral degree in audiology cannot be substituted.

Through the years, I’ve had incredible opportunities to work with well-known researchers and clinicians. It is because of these mentors that I am motivated to further the profession of audiology. As a student, I really looked for different avenues to advance my knowledge of audiology and the profession. I always felt that there was a different yet intimate connection between what we do in the clinic or the research lab and what we do to further the profession and become leaders and mentors for others.

As a fourth-year student, I was working at Walter Reed Army Medical Center (WRAMC) in Washington, DC. Every day I went to work feeling like I made a difference. At the time, my significant other (whom I am now thrilled to call my husband) was serving a 15-month deployment in Iraq. Among working, going to school, and completing my dissertation, I found the tenacity to push through each day. No matter how busy I was, there was no replacing the support I received from family, friends, coworkers, and mentors. That very same year, I was invited to be on the Program Committee for AudiologyNOW!® 2009. With the help of fantastic team members from across the country, we were able to form the foundation of a valuable student learning experience.

After graduation, I accepted a position as a staff audiologist at WRAMC. At the end of every day, I go home with the ultimate satisfaction that my professional skills have enabled me to give something back to the families of men and women who dedicated their lives to serving and protecting us.

I am currently serving the Student Academy of Audiology (SAA) as the Recent Graduate Representative on the SAA Advisory Committee. My job is to be that bridge that supports the transition from audiology student to audiology professional.

Track-and-field star Jackie Joyner-Kersee said, “Don’t follow in any footsteps, make your own prints. Because, you are the future of tomorrow.” I would probably amend this by recommending you take a couple hops in many other people’s footprints, not just because hopping is fun, but because the tracks laid down by your personal and professional predecessors and mentors will help you find your way as a person, and as an audiologist.

From: Columbia, MD
Education: AuD and BA in Hearing and Speech Sciences from University of Maryland-College Park.
Audiology Interests: I love almost every aspect of audiology, but my specific interests are in pediatrics, electrophysiology, and vestibular testing.
About Me: I am an outgoing person who loves spending time with my family and friends. I have incredible respect for those who serve honorably for this country. I am somewhat of a workaholic, but maximal productivity is what I strive for. I know that it is good to relax, but that’s why I have a wonderful husband who grounds me.

Quote to Live by: “If opportunity doesn’t knock, build a door.” —Milton Berle
What Can MRI Tell Us About Speech Recognition and Aging?

By Kelly C. Harris and Judy R. Dubno

Editor’s Note:

Difficulty understanding words in challenging listening environments is a common concern for older people. New research suggests the problem may involve not only hearing loss but also age-related changes in the brain. Previous “Moment of Science” articles have reported on the impact of hearing loss and/or age on the central auditory nervous system, and described several key advances in basic research, as well as the use of auditory-evoked potentials to study these changes. Here, we describe how magnetic resonance imaging (MRI) is being used to identify age-related differences in the structure and function of neural systems and to explain some of the differences in speech understanding among older adults.

The brain is a complex system possessing more than a trillion cells. As we age, the brain undergoes numerous changes, from the loss of cells, to changes in cell connections and communication. How do these changes impact human behaviors like communication? In addition to well-known declines in the peripheral auditory system that reduce audibility, age-related changes in central auditory and cognitive systems (including attention and working memory) are thought to have additive negative effects on speech understanding. Structural neuroimaging provides a valuable tool to better understand how age-related declines in anatomical brain structures in these systems may underlie the unique auditory processing problems of older adults.

In a recent study (Harris et al, 2009), MRI was used to scan the brains of younger and older adults while they performed a word recognition task. The goal was to determine the extent to which declining structural integrity of brain regions associated with auditory and cognitive processing accounted for decreases in word recognition. Similar to previous studies of aging, gray matter volume in the auditory cortex and frontal lobe regions associated with cognitive processing was significantly less in older adults than in younger adults. Despite widespread anatomical changes in the brain, the association between word recognition and gray matter volume was restricted to a small region of auditory cortex—the left medial Heschl’s gyrus/superior temporal gyrus (HG). Specifically, the older adults with lower gray matter volume in the auditory cortex had the most difficulty understanding words. Moreover, the association between the volume of gray matter in this brain region and the ability to understand words was also present in younger adults. The results suggest an intriguing possibility that younger adults with low gray matter volume in the auditory cortex may be at greater risk for problems...
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understanding speech later in life. Given associations previously observed between auditory cortex structure and language function, a likely explanation for the current findings is that structural declines and/or atypical development of auditory cortex can lead to a degraded speech signal, thereby limiting the ability to understand speech in challenging listening environments. These changes may also place greater demands on cognitive resources to compensate for declines in auditory processing. Indeed, several authors have reported associations between cognitive processing and speech recognition in effortful listening conditions (see review in Pichora-Fuller and Singh, 2006).

Importantly, age-related differences in brain structure were present even after controlling for hearing loss, suggesting independent effects of age on the peripheral and central auditory systems. These results may have important implications for developing effective interventions for age-related declines in speech understanding. While hearing aids may improve audibility for older adults, structural declines in auditory cortex may still lead to degraded auditory representations and poorer word recognition, which may reduce benefit from amplification.

Kelly C. Harris, PhD, is an assistant professor at MUSC and Judy R. Dubno, PhD, is a professor in the Department of Otolaryngology-Head and Neck Surgery at the MUSC.

References


Have You Added these CPT Codes to Your Patient Encounter Form and Office Systems?
CPT Code 92540—Basic vestibular evaluation, includes spontaneous nystagmus test with eccentric gaze fixation nystagmus, with recording, positional nystagmus test, minimum of four positions, with recording, optokinetic nystagmus test, bidirectional foveal and peripheral stimulation, with recording, and oscillating tracking test, with recording. (Do not report 92540 in conjunction with 92541, 92542, 92544, or 92545.)
CPT Code 92550—Tympanometry and reflex threshold measurements (Do not report 92550 in conjunction with 92567, 92568.)
CPT Code 92570—Acoustic immittance testing, includes tympanometry (impedance testing), acoustic reflex threshold testing, and acoustic reflex decay testing (Do not report 92570 in conjunction with 92567, 92588.)
CPT Code 92569—This code has been deleted.

PQRI Updates: Audiologists Can Report on Up to Four Measures in 2010
For the first time, audiologists will be able to report on up to four measures under the Physician Quality Reporting Initiative (PQRI) program for Medicare. The Audiology Quality Consortium, a collaboration of 10 audiology organizations in a yearlong process, worked to develop these measures. The measures include:

- Congenital or traumatic deformity of the ear,
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The Academy joins the other organizations in developing educational materials to guide members through the claims reporting process.

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To ensure that your PTAN is valid, you will need to contact your Medicare contractor. If you need assistance locating contact information, e-mail the Academy at dabel@audiology.org.

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**CODING AND REIMBURSEMENT**

**A Look Ahead: HIPAA 5010 and ICD-10-CM**

You will want to contact your claims clearinghouse to see how they are updating their HIPAA 5010 and ICD-10-CM capabilities as those deadlines are nearing. The compliance date for the HIPAA 5010 transition is January 1, 2012, and the ICD-10-CM transition date is October 1, 2013. For additional information on the future ICD-10-CM codes, visit www.audiology.org, and search key word “coding.”

**FTC Red Flag Rules—Compliance Date Pushed Back**

The date for mandatory compliance with the FTC Red Flag Rules has been pushed back again: From November 1, 2009, to June 1, 2010. Congress is considering measures that may limit the impact of these regulations on practices with less than 20 full-time employees.

**New Medicare Modifier**

Effective April 1, 2010, Medicare is offering a new modifier and a revision to a current one to delineate between voluntary and required “Advanced Beneficiary Notice” (ABN) usage.

The GA modifier is to be used when a required ABN was issued for a service. This will now be known as the “Waiver of Liability Statement Issued as Required by Payer Policy.”

The new GX, “Notice of Liability Issued, Voluntary Under Payer Policy,” is to be reported when a voluntary ABN was issued for a service. This new modifier must be submitted with only noncovered charges and is applicable to those services that are statutorily excluded such as with annual audiological assessments.

**New Medicare Enrollment Forms**

For those who are enrolling in Medicare, a new version of the enrollment forms are now required for use, effective November 30, 2009, or you could risk denial by your Medicare contractor. The most recent version of the 855I can be found at www.cms.hhs.gov/cmsforms/downloads/CMS855I.pdf.

If you are an employee paid by your employer or a contractor who files claims on your behalf, you are required to file the 855R, reassignment of benefits, located at www.cms.hhs.gov/cmsforms/downloads/cms855R.pdf.

Enrollment may be done online via the Provider Enrollment, Chain, and Ownership System (PECOS) at https://pecos.cms.hhs.gov/pecos/login.do.

Your application will not be considered complete until you mail your signed certificate statement and other required documents to your Medicare contractor. If filing online, you may expect your Provider Transaction Account Number (PTAN) within 30 days. If filing a hard copy, it will take approximately 30–60 days to receive your PTAN.

**Also of Interest**

Find a selection of resources and tools developed by the Coding and Reimbursement and BEST Committees at www.audiology.org, search key words “practice resources.”
When asked, “Why did you go into this field?” the majority of audiologists will say that they wanted to help others. We now find ourselves in a time where there are so many people within our community who are in need. Remember that you can reach out to your community and grow your business at the same time by using some nontraditional approaches to marketing. Community outreach is a way to connect with the people in your community while promoting a positive image of you and your practice.

Below is an account of how Soriya Estes, AuD, of Texas has touched the lives of her community by sharing the gift of hearing.

Every year, we, as hearing health-care professionals, find patients that need to be helped and rehabilitated but cannot financially afford hearing aids. Although our practices have many payment options and price levels of hearing aids, there are still individuals that do not have the means to improve their quality of life. Every year, we do a Gift of Hearing Project in each of our practices. We solicit members of the community and our existing patients to turn in nominations for a person with hearing impairment to receive a brand new set of hearing aids. This is not something that we coordinate with a particular hearing aid manufacturer, but rather do on our own to give back to our local communities. The response is amazing and gives us as practitioners such a great feeling to give back so these individuals can hear life again.

As you look at your marketing plan for the next year, consider reaching out to your community. Research the opportunities available in your community. Select a few events that you feel will parallel your mission statement and exemplify your business. Here are some suggestions:

1. Collect nonperishable food items for a local food pantry. Food pantries are in desperate need of donations. Consider collecting nonperishable food items for the local food pantry. This could be done as a one-time food drive for a particular event or on a monthly basis.

2. Participate in a local run/walk. Sign up for the event and recruit patients to join your team. Use this as an opportunity to get to know your patients outside of the clinic. Have t-shirts printed for your team, or consider sponsoring a portion of the event for additional exposure.

3. Adopt a highway. Donate your time to keep your community clean. Often your business will be recognized for these efforts with signage.

4. Offer free educational seminars. These can be offered to the community through senior centers, clubs, organizations, or local community colleges. Educate consumers on topics such as hearing loss, prevention of hearing loss, care and cleaning, communication strategies, and so on.

5. Set up a scholarship fund. Designate that the scholarship is for a local high school student pursuing a health-care related field. Assemble a board of your patients and staff to review the applications and select a recipient.

Don’t forget to include these events in your newsletter to inform patients, recruit help, and spread your message to a wider audience. Press releases can also be provided to your local newspaper and TV stations to create an opportunity for additional exposure. Remember that even a small gesture can have a large impact on your community.

Tracey Irene, AuD, is a senior audiologist with Professional Hearing Services, a Division of Moreland Ear, Nose, and Throat Group, LTD, in Milwaukee, WI. She is also a member of the Academy’s BEST Committee.
When looking for my fourth-year externship site, I extensively reviewed several placements. I had read so many stats from the American Academy of Audiology Web site that I began to memorize the number of patients seen at each clinic. Despite my own personal research, the best advice I received was from past students of those various clinics. Autumn Riley, another Missouri State University student and good friend of mine, was the first to tell me about Arkansas Otolaryngology Center (AOC). She did her fourth year there in 2007–2008. She described her diverse experiences there and really made me think about what I should be looking for in a fourth-year site.

As a doctoring profession, we, as students, hold the responsibility of obtaining a diverse wealth of knowledge. Sure, we all have our preferences. Our profession’s diversity ranges from manufacturing to private practice, vestibular to cochlear implants, and even geriatrics to pediatrics. The university does a good job of giving us an introductory sample of each of these topics; however, it is the fourth-year placement that is going to get us practicing these topics on a daily basis. The fourth-year placement is going to force us to start behaving, thinking, and, ultimately, becoming audiologists. In addition, the fourth-year placement is ultimately going to bridge the gap from theory to practice.

Recently, I have had several students contact me to ask about my fourth-year experience. Students are inquisitive about what to expect and, perhaps more so, what is expected of them. I had the same questions during my third year. I think it would be beneficial for students to share information with each other about valuable fourth-year placements. I think it would also be helpful to use the dialogue to help off-sites and universities assure that students are adequately prepared prior to entering into their fourth year. After all, we are all working to push the profession forward.

I will start the dialogue by strongly recommending AOC for anyone applying for a fourth-year position. AOC is the largest otolaryngology group in the state of Arkansas, with 16 physicians on staff. AOC also houses physical therapy and speech-language pathology. Physical therapy particularly provides unique insight into the rehabilitation of our balance patients. Finally, AOC provides the opportunity to work with and observe two otoneurologists. They have a large patient draw across not only Arkansas but also bordering states. They are also very educationally oriented and frequently will take the time to answer questions from fourth-year students.

The Little Rock office houses five audiologists. AOC is designed so that there are four major stations for their audiologists: amplification, diagnostics, vestibular, and cochlear implants. Fourth-year students rotate through each of the stations as they follow their weekly rotation. On average, I spend two days a week doing diagnostic testing. Diagnostics can vary from audios, ABRs, OAEs, and the occasional CAPD test battery.

Also of Interest
Visit www.studentacademyofaudiology.org. Learn more about the Externship Registry and clinical audiology externships, providing a broad range of clinical experiences with a variety of patient populations.

Join the Student Academy of Audiology listserv and continue the dialogue.
On average, I see approximately 20–25 patients per week for a diagnostic workup.

Another two days a week, I am in amplification. I work with Dr. Jim Rippy, who is a phenomenal teacher on amplification and counseling. The clinic dispenses approximately 120 units a month. I have my own schedule with my own patients. This forces me to think about the long-term well-being of each of my patients. Dr. Rippy gives each fourth-year student the freedom to fit whatever he or she feels is best. He provides guidance and advice, but from a distance. Of course, real-ear measures are performed on each patient. Finally, one day a week I am in the vestibular clinic. I am scheduled for four VNGs a week. In addition, computerized dynamic posturography is performed when appropriate.

Again, the purpose of this article is to encourage students to provide dialogue concerning their externships. My fourth-year externship site provides a wonderful educational experience, and a unique experience considering we work with otoneurology, otolaryngology, physical therapy, and speech-language pathology on a daily basis.

This constant diversity helps create a well-rounded audiologist, which is essential considering the profession’s extensive scope of practice.

As students, we must push ourselves during the fourth year so we are as well prepared as we can be.

As the future of the profession, we cannot afford to have areas of weakness. We cannot use terms like “advancing the profession” as a cliche, but rather, we must have a direct plan of where our profession is heading. It starts at the student level. It starts with us. That is why we must put careful thought and care into our educational decisions, particularly the decision for our fourth-year externship sites.

Brian Vesely is a fourth-year AuD student at Missouri State University, completing his fourth-year externship at the Arkansas Otolaryngology Center. Vesely was the former president of NAFDA and the first president of the Student Academy of Audiology (SAA).
ABA Cochlear Implant Specialty Certification Update

The American Board of Audiology (ABA) is in the process of updating the Cochlear Implant (CI) Specialty Certification examination and plans to offer it in San Diego on Sunday morning, April 18, immediately following AudiologyNOW!® 2010.

The ABA Board of Governors recently appointed Marilyn Neault, PhD, director of the Habilitative Audiology Program at Children’s Hospital Boston as chair of the ABA CI Specialty Committee and William Shapiro, AuD, as cochair. Neault currently coordinates audiology services for the Cochlear Implant Program at Children’s Hospital Boston and serves as assistant professor of otology and laryngology at Harvard Medical School.

ABA Staff Profile

Keri Murphy
Certification Manager

Note: At the time of preparation for this issue of AT, ABA Board of Governors elections were in process. We will be publishing profiles of the new ABA board members in future issues.

Hails from: Fairfax, VA, but I was born in Ft. Myers, FL

Degree: BS, Business Management, Virginia Tech

Years with the ABA: One and a half

What I Do for the ABA: My primary duties include reviewing initial and follow-up certification applications, recertifications, and audits. I verify audiologists’ licensure statuses and prepare credential verifications as requested. I also work closely with the managing director on the ABA Board conference calls and face-to-face meetings, as well as events at AudiologyNOW!®

In My Free Time: I like to walk, read, watch football, and go to the beach with my husband and three children. Now that the last of our children is away in college, I hope to travel more.

Quote to Live By: “Life is a journey, not a destination.” —Ralph Waldo Emerson
School. Shapiro is clinical associate professor in the Department of Otolaryngology at New York University (NYU), as well as supervising audiologist at the NYU Cochlear Implant Center. Both are highly experienced in the field and served on the ABA CI Specialty Committee, which originally developed the credential. The ABA is delighted that Drs. Neault and Shapiro accepted these leadership positions.

Neault and Shapiro are taking the reins from two other luminaries in field, Patricia Chute, EdD, and Cheryl DeConde Johnson, EdD. Following her appointment as dean of the Mercy College Health and Natural Sciences School, Chute found it necessary to step down as cochair of the CI Specialty Committee, and Johnson elected to step down as well, now that she is working so diligently on the ABA Pediatric Audiology initiative. The ABA is deeply appreciative to both Drs. Chute and Johnson for their great expertise and dedication in developing the CI specialty credential.

Rounding out the new committee is Jeanne Coburn, AuD, with the CI program at Baystate Health in Massachusetts; Jannine Larky, MA, director of the Stanford Cochlear Implant Center; Dawnna Mills, AuD, director, Adult Cochlear Implant Program of the House Ear Clinic; and Stacy Payne, MA, supervisor of audiology and cochlear implant services at Nemours Children’s Clinic. This team of esteemed subject matter experts is now hard at work leading the update of the CI Specialty Certification.

Those sitting for the examination will be joining approximately 60 other audiologists who pursued the credential as it:

- Demonstrates a commitment to excellence in terms of knowledge base, experience, and continuing education;
- Provides consumers with a method of identifying audiologists with expertise with cochlear implants;
- Helps individual audiologists identify themselves as experts;
- Identifies the knowledge required to promote better patient outcomes;
- Verifies professional experience to employers; and
- Provides a basis for career advancement in the field.

If you’ve been considering pursuing the ABA CI Specialty Certification, the administration of the examination following AudiologyNOW! provides a convenient venue for the opportunity to earn this prestigious credential.

Applications for the San Diego administration must be postmarked by February 10, 2010. An audiologist must either hold Board Certification in Audiology to apply for the CI Specialty Certification or apply for, and be deemed eligible for, Board Certification in Audiology, at the time of application for the CI Specialty Certification.

To download the application for Board Certification in Audiology and/or the CI Specialty Certification, please visit the ABA Web site at www.americanboardofaudiology.org. If you have any questions regarding Board Certification in Audiology or the ABA CI Specialty Certification program, contact the ABA office at aba@audiology.org or 800-881-5410.
By increasing member contributions to the PAC, together we can PUSH to achieve the Academy’s advocacy goals.

PUSH the PAC!

Visit www.audiology.org, search key words “PUSH the PAC” to learn more.
We Want YOU!
To Help PUSH the PAC

With the New Year comes new opportunities to improve upon Academy efforts. Did you know that for as little as $50, you could increase the presence of audiology on Capitol Hill and help shape public policy? Make this the year that you sign up for a monthly debit contribution to Audiology PAC, Inc. For $25, $50, $100, or more a month, you can help to ensure that the voice of the profession is well represented in Congress.

The PAC Advisory Board created the PUSH the PAC campaign to encourage ALL Academy members to contribute to the PAC. Your participation can help increase the size of the PAC and increase the presence of audiology!

The American Academy of Audiology invites you to join your colleagues to PUSH the PAC. Not only will you receive great benefits, you will be directly contributing to the success of the profession!

Here are some of the perks you can expect to receive:

**President’s Circle ($500+/year)**
- A yearly lapel pin denoting your membership
- VIP admission to the PAC event at AudiologyNOW!
- An invitation to participate in an “insider’s briefing” at AudiologyNOW!
- Your choice of apparel featuring the PAC logo
- PAC contributor ribbon at AudiologyNOW!

**Capitol Circle ($250–499/year)**
- Your choice of apparel featuring the PAC logo
- PAC contributor ribbon at AudiologyNOW!

**Eagle Circle ($101–249)**
- A small gift featuring the PAC logo
- PAC contributor ribbon at AudiologyNOW!

**Star Circle ($10–100)**
- $25 and above will receive a PAC poster
- PAC contributor ribbon at AudiologyNOW!

**Want other ways to help to PUSH the PAC?**
- Challenge your friends, family, coworkers, and colleagues to see who can recruit the most contributors.
- Start in your state! Encourage fellow members of your state academy to help out national efforts by making contributions to Audiology PAC, Inc.

By contributing to the PAC you help to advance advocacy goals benefiting the profession. Stay tuned for future correspondence from the Academy for other unique opportunities to PUSH the PAC.

Special thanks to the PAC Advisory Board for their assistance in this exciting new campaign: Gyl Kasewurm, Chair; Jenny Dossin; Craig Kasper; Shana Martinez; Bre Myers; Tina Stern; and Brian Fligor, Board Liaison.
AAMA Reviews Audiology’s Scope of Practice: The Academy Responds

By Kris English

In 2005, the American Medical Association (AMA) decided to review 10 health-care professions, based on a concern that these professions are expanding their scopes of practice at the risk of potentially harming the public. The 10 professionals include audiologists, dentists, naturopaths, nurse anesthetists, nurse practitioners, optometrists, pharmacists, physical therapists, podiatrists, and psychologists.

The AMA has written extensive modules about a number of health-care professions, collectively called the AMA Scope of Practice Data Series. These modules were recently released, and in July 2009, the American Academy of Audiology established a task force to review the Audiologists module and provide recommendations for a response. The AMA Response Task Force (chair: Georgine Ray) actively sought to include representation from all organizations involved with audiology; those who could not participate in the actual task force work have been asked to endorse the final report. I hope all members get a chance to thank at least one task force member in person for contributing countless hours to this important project. I personally appreciate the report’s clear and professional voice of confidence in our profession.

Next steps: the Government Relations Committee (chair: Erin Miller) and its State Affairs Subcommittee (chair: Gail Whitelaw) will use this report to create “tool kits” for individual member use and also for state organizations to share with lobbyists and governmental decision makers. The latter will be disseminated with the help of the State Network Committee (chair: John Coverstone). Members will be kept apprised of these developments. In September, while the task force was hard at work, the Academy sent a letter to the AMA acknowledging the existence and goal of this module. The AMA replied with the invitation to assist in correcting factual errors, and included the latest version of the module. The Board of Directors decided not to participate in a review process that was beyond the Academy’s control, and so declined to participate.

Members: please review all components of this issue carefully, and discuss with your colleagues. Threats to audiology’s autonomy and scope of practice will come at the local/state level, and we have a professional obligation to maintain vigilance.

An interesting fact: The AMA represents less than 25% of physicians in the United States.

Visit www.audiology.org, and search key words “AMA SOP Data Series” to find these resources on the
Academy's Web site:

- AMA Response Task Force Report
- Academy letter to AMA acknowledging the existence and goal of the module
- Latest version of the module
- Academy letter to AMA declining participation
- ARA’s letter of support for the Academy’s task force report

The Academy thanks the following task force members for their time, support, and service to the profession:

Georgine Ray, AuD, Academy Board Member, Task Force Chair
Debra Abel, AuD, Academy Director of Reimbursement
Victor Bray, PhD, Member of the Academy of Doctors of Audiology
John Coverstone, AuD, Chair of the Academy State Network Committee
Craig Johnson, AuD, Member at Large
Sara Lake, JD, CAE, Managing Director of the American Board of Audiology
Erin Miller, AuD, Chair of the Academy Government Relations Committee
Jerry Northern, PhD, Member at Large
Paul Pessis, AuD, Member of the Academy Practice Policy Advisory Council
Melissa Sinden, Academy Senior Director of Government Relations
Charlie Stone, AuD, President of the Academy of Doctors of Audiology
Vicki Tuten, AuD, President of the Military Academy of Audiology
Therese Walden, AuD, Member of the American Board of Audiology
Kadyn Williams, AuD, Member of the Academy Practice Policy Advisory Council

The Academy of
Rehabilitative Audiology

PO Box 56 Fontana, CA 92333
Fax: (888) 552-7441
Email: mail@audiockab.org

November 8, 2009
Dear Dr. English,

On behalf of the Academy of Rehabilitative Audiology (ARA), we wish to wholeheartedly support the American Academy of Audiology’s response to the AMA Scope of Practice Data Series: Audiologists (April 2009). The ARA is comprised of audiologists who clearly recognize the complex nature of hearing disorders and the effects these disorders have not only on hearing impaired individuals, but on their families as well. As strong consumer advocates who support the need for comprehensive communication rehabilitation for patients, we believe audiologists are the best trained and most capable professionals for providing these vital services.

Robert W. Sweetow, Ph.D.
President, Academy of Rehabilitative Audiology
Director of Audiology
Professor of Otolaryngology
University of California, San Francisco
400 Parnassus Ave. A705
San Francisco, CA 94143-0340
415-353-2012

c.c. Patricia Krico, Ph.D., Past President of ARA, 2008
John Greer Clark, Ph.D., President Elect of ARA, 2010
Joseph J. Montano, Ed.D., President Elect of ARA, 2011

Kris English, PhD, is the president of the American Academy of Audiology.
New Members of the American Academy of Audiology
Scott Beall, AuD
Curtis Billings, PhD
Lawrence Bridge, AuD
Heidi Brown, MA
Tracey Demmon, AuD
Rachael Dolezal, MA
Jill Foltz, AuD
Michele Gortemaker, AuD
Jill Gruenwald, AuD
Christina Hammer, AuD
Olivia Henson, AuD
Katie Hopkins, MA
Violette Lavender, AuD
John Newall
Lynn Niederlitz, MEd
Ann Oommen, AuD
Charles Perine, AuD
Kari Ann Pietralczyk, MS
Betty Pittman, MA
Jill Pruvost, MS
Douglas Steinberg, AuD
Janet Sturtevant, MEd
Amanda Teuscher, AuD
Angela Wright, AuD
George Panayiotou, AuD
Kirsten Andenas
Katie Anderson
Lauren Anderson
Allison Arnold
Kayla Ashland
Elizabeth Aspell
Shehla Assaad
Valerie Audet
Julie Azar
Mallory Baker
Kristin Baldwin
Shruti Balvali
Brittney Barry
Tracy Barshoff
Sara Beckerman
Tarah Beckwith
Marie-Michele Beliveau
Tim Beneke
Chana Bernstein
Natalie Bevilacqua
Amanda Bohn
William Bologna
Samantha Booth
Gennell Bowen
Laura Branscum
Lindsay Braziller
Whitney Brinker
Brittany Brose
Sara Brown
J. Nicole Buffington
Amanda Burke
Haley Butler
Anna Bzdok
Armi Cagingin
Shelby Campbell
Helen Cantin
Erin Carey
Rachel Carl
Julie Carlson
Courtney Caron
Kimberly Chamberlain
Chia-Tsen Chen
Yu-Fu Chen
Amanda Clark
Erin Cobbler
Jennifer Cochell
Kelly Coffman
Charlene Cohen-DeRoy
Sara Coit
Claire Collord
Caitlin Conley
Sara Conrad
Nicole Corbin
Kelsey Corcoran
Christine Corley
Jacey Courser
Kelcey Cushman
Laura Czarniak
Molly Dalpes
Allie Davids
Timothy Davis
Kristy Deiters
Mary Catherine Denman
Aniruddha Deshpande
Elaine Devora
Lindsay Diethorn
Jessica Dittmer
Laura DiTusa
Catherine Dobson
Rachel Dodds
Anne Douville-Brouillette
Meghan Dowdle
Audrey Dubord
Anna Dukes
Emily Durbin
Alexandra Dykhhouse
Megan Edwards
Megan Eickmeyer
Greta Eikenberry
Luke Emberlin
Jessica Evenstad
Vanessa Ewert
Rola Farah
Elizabeth Farris
Esther Fogel
Brandalyn Fontenot
Lindsay Foster
Jessica Freesen
Melanie Gagnon
Caorlynne Gailey
Lauren Garea
Stacey Gaskill
Isabelle Gauthier
Anna Gershteyn
Hany Ghonaim
Ann-Merita Golding
Laura Gonzalez
Adam Goulson
Lydia Gregoret
Maria Grijalva
Jody Guariz
Rae Guerrero
Samantha Gustafson
Audra Harker
Peter Hart
Kelsey Hatton
Erica Hegland
Erin Hegner
Erika Hendrickson
Amanda Heringer
Mollie Hiipakka
Meghan Hiss
Kim Thien Ho
Katherine Hoffarth
Krista Holderman
Kelley Holland
Laurel Horne
Laura Hornick
Natacia Howard
Cherie Hsu
Ashley Huerta
Charlie Huffman
Amanda Humphreys
Kevin Ivory
Claire Jakimetz
Sasha Jean-Torchenaud
Edward Johnson
Lauren Johnson
Ryan Johnson

New Members of the Student Academy of Audiology
Gloria Ackers
Jennifer Adamson
Keith Albright
Melissa Alexander
Nisreen Alkhayer
Jonas Allooh
Elyse Amigo
Sofiya Analaryan
Just Joined

Michael Jones
Kailen Judge
Lauren Kaplan
Cornelia Keim
Alison Kemph
Kiyana Kianfar
Annie Kiener
Chad Kittleson
Nicole Klutz
Amanda Kluzynski
Reeti Kooner
Christine Kormash
Kristin Kozlowski
Kurt Kramer
Shoshana Krauss
Sara Lachner
Marieve Lajeunesse-Rousseau
Kimberly Lamb
Katherine Lamoreau
Jodi Lareau
Jennifer Larsen
Megan Larson
Jaclyn Latovitzki
Kelly Lebel
Amelie Leroux
Joanie Lessard
Matt Lewandowski
Sarah Lewandowski
Qi Li
Jennifer Lightfoot
Nicole Ludke
Christine Luketic
Randi Luxmore
Megan Lyons
Jennifer Maceda
Heather Malynuk
Krystal Mann
Jessica Manning
Lori McClelland
Natalia McCoy
Aisling Meier
Victoria Mena
Luke Meyers
Ashley Minton
Chasity Moore
Kari Morgenstein
Claire Morris
Nicole Morris
Shinelle Moruf
Meghan Murphy
Sabrina Mussawer
Sara Naylor
Timothy Needham
Sara Neumann
Alison Newnam
Kori Nitta
Kerri O'Connor
Alexandra O'Dell
Jane Olaska
Sun Mi Ong
Lisa Ortiz
Jennifer Pacchiana
Francesca Paglia
Faith Pampel
Kristi Panek
Lindsey Parr
Emily Patterson
David Peach
Sherin Pennickara
Tiffany Pereda
Kristi Petersen
Deric Peterson
Mary Peterson
Kim Pierre
Jillian Pope
Maria Porta
Nicole Powers
Kathleen Pritzl
Lindsay Prusick
Jennifer Pyo
Lindsay Radko
Julia Rainsford
Jennifer Ratner
Lindsay Raybuck
Erie Rellinger
Kimberly Richards
Amy Richardson
Alaina Richarz
Jay Richman
Jerrica Rieger
Jaclyn Riel
Rebecca Riesterer
Jason Riggs
Mallory Robb
Maryse Robidoux-Leonard
Christine Rodolfo
Jodi Rokuson
Polina Roskin
Genevieve Roy
Natalie Saba
Sachi Salazar
Lauren Sandberg
Mark Sanders
Laurie Satz
Cristi Sauls
Jennifer Schmidt
Kathryn Schneider
Benjamin Schultz
Jennifer Schumacher
Sarah Seavers
Danny Secor
Shelby Seeberg
Amanda Selvey
Kristin Shearer
Kyle Shepard
Jennifer Shepherd
Jung Hye Shin
Tyler Shores
Corrie Smith
Kristie Smith
Rachel Specht
Laura Spencer
Mohan Sridhara
Tanya Stathopoulos
Kyle Steenburg
Isabelle St-Pierre
Danielle Sturgeon
Shannon Syarto
Amanda Szymbanski
Amanda Tatro
Adrian Taylor
Timothy Teague
Viral Tejani
Sarah Tenin
Claire Thorleifson
Cory Tickle
Rachel Tomasek
Rebekah Tozer
Aline Tran
Jessica Tremblay
Lisa Tromley
Tessa Utz
Carrie Veneman
Gregory Verzumo
Jessica Vetter
Claudynie Viblot
Elisabeth Vo
Geoffrey Waite
Alison Ward
Megan Weaver
Michael Webb
Ting Wei
Rachel Weichert
Diane Weisenberger
Jessica Wells
Bethany Wenger
Chloe White
Jennifer Wiecks
Amelia Wilkey-Audet
Libby Willis
Cory Workman
Kelly Wright
Sandra Yampolsky
LaShonda Yarbrough
Lindsey Yarnell
Mary Yee
Kristen Young
Yevgeniya Yubilier
Ashlee Zimmerman
Status Update

The Ototoxicity Monitoring Position Statement and Guidelines have been published and are now available on the Academy Web site: www.audiology.org, search key words “ototoxicity monitoring.” Developed by the Academy’s Ototoxicity Monitoring Task Force, the dual purpose of this document is to provide a position statement on the clinical audiologist’s role in ototoxicity monitoring and guidelines for the implementation of an ototoxicity-monitoring program.

The newly proposed Intraoperative Neurophysiologic Monitoring Statement contained in the audiology Scope of Practice will remain open for widespread peer review until January 13, 2010. To review the proposed statement, visit the Academy’s Web site: www.audiology.org, search key words “intraoperative monitoring.” Send comments to amiedema@audiology.org.

BE PART OF THE ACADEMY’S FUTURE

Come to the 2010 business meeting and help us put the pieces together.

The 2010 Academy Business meeting will review 2009, followed by roundtable discussions with members of the Academy staff and leaders. It is the responsibility of all members to help shape the future of the Academy. The Academy is an association of, by, and for audiologists, and we need your help.

Mark your calendars for Saturday, April 17, 2010, at 1:00pm during AudiologyNOW! in San Diego. Visit www.audiologynow.org for more information.

Attendees will be entered to win one complimentary registration to AudiologyNOW! 2011.
The nominees presented in this issue of *Audiology Today* are candidates for the president-elect and three member-at-large positions on the Academy’s Board of Directors.

One of the candidates for president-elect will be elected by the general membership to serve a three-year term (one year as president-elect, one year as president, and one year as past president) beginning July 2010 and ending June 2013.

Three of the candidates for the member-at-large positions will be elected by the general membership to serve three-year terms, beginning in July of 2010 and ending June of 2013.

The 2010 American Academy of Audiology election of new board members will be held from February 3 through March 3. All members with an electronic address in the database will be sent an e-mail linking them to our election Web site. Note the election Web site is separate from the Academy Web site. The link you receive in the e-mail is individually unique and can only be used by the member receiving the e-mail. Once used, the unique link is disabled.

Those members who do not have an electronic address on file will be sent a paper ballot by regular mail on January 31. It is anticipated that the new board members and the new president-elect will be announced on or about March 11, 2010.

The biographical information and position statements presented here will also be available on the election Web site. Voting for the leadership of the Academy is an important privilege of membership for Fellows of the American Academy of Audiology.

You are encouraged to vote.
President-Elect

Paul R. Kileny, PhD
Professor of Otolaryngology/Head and Neck Surgery, Pediatrics and Communicable Diseases; Director, Division of Audiology and Electrophysiology, University of Michigan Health System, Ann Arbor, MI; Visiting Full Professor, Sackler School of Medicine, Tel Aviv University, Israel; Adjunct Professor, Wayne State University, Detroit, MI

Education
BS: Communication Sciences and Disorders, Sackler School of Medicine, Tel-Aviv University, 1973
MS: Communication Sciences and Disorders, Sackler School of Medicine, Tel-Aviv University, 1975. Major: audiology
PhD: Audiology, University of Iowa, 1978

Position Statement
As an Academy founder, I am honored to be nominated for the presidency of the organization representing the profession I dedicated myself to over 30 years ago. Our profession has undergone significant transformations, which along with new national professional and economic realities have brought us to a crossroads where every decision we make will have a long-lasting impact on every aspect of our profession. We stand at the threshold of a significant reform of the U.S. health-care system that will have a profound impact on the delivery of care, access to health care, and provider compensation. Therefore, more than ever, we need to continue defining our professional priorities and our professional identity. While the doctoral transformation of our profession is nearly complete, our educational transformation is still a work in progress. Where warranted, we will need to consider expanding our existing scope of practice to encompass activities that benefit our patients. Now is also the time to make well-informed projections regarding audiologist workforce needs in the next two decades, and plan accordingly for the benefit of future patient populations and our profession’s economic status. Last, but not least, we need to promote the unity of our profession—we are licensed audiologists first and subspecialists second. Let’s continue to make our profession attractive, productive, well compensated, and exciting for the next generations of audiologists.

Therese C. Walden, AuD
Senior Audiology Clinician and Researcher, Army Audiology and Speech Center, Walter Reed Army Medical Center, Washington, DC

Education
BS: Communication Sciences and Disorders, Towson State University, 1983
MS: Audiology, Towson State University, 1984
AuD: Audiology, Central Michigan University, 2001

Position Statement
As president-elect of the Academy, I will help focus our efforts in the core areas of advocacy, research, education, and public awareness. Although we have made tremendous progress, we still have much to do in these areas, and it is the membership, all of us, who need to do the heavy lifting to reach our goals. We need to encourage and challenge each other to take greater individual responsibility while working together to pursue the issues facing the Academy and the profession. I would like to focus on the following issues:

- A purposeful push in the 111th Congress for passage of direct access legislation,
- Continued advocacy for increased funding for research and support of research training programs,
- Enhanced collaboration between the practitioner and academia to develop not only the highest academic standards but also professional standards predicated on contemporary doctoral practice with accreditation for those programs that meet those standards.

We also need to expand our efforts to aggressively recruit into the field to help grow the profession, and we need continuous local and national focus on the education of the public in all things audiology. It takes the absolute commitment of each of us to realize our goals. We have the capability; we must get creative with our resources and take on these challenges together. I’d be honored to share the workload with you.
Members at Large

Shilpi Banerjee, PhD
Senior Research Audiologist, Starkey Laboratories, Inc., Eden Prairie, MN

Education
BSc: Audiology and Speech Therapy, Bombay University, India, 1992
MA: Audiology and Hearing Sciences, Northwestern University, 1994
PhD: Communication Sciences and Disorders, Northwestern University, 2003

Position Statement
As advances in science and technology make available better solutions to hearing and balance problems, and as our profession grows and evolves in the 21st century, there are challenges we must address. Foremost among these are direct access, the standard of clinical practice, and meeting the demand for services. Direct access benefits audiologists, consumers needing high-quality care, and a health-care system that must manage its costs. Adhering to evidence-based clinical practice would simultaneously raise the standard of care, demonstrate our position as leaders in hearing and balance care, and provide a tangible point of distinction from other service providers. Given the projected lack of growth in the number of audiologists and the expected increase in the demand for hearing care in the coming years, it would behoove us to look ahead at the speed bumps and reconsider the current service delivery and education models. I believe that statements in the recent Consumer Reports article on hearing aids and the AMA Scope of Practice Data Series on audiology reflect the urgency in resolving these issues. These (and other) challenges are not easily or quickly addressed, nor are the best solutions always obvious. Nonetheless, I intend to give them my thoughtful attention.

Bettie C. Borton, AuD
CEO/Director, Doctors Hearing Clinic, Montgomery, AL

Education
BS: Education of the Deaf with CED Certification, University of Texas, 1974
MCD: Audiology, LSU Medical Center, 1976
AuD: University of Florida, 2000

Position Statement
I am honored to be nominated to the Academy’s Board of Directors. With more than 30 years experience in a variety of employment settings, I have become increasingly committed to the professional organization “of, by, and for” audiologists. In order to define ourselves as experts in hearing health care, we must own every sector of our discipline, including professional organizations encompassing membership, certification, and university accreditation. If elected, I will:

- Continue efforts to procure direct access and appropriate reimbursement for audiologists by seeking recognition of audiology’s contribution to the diagnostic and rehabilitative process.
- Encourage professional autonomy by supporting efforts to strengthen ABA’s board certification program, as well as increase its rigor, and promote independent credentialing of professional training programs by ACAE.
- Develop opportunities for students and young researchers by seeking new and innovative means to fund such programs.

Much progress has been made toward true autonomy for our profession, but the battle is not yet over. I believe my experience in both academic and clinical arenas will be of value to the board and the membership it serves. It would be my privilege to serve as a member of the Academy’s Board of Directors, and I will work diligently to promote and protect the professionals it represents.
Members at Large

Jackie L. Clark, PhD
Assistant Clinical Professor and Senior Clinical Audiologist, School of Behavioral and Brain Sciences, University of Texas at Dallas

Education
BS: Merchandising, Colorado State University, 1975
MS: Communication Disorders, University of Texas at Dallas, 1986. Majors: audiology and speech-language pathology
PhD: Human Development and Communication Sciences, University of Texas at Dallas, 1995

Position Statement
It is indeed humbling to be on the same election slate as such highly respected and noteworthy colleagues, who have and will accomplish so much for the profession of audiology. Despite going through a change of career to become an audiologist, I have been immensely privileged to meet hearing health-care practitioners around the world from whom I’ve learned a vast number of important and relevant concepts. Of those, there are two that should be considered high priority for the profession of audiology. First, there aren’t enough audiologists to go around. It is estimated by the World Health Organization that 642 million (10 percent) of the adult global population will have hearing loss from mild to worse. The heaviest burden will be evident in the low- and middle-income communities. Second, with the paucity of audiologists, there is a need to educate the general public about what the profession of audiology can offer. I believe there are many exciting opportunities within the United States to address these and other professional priorities in a proactive—not aggressive or defensive—manner. As a clinician and academic, I firmly believe that the ONLY organization positioned to address and act upon the priorities important to the profession of audiology is the American Academy of Audiology. If elected as a member at large of the Academy Board of Directors, I stand ready to listen to members and help prioritize, strategize, and implement those changes that membership deems important.

Gloria Garner, AuD
Senior Audiologist, University Health Care System, Augusta, GA

Education
BS: Audiology and Speech Pathology, University of Georgia, 1984
MEd: Audiology, University of Georgia, 1986
AuD: Salus University, 2003

Position Statement
It is an exciting professional honor to be nominated to serve as member at large at such a pivotal time. As we gain professional autonomy and public recognition as a doctoring profession, we as an association have the opportunity to model an exemplary commitment to openness, transparency, and high ethical standards. Our primary focus as audiologists should be putting our patients’ needs first while delivering innovative technologies that improve their quality of life. It is crucial for the public to understand the collaboration needed between audiologists, researchers, scientists, and engineers to achieve the best clinical outcomes for our patients. From my perspective, there are four major priorities for our profession:

- Continue on the path to full professional autonomy with recognition by all government and regulatory agencies as a directly accessible doctoring profession.
- Recognize and cultivate bright students and young clinicians as future leaders, clinicians, researchers, and educators in the field.
- Work collaboratively to strengthen and promote harmonious relationships with otolaryngologists and professionals involved in hearing health care to yield the best patient outcomes.
- Continue to foster mutually fruitful relationships with manufacturers of hearing health-care products while maintaining appropriate ethical boundaries as professional health-care providers.
Members at Large

Thomas A. Littman, PhD
Owner, Factoria Hearing Center, Bellevue, WA; Adjunct Assistant Professor, University of Washington AuD Program

Education
BS: Communication Disorders, Northern Illinois University, 1977
MS: Audiology, Illinois State University, 1979
PhD: Audiology, Louisiana State University, 1990
Postdoctoral Fellowship: Northwestern University, 1993

Position Statement
My 32-year audiology career has combined teaching, research, administration, direct clinical care, and private practice. I have drawn on that experience, as well as my previous experience on the Academy board, to identify three areas I would address.

First: I would encourage continued development of our political voice. We were successful in gaining government support for universal newborn hearing screening and hearing aid tax credits. We now need to step up our efforts to achieve other goals such as direct access and improved reimbursement.

Second: I would continue working on an Academy-supported system for acquiring clinical outcomes data. I consider this a priority because these data validate what we do, provide leverage for improving reimbursement, and promote greater professional autonomy.

Third: I would promote acceptance of audiology assistants. Assistants would work under the direct supervision of an audiologist, and their scope of practice would be carefully structured. The goal is to free audiologists to do the patient-focused work we are most interested in. Furthermore, appropriate use of audiology assistants could provide payroll savings sufficient to provide better salaries and benefits for audiologists.

I look forward to the opportunity to give something back to an organization that has helped me grow personally and professionally.

David Allen Zapala, PhD
Senior Consultant, Section of Audiology, Department of Otolaryngology-Head and Neck Surgery/Audiology, and Assistant Professor of Audiology, College of Medicine, Mayo Clinic, Jacksonville, FL

Education
BA: Communications Disorders, California State University, Fullerton, 1980
MS: Audiology, Utah State University, 1983
PhD: Audiology, University of Memphis, 1993

Position Statement
Health care is at a crossroads. Audiology’s potential contribution to our nation’s health care has more leverage now than ever before. Audiologists offer safe, effective, necessary, and convenient services to the hearing impaired and to people with certain types of dizziness. We are less expensive than other providers. In short, we offer health-care value. We must be persistent in telling our story of health-care value to the public, governmental agencies, and private insurance companies.

You are central to that story. Your daily good work speaks volumes to those whom you treat or work alongside. Together, we have transitioned to a doctoral-level profession, which means a great many of us have sacrificed time and money to forge a new foundation for our profession. We have earned a sense of accomplishment. But there is more to do. So long as patients are restricted from seeing an audiologist for problems we can easily diagnose and treat, we will not help humanity to our fullest potential, and we will not have our fair stake in the marketplace. Unreasonable external restrictions on our capabilities are unacceptable. I offer my service to join in the effort to remove these barriers and further develop our profession.

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The American Academy of Audiology Foundation is pleased to announce that Mary Pat Moeller, PhD, director of the Center for Childhood Deafness at Boys Town National Research Hospital, will present the Marion Downs Lecture in Pediatric Audiology at AudiologyNOW!® 2010. Dr. Moeller’s presentation, “Optimizing Early Word Learning in Infants with Hearing Loss,” is scheduled for Friday, April 16, at the San Diego Convention Center.

Dr. Moeller’s presentation will examine factors that influence word learning in children with hearing loss. She will discuss how recent developmental research suggests that children develop “smarter” learning strategies as their vocabulary grows, and how these theories have interesting implications for outcome measurement. Her discussion will focus on lexical development in the key areas of vocal development, support for word learning, and access to word learning. She will also discuss ways in which individual differences in developmental transitions can guide clinical decision making.

Dr. Moeller’s studies at Purdue University encompassed audiology, speech, hearing, and aural rehabilitation, and she subsequently earned a PhD in child language at the University of Nebraska. She is currently conducting a prospective longitudinal study of language development in infants with hearing loss, and she is co-principal investigator of a multicenter study investigating outcomes of hard-of-hearing children.

The Marion Downs Lecture in Pediatric Audiology is funded annually by the AAA Foundation with a grant from The Oticon Foundation. In 2010, a live Webcast of the lecture will be available at no charge through eAudiology, thanks to additional funding from The Oticon Foundation. As of January 1, first-come, first-served registration for the complimentary viewing of the presentation will be available. The presentation will also be available on demand through spring 2011.

The Foundation Board is grateful to The Oticon Foundation for their gift that funds the Marion Downs Lecture each year. This generous contribution supports the presentation of research by Dr. Moeller and other world-renowned hearing scientists, advancing education in pediatric audiology. Visit www.audiologyfoundation.org for more information on the lecture and other programs funded by the Foundation.
A New Look for the Foundation
The Foundation thanks Amy Miedema and Suzi van der Sterre of the Academy’s communications department for their inspiration and creative guidance as the Foundation developed and rolled out its new logo in November. When Miedema and van der Sterre consulted with Foundation leadership, they suggested a more contemporary “rebranding” with a logo facelift and color update.

After viewing several prototypes, Foundation leadership settled on the “sound waves” version, which will be prominently featured in and on Foundation media from now forward. When asked to explain her creative thoughts behind the new logo, van der Sterre said she “overlapped sound waves to create depth and movement…and that the layers and arcs represented the multiple ways the Foundation supports audiology and helps advance the hearing sciences.”

Member Assistance Program Applications Due January 22, 2010
Audiologists who wish to attend AudiologyNOW!® but are experiencing financial hardship are encouraged to apply for convention travel and registration support through the Foundation’s Member Assistance Program (MAP).

The MAP application is available at www.audiologynow.org and is due January 22, 2010. Applications received by the deadline will be evaluated and reviewed by the award committee. Notification of awards will be made in early February.
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