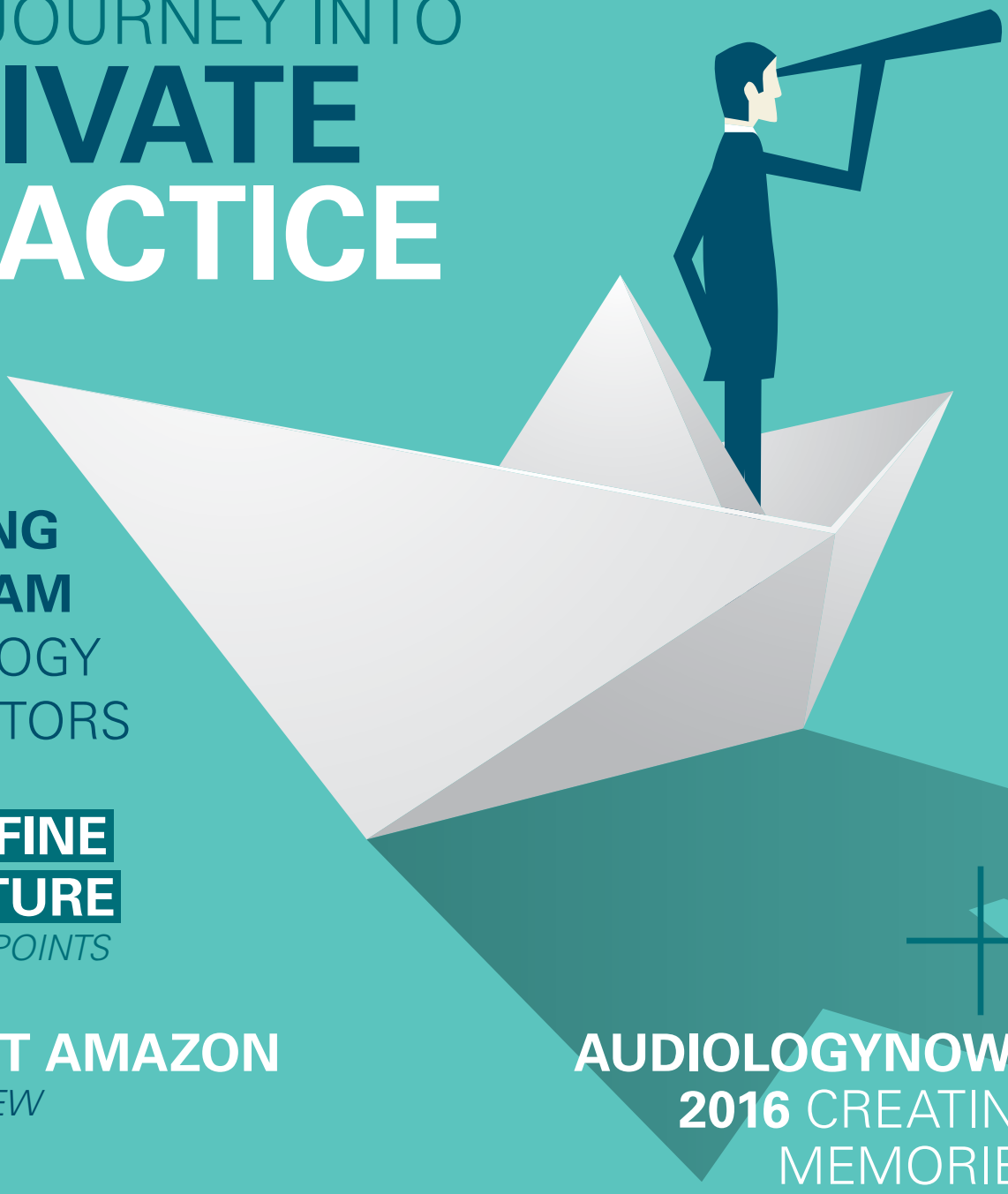
MAY/JUN 2016
American Academy of Audiology
www.audiology.org

AUDIOLOGY TODAY

The magazine of, by, and for audiologists

THE JOURNEY INTO PRIVATE PRACTICE



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AN INTERVIEW

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Academy News

EDITORIAL MISSION

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.

AT provides comprehensive reporting on topics relevant to audiology, including clinical activities and hearing research, current events, news items, professional issues, individual-institutional-organizational announcements, and other areas within the scope of practice of audiology.

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

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AUDIOLOGY TODAY

The American Academy of Audiology promotes quality hearing and balance care by advancing the profession of audiology through leadership, advocacy, education, public awareness, and support of research.

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Main Office
11480 Commerce Park Drive, Suite 220, Reston, VA 20191
Phone: 800-AAA-2336 | Fax: 703-790-8631

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Combined Efforts of Each Individual

Vince Lombardi once said,

"The achievements of an organization are the results of the combined effort of each individual." As I leave this position as president of the Academy at the end of June, I realize how accurate this statement has become for me.

Over the years that I have served on the Academy Board, the question I have heard from members and audiologists all across the country is: "Can we all work together with our audiology counterparts?" Toward that end, the Academy Board has reached out to the leadership at both ASHA and ADA to discuss opportunities for collaboration and/or joint legislation. Over the past few years during the annual Hearing Industry Association meeting, the three organizations have met to discuss common issues and ways to help move the profession forward. Those meetings have not always been successful and on some occasions have been contentious.

What I have learned from these meetings is that legislative issues, not unlike political discussions, are difficult to discuss in mixed company. However, the one issue that we all agree on is the "branding of audiology," and how as audiologists we help change people lives. All three organizations are energized about collaborating on a campaign with a targeted message. We are working on this together and plan to launch the coordinated campaign.

The achievements and success of the Academy depend on its members. As we approach a new board and committee year, I ask that you consider volunteering on a committee or task force. Each voice carries part of a collective message shaping the profession of audiology. If you do not see your views being included, it is time to join in on the conversation. When I worked with the California Academy of Audiology, we came up with a tag line that was intended to address this same point about volunteering: "Hear and be heard."

The Academy is a dynamic organization that should change and grow along with our needs and practices as audiologists. It is up to all of us to direct the course of the profession of audiology. We may not always agree on specific policies or on how to achieve particular goals, but we do need to unite in the one, overriding goal of building the profession of audiology. The future is bright for the profession as long as we are vigilant in setting our own course instead of allowing it to be set for us.

Thank you for the opportunity to serve as your president this past year.

Larry Eng, AuD
Board Certified in Audiology
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Technology's Reach Across Generations

By Maggie Kettler

As audiologists, we are acutely aware of the many advances in technology that are not only shaping the hearing aid and cochlear implant industries, but the audiological practice as well. There is a consistent theme in the literature, at meetings, and from the manufacturers themselves—technology is changing quickly and it is essential that the audiology community keep current. In addition to hearing aid and cochlear implant technologies changing, there are also many new accessory options that are available and interface with the devices.

These assistive technologies can provide solutions to unique environmental, communication, social, or vocational problems that cannot be solved with amplification alone. Audiologists must determine who can truly benefit from the technologies that are available, in addition to learning how to interface all the devices that a patient needs, even as the technology continues to evolve. While the benefits of available technologies are indisputable, the challenge is assisting patients in understanding the range of technologies available and then helping patients understand and fully use those technologies so they can receive the greatest benefits.

One of the more daunting challenges for audiologists is to assess the individual technological needs of patients across the lifespan. Infants who are newly identified with hearing loss, school-age children, college students, young professionals, or retired individuals each have different auditory and communication demands. As such, the technological requirements vary across the lifespan. So while the benefits of the available technologies are indisputable, it is a challenge identifying the devices patients need so that they may gain the maximum benefit.

Working with very young children, the technology questions begin early from parents, family, and teachers—when should families and schools consider FM/DM (digital modulation) technology for the patient? Should a wireless microphone be considered? What is the difference between an FM/DM system and a wireless microphone? Do the differences justify the out-of-pocket price difference? At what age should streaming the

child's tablet to the hearing aids or implants be considered? How can we assess the quality of the sound from the streaming devices? Will the technology in the classroom, such as the Smartboard, interfere with the varying technologies that we recommending? What remote options will the child need their hearing aid or cochlear implant? Of course, the answers to all of these questions are based on the needs of each individual, and no single recommendation will work for all patients. Even as answers to these questions are being explored, new technology can emerge or the child's needs change.

Adult users of hearing aids and cochlear implants have different technology needs than children. FM/DM systems, TV streamers, and/or telephone streamers can help individuals connect at home, in restaurants, in churches, or in the workplace. The U.S. workplace/workday is changing, and the use of technologies is becoming both common and important for anyone to succeed. As more workplaces are moving to remote meetings and teleconferencing, connecting with technology becomes imperative to everyone, including the employee with hearing loss.

Even everyday communication can benefit from the use of assistive technologies coupled to hearing aids. For example, enabling people with a hearing loss to use Bluetooth technology to hear phone conversations bilaterally, in hands-free mode, can provide patients with a more natural hearing experience, and can decrease barriers for the employee at home and work. With the increased ability to stream directly to hearing aids, individuals will be less concerned with finding an amplified telephone, or finding a telephone that is compatible with hearing aids or cochlear implants, and they can feel confident that they will be able to hear well using their typical program. Adults are also able to use mini-microphone technology to experience ease of listening in challenging listening situations in both the office and at home. In the home environment, assistive technology allows an adult patient to be more connected with his or her family. The ability to stream television or music can allow the patient to watch a show with family or friends without complaints that the television is too loud. Being able to connect to the many Bluetooth options can decrease isolation for the patients, allowing for easier communication at large family gatherings or smaller everyday routines, such as watching a movie as a family.

Often the older generations are overlooked as candidates for accessories, as the cost and complexity of assistive devices are considered barriers. There is the sense that patients often feel overwhelmed with the general care and use of the hearing devices, much less adding on extra accessories. As with any age, it is most important with this population to consider the person's individual lifestyle before making technology recommendations. As lifestyles change with age, i.e., empty nest, retirement, increased travel, etc., so do their hearing needs.

There are many technologies that can address the needs of patients who have a wide range of hearing needs. Wireless microphone technology can help in more challenging listening situations like in a restaurant or riding in the car. For those persons with limited mobility, and who may spend a significant amount of time watching television, a television streamer may help them understand what is said and improve quality of life. A telephone streamer may allow someone to use the telephone to call family members, schedule appointments, or call the doctor for medical advice, allowing for greater independence. Telephone streamers, mini-microphones, and remote options have few controls and are often more easily manipulated by patients with dexterity concerns, again allowing a patient to independently control his or her devices and promote self-sufficiency.

Given the advances in technology over the past decade, it is hard to imagine what options will be available for people with hearing loss in the future. Even five years from now, the technology available to treat hearing loss or assist in communication will look very different. What is certain is that the evolution of technology options will continue. As with all technologies, the cost of devices for hearing care will decrease and availability/usability will increase. More options will be available for more patients. Audiologists will need to continue to develop individualized treatment plans based on lifestyles and challenges, and these technologies can greatly impact a patient's overall hearing success. Technology is not just for Millennials. Technology is accessible and beneficial across the generations.

Maggie Kettler, AuD, is an audiologist and clinical manager at Cincinnati Children's Hospital Medical Center in Cincinnati, Ohio. Dr. Kettler is also a member of the Academy's Business Enhancement, Strategies, and Techniques (BEST) Committee.

Illustration by Johanna van der Sterre.

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CALENDAR

May 11–14
Meeting
14th International Conference on Cochlear Implants and Other Implantable Technologies
Toronto, Canada
www.ci2016toronto.org

May 18
eAudiology Web Seminar
The Role and Utilization of Audiology Assistants
www.eaudiology.org

June 8
eAudiology Web Seminar
Efficient, Effective Counseling: How to Put You and Your Patients on the Same Page
www.eaudiology.org

June 9–10
Meeting
The 23rd Annual Appalachian Spring Conference, Current Trends In Cochlear Implants
Mountain Home, TN
www.avreap.research.va.gov/avreapresearch/appyspring.asp

June 16–17
Meeting
Management of the Tinnitus & Hyperacusis Patient
University of Iowa
www.continuetolearn.uiowa.edu

June 17–18
Meeting
Practice Management Specialty Meeting
Austin, TX
www.audiology.org

Announcing Sycle's Anticipated eBook:

The Benefits of Digitizing Your Hearing Care Practice

Running your office on paper versus software - it's the big question many of us consider when we open a practice or find ourselves overwhelmed with processes. Over the past couple of months, Sycle did our own research on the question and shared the findings in our first eBook.

Read on to see what we discovered.

For decades, businesses around the globe have been digitizing their operations to increase efficiency and stay competitive. They've migrated as many processes as possible off paper and into some type of digital format - first on locally hosted systems and most recently to the cloud.

The transition has been slow at times, particularly in the medical field. But over the past 15 years we have witnessed rapid adoption of cloud-based solutions in all types of private practices - including hearing care.

From risk mitigation to cost savings and increased revenue, the benefits of digitization are well proven based on decades of data. The following eBook examines what it actually means to digitize a hearing care practice and the benefits recognized in doing so.

The cost of paper

Here we break down the impact a paper-based operation has on all facets of the modern hearing care practice. It goes far beyond what you pay for a ream of printer stock at your local office supplies store.

The first consideration is storage of paper files. Beyond the price of the file cabinets themselves (which can exceed $1,000) there is also the issue of space. The average file cabinet uses 15.7 square feet of office space - valuable real estate that's not generating revenue. Will Diles, a Hearing Instrument Specialist in Northern California, successfully digitized his practice and in doing so converted what was an 10' x 8' room dedicated to file cabinets into a functioning office space to accommodate an insurance billing professional.

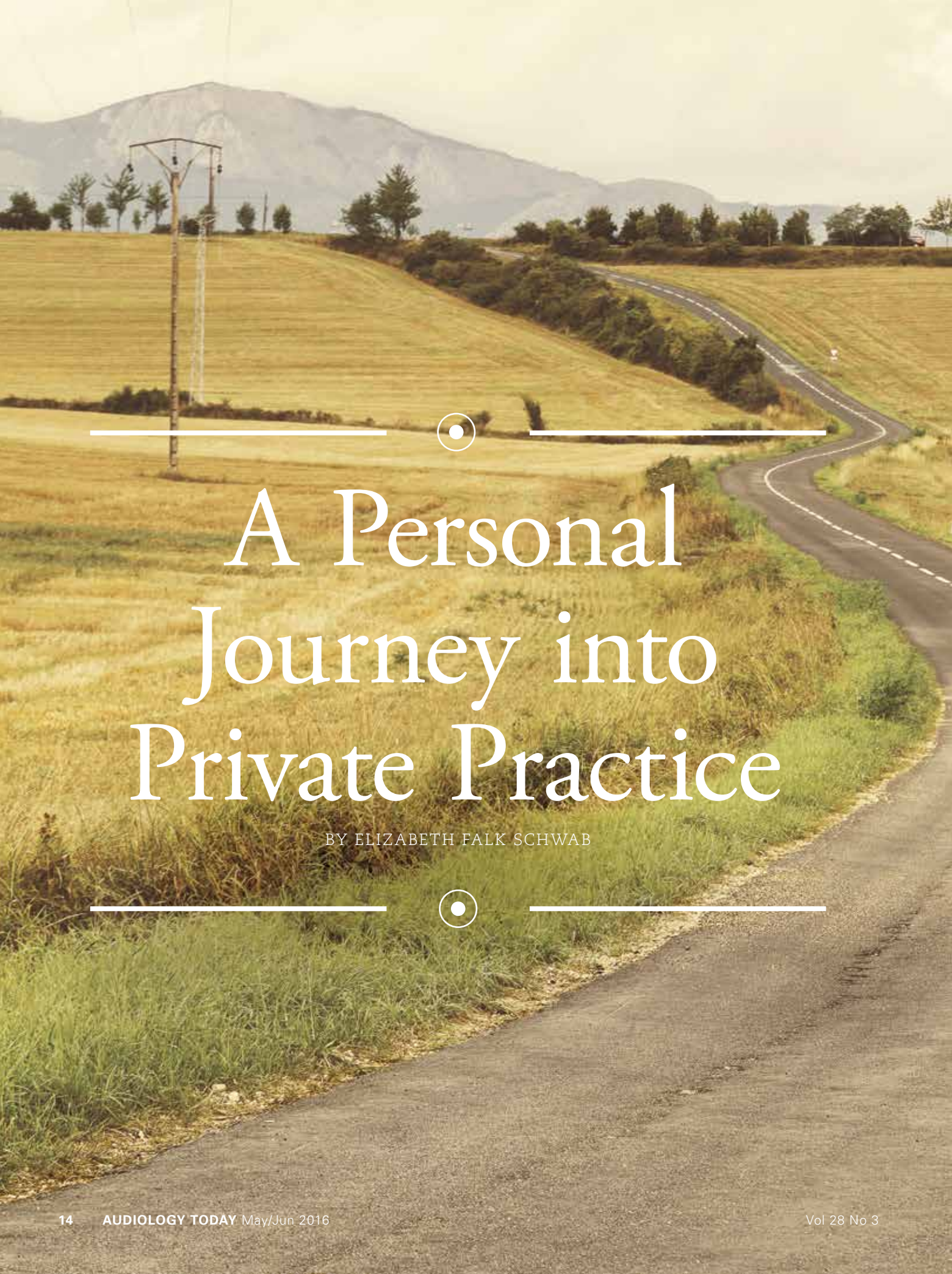
Consider also the expense of organizing and maintaining paper records. The average cost in human labor to file one document is $20. The average cost in labor spent searching for a paper document jumps to $120. And finally, the labor cost spent on replacing a lost or damaged paper document, on average, is $220.

These factors alone, misplaced records, physical space and damaged documents, contribute to such mounting costs that it's no surprise the world's largest companies - the Fortune 1000 - began adopting digital solutions to replace paper decades ago. Those companies require large ERP systems that can cost hundreds of thousands, if not millions of dollars, to implement. Today, small and mid-sized business have numerous cost effective options for digitizing paper records.

sycle

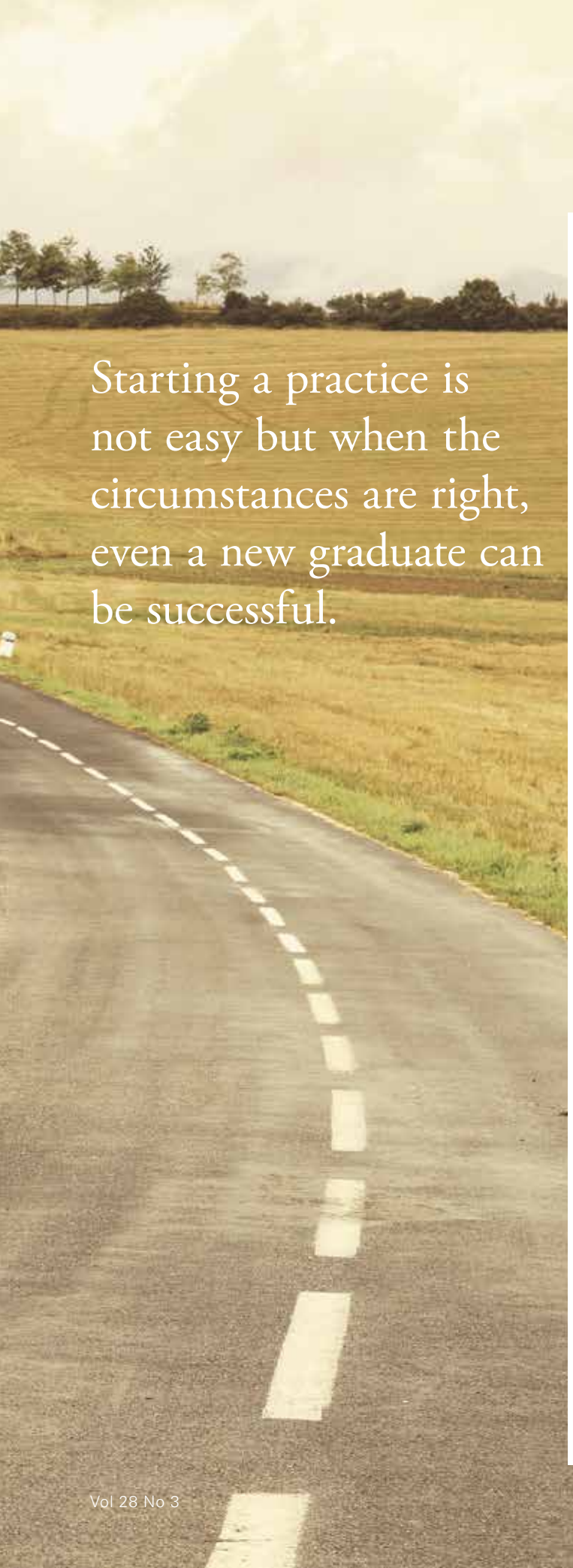
Download the full eBook at web.sycle.net/go/bof to find out more about the benefits of migrating from paper based processes to a digital platform.

Don't miss audiology and hearing care's most relevant conversations on the Syle Blog: web.sycle.net/learn/blog



A Personal Journey into Private Practice

BY ELIZABETH FALK SCHWAB



Starting a practice is not easy but when the circumstances are right, even a new graduate can be successful.

Most experienced practitioners would not recommend starting a private practice immediately following graduation. However, faced with few opportunities and a desire to remain in my small hometown in South Dakota, I decided to beat the odds and start a practice. Sure, experience would help in the process but I didn't have time for experience. I was getting married three months after graduation and needed to establish my career in my community. This wasn't a new idea for me. I earned my AuD from the University of South Dakota in May of 2015. In my third year of graduate school, I knew I wanted to have an equity stake in a private practice. There were a few options for employment in my hometown and the more I investigated my options, the more starting my own practice became the best scenario.

It is hard to believe that it's been about a year since I started planning for my practice. I opened my doors over six months ago. I was lucky enough to spend my externship in two successful private practices. If it wasn't for those experiences, starting from scratch would have been nearly impossible. I have learned so much during the past year! Here are a few tips that have helped me throughout my first six months of operation.

Planning

When in the initial phases of building a practice, you can never be ahead of the game when it comes to time. I felt prepared; I knew the steps that needed to be completed and had my priorities straight except everything takes so much more time than you expect! From securing a business loan and establishing a legal business entity, to finding an office space and renovating to fit your needs, to choosing and ordering equipment and furniture. All of the details needed to start a practice take so much time. It took four months of feverish planning before I was able to open my doors. I have included a list of tasks that I completed in hopes that my timeline will allow others to advance through the process more quickly.

Resources

Have a toolbelt full of resources and use them! For all of the professional expertise you have and need, it's essential to work with someone you know and trust. It just so happens that my husband is a CPA and my father is a business-savvy physician. Now, I'm not recommending marrying based on career!

Budgeting needs to be a priority and I had my CPA right there monitoring everything. When you live in a small town, you know lots of people. It helped that my

contractor, lawyer, banker, and insurance agent are all family or family friends. I would recommend running ideas and pricing proposals past experienced business owners to gain other perspectives. Working with people I know and trust made the initial stages a little less stressful! Don't be afraid to ask for help.

Marketing

Differentiate your practice from the competition. Returning home to a town with numerous dispensing clinics, I knew what I had to offer was different, but I was uncertain of how to convey that to potential patients. Word-of-mouth advertising over time is the goal. Initially, I decided to invest in a local marketing company to lay a foundation for the practice. In a sea of competitors, I found consistent branding was something my competitors did not have. As the new clinic in town, I needed to present a clear and consistent image. It would be easy to skimp on advertising, but getting your name out is most important and worth the investment. Potential patients need to know who you are and where to find you.

Manufacturers may offer to help with the cost of some advertising campaigns, but these campaigns will require more planning time for creation and revisions. I personally like to ask my manufacturer partner for support of high-cost campaigns like direct mailings and half-page

TIMELINE FOR STARTING A NEW PRACTICE

Mid-March 2015

Determine starting a private practice and location
- » Ask manufacturer to run demographics to assess number of patients and where to locate office

Begin business plan

Assess manufacturer presence within competitors

Investigate financing options
- » Conventional loan versus SBA loan
- » Manufacturer loan

General idea of budget needed for loan amount
- » Greatest contributing factors are location, equipment, and operating costs

Obtain audiology equipment quotes

Establish opening date

April 2015

Meet with a small business development center
- » Business plan, startup costs, financial projections, government regulations

Get quotes for building out potential office spaces and sound booths

Create estimated budget

View commercial real estate properties in desired area

Meet with a marketing group for ideas and quotes for services

Apply for state licensure and professional memberships

Receive pricing from manufacturers

newspaper ads, and use a local firm for smaller projects or when I need flexibility and speed in design.

Other marketing ideas I have executed include writing a press release for the local paper for upcoming events. In fact, a press release turned into an article in the business section of our local paper. When talking with my advertising representative at the newspaper, she thought a reporter would be interested in using some information related to memory, cognition, and hearing loss. I had a huge response to the articles.

I have also collected patient testimonials and implemented a patient referral program that has been very successful! Don't be afraid to ask your existing patients to tell their friends and family about their experiences with you. Patient testimonials are one of the best ways to establish credibility quickly in a new practice. Collect these testimonials to use in print ads, on your website, and in social media.

Budgeting

Every successful business should have some form of a budget. Some are more detailed than others, but it is essential to have one in place. When forming your budget, there are many things you need to consider. For a start-up, revenue is very difficult to project. It is challenging to know how many patients you will have as you open the

May 2015

- Establish business entity
- Explore office management programs and compare options through demos
- Determine clinic location and execute the lease or purchase agreement
- Design clinic floor plan
- Meet with bank regarding loan
- Meet with equipment representative regarding specifications, questions, potential discounts, installation and training
- Obtain professional headshot photograph
- Choose logo design and proceed with design of marketing materials
- Obtain business and professional liability insurance

June

- Have promotional items available
- Develop pricing for services and products (if this is ready, the practice management system may be able to import)
- Create protocols and clinic forms
- Apply for Type I and Type II NPIs
- Start any insurance credentialing

July

- Close loan
- Open bank accounts
- Start construction
- Choose finishes
- Order furniture
- Order exterior signs
- Develop Web site
- Meet with radio station regarding advertising and demographics
- Investigate any school-related advertising opportunities

August

- Submit credit applications to manufacturers
- Promote opening of clinic at local events
- Meet with IT or choose and order computers, printer, etc.
- Choose email system for staff
- Purchase electronics
- Select a business telephone system
- Interview and hire office staff
- Advertise opening
- Apply for state sales tax license

September

- Schedule delivery of furniture and electronics
- Order audiology supplies
- Purchase office supplies
- Install Internet and telephone
- Install audiology equipment
- Open doors
- Publish press release

After Opening

- Plan grand opening event
- Discuss advertising resources available through manufacturer partners

doors; furthering that challenge is knowing that you will have to generate new business for several years before there is the potential for repeat purchases. Operating expenses and debt service are more predictable. Accordingly, a good way to begin the budgeting process is to identify your fixed, mixed, and variable costs. As any good business person knows, there is a certain cost of doing business whether you have a full schedule of patients or not. You need to be very comfortable and confident that you have accounted for all of your fixed costs (rent, property taxes, insurance, utilities, etc.). You will also have mixed costs such as payroll and various supplies that you will initially incur no matter how busy you are, but will increase as your patient load grows. Your truly variable costs, such as your cost of goods sold, will only grow as you generate revenue. Being able to accurately predict and control your expenses is fundamental to the budget process and a key to success.

TOTAL START-UP		
Type	**Budgeted**	**Actual**
Accounting Services	no charge	
Legal	$5,000.00	
Construction Build-Out	$50,000.00	
Equipment	$53,500.00	
Furniture	$15,000.00	
Supplies	$5,000.00	
Advertising	$10,000.00	
General Overhead	$30,000.00	
	$168,500.00	
The advertising budget was only for start-up.		

Once you have identified all of the costs associated with running your practice, you will know the revenue needed to break even. This information is valuable as you begin to set prices and project your revenue. Very few businesses are able to cash flow within the first months of operation, but having a detailed budget in place that identifies your cash shortfalls up front is imperative as you look to secure financing.

With all that being said, my budgeting advice is to do three things. First, set a budget for your expenses that is reasonable to attain but does not short change expense categories like advertising that are a must. Secondly, budget for steady and attainable revenue growth. As I said before, revenue is difficult to project for a start-up practice, but it should steadily increase over time. Lastly, remember that a budget is just that. It is a moving target that is there to guide, not limit, your decisions.

Record Keeping

Set goals and track everything. Track expenses, number of appointments, help rate, average selling price, cost of goods sold, additional sales, and other key performance indicators that are crucial to your clinic's operation. Tracking does take time and it's easy to leave on the "to-do" list, but it is extremely important! You may deceive yourself from knowing where the business really stands if you do not stay current with your tracking.

Purchase an office management system that can track referral sources and results of marketing campaigns to save time so you won't have to do additional tracking. Print advertising has been one of my main referral sources thus far. That being said, some print pieces have had a greater response that others. Continue to use what works and always be looking for new things to try.

Building Relationships

Create and maintain strong relationships with manufacturers. Not only can manufacturers help with advertising campaign ideas, calendars, and costs; they are also an excellent resource when comparisons are needed. I had goals set based on what I thought was optimistic yet reasonable. Manufacturers have hard data of comparable clinics to relate to where you should be.

The early days in a new practice start slow so be productive with your time. Expose yourself and your practice to the community; get involved in a local organization and go out and meet your referral sources. I scheduled morning visits with physicians. You don't need much of their time, but it is important that they can put your name with your face. Take enough treats for the support staff and they will remember you, too!

Hiring

I have found the hiring process to be very difficult. It was something I had no experience with, but was given some great advice: "You can teach many skills but you cannot teach personality." So true! I did not advertise the positions but used word-of-mouth to find interest. Once you have wonderful employees, make sure they know you think they are wonderful and show them your appreciation.

Conclusion

I knew starting a private practice was the right decision for me. I love working with patients but I was not satisfied spending all of my time as a clinician. I wanted to know the ins and outs of everything! For me, the combination of time spent with patients and all of the other necessary duties required of a business owner are fulfilling. Starting a practice is not easy but when the circumstances are right, even a new graduate can be successful.

Elizabeth Falk Schwab, AuD is a native of Aberdeen, South Dakota, where she founded a private practice, Schwab Audiology, in September 2015. She earned her bachelor's of science in communication sciences and disorders and her doctorate of audiology from the University of South Dakota. She currently specializes in pediatric and adult diagnostic audiology and amplification.

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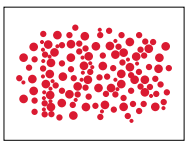

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The First Standards-Driven Certificate Training Program for Audiology Preceptors

BY MEAGAN LEWIS

The goal is to create a new cohort of highly skilled and technically excellent preceptors who are the best possible coaches, teachers, role models, evaluators, and mentors and are prepared to create the best possible field placement experiences for students.

American Board of Audiology®

CH-AP registration is available through eAudiology.org.

Audiology preceptors are responsible for more than one-fourth of an audiology student's educational experience. These dedicated professionals have taken on the role of coach, teacher, role model, mentor, and evaluator. To ensure the quality and scope of clinical education that students receive from preceptors, the American Board of Audiology (ABA) has created the Certificate Holder–Audiology Preceptor (CH-AP™) Training Program, which is designed for licensed audiologists and university faculty who provide audiological clinical instruction.

In 2012, the ABA Board of Governors approved the development of assessment-based certificate training programs, and, in 2014, approved the first certificate for audiology preceptors. At every step of research and development, the ABA has tapped into the expertise of audiologists at universities (professors and students), in clinical settings of all kinds and at every stage of their careers, as well as precepting subject-matter experts, to create a robust and richly detailed picture of the complexities of the preceptor role.

Preceptors provide an essential role in the audiology educational model. Not only do they provide more than a quarter of the student's total educational experiences, preceptors supervise nearly all of a student's clinical education experiences. A well-trained preceptor is essential to the audiology educational model to help students graduate as practice-ready clinicians prepared with the technical and professional skills they'll need to be successful.

Preceptors Serve in a Variety of Capacities

Coach—preceptors motivate students by asking powerful questions that are short, simple, and open-ended. They prompt self-assessment on the student's part and actively listen to understand the student's unique experiences, personality, and skill sets. Preceptors affirm and acknowledge positive behaviors, and help students identify gaps between what they know and what they *need* to know.

Teacher—preceptors share knowledge and expertise while managing learning opportunities. They engage students in dialogue, offer explanations, and answer questions. Preceptors work closely with audiology programs to help students close gaps so they can enter the field as fully prepared, independent practitioners.

Role Model—preceptors are highly influential and demonstrate what it means to be a professional. Students absorb and emulate the way a preceptor interacts with patients and their families, colleagues, support staff, and other health-care providers.

Evaluator—preceptors measure performance by assessing a student's *application* of knowledge and skills in the clinical setting, and are continuously evaluating a student's progress toward their learning goals.

Mentor—preceptors demonstrate an interest in the student's long-term professional development and success.

In addition to the critical roles preceptors play in the clinical setting, preceptors often are the last teachers a student has before graduation and are key participants in the final determination as to whether a student is truly ready for entry into the audiology profession.

A well-trained preceptor is essential to the audiology educational model to help students graduate as practice-ready clinicians prepared with the technical and professional skills they will need to be successful.

The CH-AP Program

The CH-AP is designed to prepare preceptors for all of those roles. Hundreds of audiologists have participated in our surveys, focus groups, and training module creation exercises.

CH-AP is a voluntary training certificate program with four modules, developed by audiology subject-matter experts who volunteered to serve on the CH-AP working group. Facilitation of the development was provided by Pat Muenzen, director of research programs for the Professional Exam Service (ProExam), with development expertise from Torryn P. Brazell, MS, CAE, managing director of the American Board of Audiology, and LiLi Taylor, MA, curriculum development consultant.

The subject-matter experts who so generously shared their knowledge, vision, and expertise included the following:

- Mindy K. Brudereck, AuD, clinical audiologist. Dr. Brudereck owns a private practice where she provides audiology services to patients of all ages. She has served as a preceptor for the past 12 years.

- Christopher Focht, AuD, clinical audiologist. Dr. Focht owned a private practice for 20 years before joining the Hearing and Speech Center, where he has been providing clinical services to adolescents and adults since 2006. He also serves as a lecturer in the Communicative Disorders Department at San Francisco State University.

- Jonette B. Owen, AuD, assistant dean for practice and assessment of audiologic medicine; Osborne College of Audiology, Salus University. Dr. Owen has served as a clinical audiologist in multiple settings and has a specialty in diagnostics, amplification, and aural rehabilitation, in addition to precepting students in the on-campus clinic.

- Tricia Sheehan Scaglione, AuD, assistant professor, clinical audiologist, University of Miami Health System, Miller School of Medicine. Dr. Scaglione is also adjunct faculty member of Nova Southeastern University.

- Virginia Ramachandran, AuD, PhD, education and training specialist, Oticon. Dr. Ramachandran was until recently the senior staff audiologist and research coordinator in the Division of Audiology, Department of Otolaryngology—Head and Neck Surgery at Henry Ford Hospital.

- Gail Whitelaw, PhD, audiology faculty member for The Ohio State Leadership Education in Neurodevelopmental and other Disorders (LEND) program, housed at the Nisonger Center. Dr. Whitelaw also is the director of clinical instruction and research in the Department of Speech and Hearing Science at The Ohio State University and has been a clinical supervisor/preceptor for more than 30 years. She estimates that she has precepted/supervised more than 250 students during that time.

The CH-AP is aimed at creating a well-rounded, knowledge-based precepting experience to provide critically important opportunities for students to apply classroom learning in authentic clinical settings. It also will help facilitate the student's transition from novice clinician to competent, independent professional. Successful completion of four modules, all of which are accessible through the American Academy of Audiology eAudiology platform, is required to earn the CH-AP certificate:

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Module 1: Role of the Preceptor in a Clinical Environment (2 hours)

- Historical context for and current role of preceptors in audiology education
- Roles and interactions of stakeholders in the precepting process
- Accrediting bodies in audiology and their requirements for training programs
- Professional responsibilities and obligations of a preceptor
- Attributes of an effective preceptor
- Activities, processes, and resources needed to bring students into a clinical placement
- Legal obligations and considerations for preceptors

Module 2: Clinical Dynamics—Assessment and Performance (2 hours)

- Role of assessments in clinical education
- Elements of the assessment cycle
- Function and benefits of formative assessment
- Techniques to conduct a student's initial diagnostic assessment
- Setting realistic goals for the clinical experience
- Formulating effective learning objectives
- Commonly used tools for assessing students clinical performance
- Methods for guiding students through the self-reflection process
- Effective feedback—giving it, getting it, and using it
- Summative evaluation

Module 3: Creating Effective Learning Programs (2 hours)

- Adult teaching and learning principles
- Models of learning
- Learning styles
- Effective instructional strategies for the clinical setting
- Adapting instructional strategy and tactics to match the student's developmental level and preferred learning style
- Identifying opportunities for teachable moments in the clinical environment.
- Guiding independent learning

Module 4: Legal, Ethical, and Professional Considerations (2 hours)

- Professional ethics in precepting
- Confidentiality issues
- Basic human resource issues
- Licensure and certification
- Professional boundaries for student-preceptor relationships
- Strategies for managing exceptional situations and negotiating "difficult conversations"
- Appropriate duties and assignments for students and preceptors
- Billing and coding issues related to precepting

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Each training module includes a *toolbox* with additional resources to enhance content and instruction. Sample contents include the following:

- Clinical Site Readiness Assessment
- Student Recruitment and Selection Guide
- Student Orientation Manual
- FERPA Resources
- HIPAA Overview
- Links to training videos and free training programs offered by DOL, DOE, and CMMS
- Goal-Setting Worksheet
- Blooms Taxonomy Guide
- Initial Student Clinical Assessment Guide
- Medicare Manual

The CH-AP program has been developed from and is aligned with ASTM E2659 Accreditation Standards because these standards provide guidelines for quality program development and administration, distinguish qualified workers with industry-recognized credentials, and differentiate certificate programs from non-assessment-based programs that award "certificates of attendance" or "certificates of participation." ATSM is an international standards organization that develops and publishes voluntary consensus technical standards and is recognized as the leader in accredited credential standards.

As we move forward, we will seek ASTM accreditation for the CH-AP training program as a best practice as an assessment-based certificate program that is relevant to the audiology profession and that assesses participants to confirm that the learner has mastered the material taught.

"We chose to create a knowledge-based certification program because training and assessments are tightly linked to the CH-AP program's learning objectives," Torryn Brazell, ABA managing director, explained. "Assessments ensure that CH-AP certificate holders have been exposed to and understand the knowledge base and core competencies required to precept effectively and create a well-rounded experience for future audiologists."

Registration for CH-AP is open to licensed audiologists and university professors and is accessible through the eAudiology platform. Module 1: Role of the Preceptor in a Clinical Environment must be successfully completed first before an audiologist can access any of the other modules. Modules 2, 3, and 4 may be taken in any order once an audiologist has taken and passed the Module 1 assessment. AuD students may also register for and audit the courses, but may not apply for the CH-AP certificate until after becoming a licensed practicing audiologist.

Once an audiologist has successfully completed the four modules and earned the CH-AP credential, the ABA will add his or her name to the CH-AP National Registry, which is open to the public and students to search for preceptors who hold the credential.

The CH-AP credential is valid for five years, and will require renewal at the end of that time so that the ABA can ensure that the designation reflects current and best practices in audiology, which change over time. When you earn the ABA CH-AP certificate, you show your mastery of the preceptor body of knowledge and your commitment to the audiology profession.

The ABA's goal is to create a new cohort of highly skilled and technically excellent preceptors who are the best possible coaches, teachers, role models, evaluators, and mentors and are prepared to create the best possible field placement experiences for students.

By doing so, we hope to assure that audiology students are being placed with skilled preceptors and are receiving training that conforms to a standard that has been created by and for audiologists. Future patients of these students will be assured that the audiologist they choose has received the best training possible today.

Meagan P. Lewis, AuD, Board Certified in Audiology, CISC, is chair of the American Board of Audiology Board of Governors, and is clinical manager of audiology at Wake Forest Baptist Medical Center in Winston-Salem, North Carolina.

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The Finer Points of (DPOAE) Fine Structure

BY CHRISTOPHER SPANKOVICH AND SUMITRAJIT DHAR

Research suggests that measuring fine structure may allow earlier identification of cochlear pathology and enable separately evaluating different OAE sources from one measurement.

Otoacoustic emissions (OAEs) are a widely used objective measure of cochlear function in general, and outer hair cell function in particular. These "emissions" represent a natural byproduct of the active cochlear mechanisms that are collectively known as the cochlear amplifier. Although they are generated by outer hair cells, recording them in the ear canal is additionally dependent on the status and integrity of the external and middle ears, as these structures serve as the essential passageway of the stimuli into the cochlea and the emissions out to the ear canal.

Nonetheless, OAEs are not a measure of hearing as essential parts of the hearing mechanism, such as inner hair cells, because they are not involved in their generation or transmission. The emissions recorded in the ear canal can also represent cochlear function over a fairly broad region depending on the stimulus levels used. Did you know that even distortion product otoacoustic emissions recorded at high stimulus levels could reflect cochlear health distributed to regions greater than an octave? (Gorga et al, 2011). Consequently, the strength of the correlation between emission levels and hearing thresholds is rather limited (Kemp, 1997).

While outer hair cells (OHCs) are conveniently labeled as the protagonists in the generation of OAEs, the integrity of the hydromechanics of the cochlea, the health of the supporting cells, and the electro-chemical gradients in the cochlea can and do affect them as well. While much has been learned about the mechanical and cellular bases of OAEs in the decades since their discovery, many mysteries regarding their generation and propagation remain unresolved. In general, our understanding of OAEs has evolved with our understanding of cochlear mechanics. These two areas of study will remain connected in the future.

Many complexities regarding OAEs have been uncovered in the past 37 years. One important and fundamental property of OAEs that affect their clinical application is the fact that OAEs are generated by a combination of many sources distributed over a broad region of the cochlea, especially so for high stimulation levels. Thus, the OAEs recorded in the ear canal are not representative of the health of a small, focused region of the cochlea, but rather are the result of complex interactions between multiple sources distributed across a region of the cochlea. Needless to say, methods of measurement under active development that limit the generation of OAEs are of great scientific and clinical interest.

The reader is likely familiar with the many types of OAEs including distortion product OAEs (DPOAEs), transient (or click-evoked) OAEs (TEOAEs), spontaneous OAEs

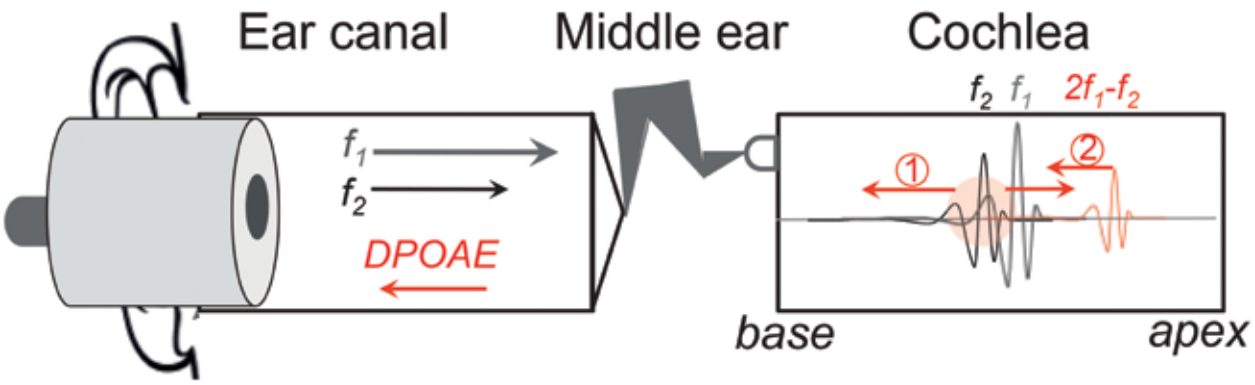
(SOAEs), and stimulus frequency OAEs (SFOAEs). Other variations exist, but the important point is that OAEs can be generated by a variety of methods. Are all of these different OAE types created equal? Do they all reflect the same cochlear properties and pathologies? The simple answer is no. Modern OAE theory attempts to parse the subtle mechanistic differences between different OAE types and we take you on a journey through this maze below. Let us start by taking a walk down the pathway that OAEs travel.

The Path Traveled

OAEs are most commonly measured clinically through the air conduction pathway, where sound stimulus is delivered to the external ear through a receiver(s) housed in a probe that also houses the microphone to record the response. OAEs can be recorded after stimulating the cochlea with bone conduction in laboratories (Purcell et al, 1998; Rossi and Solero, 1988). However, the conventional advantage of bone-conducted stimulation of the cochlea to bypass a faulty middle ear is defeated by the need of the OAEs to travel back to the ear canal through the middle ear. Thus, clinical applications of OAEs obtained through bone-conduction stimulation are not immediately obvious. OAE stimuli travel into the cochlea in the exact same manner as any other air conducted sound, first as a sound wave in the ear canal, then as a mechanical displacement through the middle ear, and finally as a hydrodynamic wave in the cochlea. The pressure differential between the scala vestibuli and tympani created at the stapes-oval window articulation, along with the graded properties of the basilar membrane, guide the traveling waves created by the stimulus energy to their respective characteristic frequency locations (Nakajima et al, 2009). Now the cochlear amplifier takes over and OAEs are generated as one of the consequences of these active processes.

Although it is clear that the active cochlear processes are essential for the generation of OAEs, their exact role remains unclear. Even more complicated is the precise nature of the generation mechanisms of different emission types. Perhaps the best avenue to discuss these complexities is through the lens of DPOAEs. Let's focus on the DPOAE at the frequency *2f1-f2*; the principles evident for this DPOAE can easily be generalized for other DPOAEs as well as other OAE types. As shown in FIGURE 1, the characteristic frequency region for *2f1-f2* is apical to that for the two stimulus tones. Nonlinearities of the outer hair cells in the region of the basilar membrane stimulated by both *f1* and *f2* are the primary generators of DPOAE energy (LABELED 1 IN FIGURE 1).

FIGURE 1. Illustration of sources and exit strategy of a DPOAE.



The f1 and f2 are played simultaneously to the external ear. The signals are transmitted via the middle ear to the cochlea initiating forward traveling waves (gray=f1 and black=f2). The intermodulation distortion (in pink circle) creates a reverse traveling wave back to the basal portion of the cochlea (1=distortion source) and a second forward traveling wave that reflects off areas of resonance and impedance, the largest being the 2f1-f2 region (2=reflection source). Another theory suggests that a fast wave propagated through the cochlear fluids dominants. Figure courtesy James B. Dewey, PhD.

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In the case of the DPOAE at *2f1-f2*, a portion of the emission energy is returned to the ear canal from this overlap region, while another portion succumbs to the natural mechanical gradient of the cochlear partition and travels apically towards the *2f1-f2* characteristic frequency place (LABELED 2 IN FIGURE 1). This second packet of OAE energy is then returned from the DPOAE characteristic frequency place to the ear canal. Here we encounter two issues of intense debate.

- Does the OAE energy propagate backward out of the cochlea in exactly the same way that waves travels forward inside the cochlea?

- Are the mechanisms for generating OAEs at the overlap between the stimulus tone traveling waves and the DPOAE characteristic frequency place identical?

Let's answer these in turn.

Although it is clear that the active cochlear processes are essential for the generation of OAEs, their exact role remains unclear.

So how do OAEs propagate toward the base and ultimately exit the cochlea? At least two propagation modes are theoretically possible: (1) reverse traveling wave (slow wave) and (2) fluid displacement (fast wave). The reverse traveling wave theory suggests that OAEs travel out of the cochlea in the same physical manner that energy travels into the cochlea, only backward. This mode appears to be supported by evidence from OAE phase measurements (Shera and Guinan, 1999; Talmadge et al, 1999). The fluid displacement theory suggests that the primary path is through displacement of cochlear fluids back toward the basal region of the cochlea. Indeed, some direct measurements within the cochlea appear to support only this mode and direct evidence of a reverse traveling wave is hard to find (He et al, 2008; Ren et al, 2006). Which of these two is the only, or the dominant, mechanism of OAE propagation is greatly debated. It is likely that the actual mode of propagation is a combination of these modes, where fluid displacements and motion of the basilar membrane (and other membranes, e.g., Ressiner's Membrane) are both interdependent pathways.

Are all OAEs produced by the same mechanism? The specific question, in the case of DPOAEs, becomes whether the first part of the DPOAE generated in the overlap region between the stimulus-related traveling waves and the second part returned to the ear canal from the DPOAE characteristic frequency region are generated by the

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* Study conducted at the University of Northern Colorado, 2015, examined the effectiveness of the new features of primax by collecting and analyzing ongoing EEG data while subjects performed speech testing. For both primax features SpeechMaster and EchoShield, the objective brain behavior measures revealed a significant reduction in listening effort when the feature was activated.

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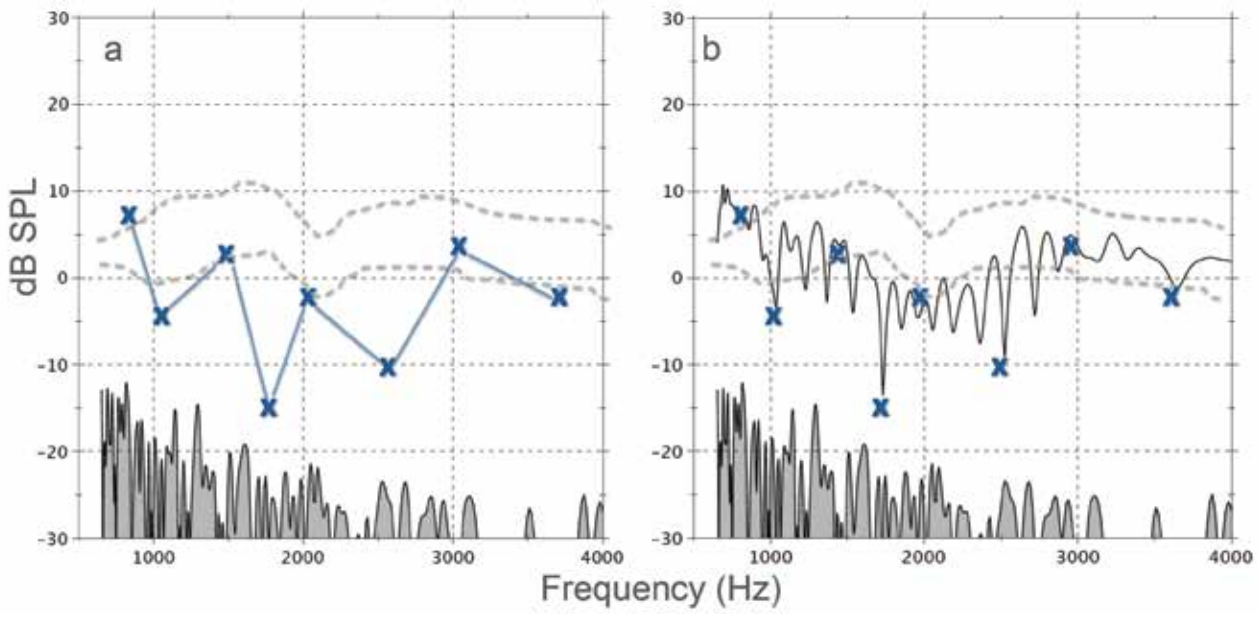
same mechanism. The short answer is no and the long answer is not so short. We take a deeper dive into these details and discuss how the interaction of these two parts of the DPOAE creates constructive and destructive interference effects resulting in quasi-period peaks and valleys in amplitude referred to as fine structure.

Source of Course

The source or mechanism of generation of OAEs provides an alternate classification system for DPOAEs in contrast to the traditional classification based on the stimulus (e.g., transient OAE, i.e., a transient stimulus such as a click) and response (e.g., distortion product OAE, i.e., the intermodulation distortion created). Currently two distinct sources/mechanisms are recognized: (1) reflections/retransmissions from random impedance perturbations fixed in place along the length of the basilar membrane and (2) distortion energy generated due to hair cell nonlinearities fixed to the stimulus wave. The distinction between these two mechanisms/sources was initially recognized by Kemp and Brown (1983) who coined the terms place- and wave-fixed emissions. This general model has since been modified and made more specific. The more modern treatment is provided by Shera and Guinan (1999), who segregate the two mechanisms as coherent linear reflections and nonlinear distortions. There is some correspondence between the new and the traditional

FIGURE 2. DPOAEgram: Pathology or fine structure.



(a) DPOAEgram of the left ear reveals areas with reduced responses suggesting possible compromise of cochlear function. (b) Fine structure overlaid on responses explains that areas of "reduced response" are simply a consequence of phase characteristics of OAE source interaction.

classification systems. In their purest form, spontaneous, transient, and stimulus-frequency emissions are examples of reflection emissions. However, the main packet of DPOAE energy from the overlap region of the primaries is an example of distortion emission. When OAEs are measured clinically, they most likely represent a mix of these two emission types unless great care is taken to use ideal and well-controlled stimulus conditions.

Reflection Versus Distortion

Let us return to the case of DPOAEs as they contain both emission types: nonlinear distortion from the overlap between the stimulus driven traveling waves and linear reflection from the DPOAE characteristic frequency region (at least for *2f1-f2*), as seen in FIGURE 1. The locus of generation of the distortion portion (LABELED 1 IN FIGURE 1) is at the greatest overlap between the stimulus waves, usually at the geometric mean (when L1=L2) or near the *f2* region (when L1 is greater than L2). The intermodulation distortion energy is created by the nonlinearities in the outer hair cells. This energy travels in two directions: (1) toward the base of the cochlea and (2) apically toward its characteristic frequency region. This forward-traveling wave is then reflected back from impedance perturbations near the DPOAE characteristic frequency region (LABELED 2 IN FIG 1). It is interesting and vitally important to note that these two packets of energy, due to two different mechanisms from two different regions of the cochlea, are both at the frequency *2f1-f2*. The differences in their generation mechanism renders them very different phase characteristics, as a function of frequency, and they interfere constructively and destructively with each other giving the ear canal DPOAE amplitude a pattern of alternating peaks and valleys.

Fine Structure

Our two-source model gives us two components exiting the cochlea at different phases. The nonlinear source being fixed to the stimulus has a phase characteristic that is essentially independent of the stimulus frequency. In other words, as you change the frequency of the stimulus, you are also changing the source since the two are fixed. However, the linear reflection source is fixed in place not the stimulus, so as you change the frequency of the stimulus the relationship between the stimulus and the reflector changes: phase is not constant. Since the evoked OAE, DPOAE in this case has both the nonlinear distortion and the linear reflection sources, both contribute to the response measured in the ear canal. However, since the two have differential phase characteristics, as you measure the response across a range of frequencies these parts of the DPOAE go in and out of phase resulting in peaks and valleys in the DPOAE response. This is fine structure.

Fine, Who Cares?

Research suggests that measuring fine structure may allow earlier identification of cochlear pathology and enable the possibility of separately evaluating different OAE sources from one measurement (Rao and Long, 2011). Signal processing methods to separate the two OAE sources are routinely used in research and are being fine tuned for clinical use. The hope is that different OAE types may be differentially sensitive to different pathologies. Thus independent evaluation of the two emission mechanisms will provide deeper insight into cochlear pathologies.

In FIGURE 2, we can see an example of a DP-gram, i.e., the visual representation of the DPOAE response as relative to the noise floor. Sporadic instances of DPOAE amplitude below the normative range is seen in this example (FIGURE 2A). Is this localized damage? Probably not. If we overlay the fine structure (FIGURE 2B) we see that we simply sampled a valley in the fine structure. Moving a few Hz in either direction would restore the DPOAE amplitude to within normal range, in this case.

How Can I Be Fine?

DPOAE fine structure is measured identically to any other clinical DPOAE measurement, just in finer frequency steps. However, this adds to test time significantly. Currently most audiologists measure DPOAEs at two to four frequency points per octave. Now imagine measuring 48 frequency points per octave. That could take some time! Currently, most commercial DPOAE systems will only allow the measurement of eight to 12 frequency points per octave. However, recent research by Long, Talmadge, and Lee (2008) has led to the development of a novel method to efficiently capture fine structure. Rather than relying on fixed-frequency primary tones, the "sweep method" utilizes continuously sweeping primaries, cutting back on test time while capturing DPOAE fine structure in all its glory. The day is not far away when all DPOAE measurement systems will have the capability. We can hope that with these improved capabilities will come significantly deeper clinical utility for OAEs.

Christopher Spankovich, AuD, PhD, is an associate professor in the Department of Otolaryngology and Communicative Sciences at University of Mississippi Medical Center in Jackson, Mississippi.

Sumitrajit Dhar, PhD, is the department chair and professor in communication sciences and disorders at Northwestern University in Evanston, Illinois.

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PEOPLE FIRST

Project Amazon: AN INTERVIEW

BY KIMBERLY BARRY AND ANNA JILLA

Since 2012, the American Academy of Audiology Foundation has partnered with the Oticon Hearing Foundation to send one audiologist and one audiology student to Brazil, to provide audiological care to children and adults.

THE PROJECT AMAZON MISSION

is sponsored by the Oticon Hearing Foundation to bring sustainable hearing care to the residents of the remote, riverfront communities that surround the Oticon Clinic in Parintins, Brazil. Established in 2011, the Oticon Hearing Foundation aims to foster a "community of caring" among hearing care professionals that empowers them to bring sustainable hearing care to in-need people and communities around the world. The Oticon Hearing Foundation accepts donations of gently used Oticon hearing instruments that are then reconditioned and provided to hearing care professionals who volunteer for non-profit humanitarian missions. The Foundation receives its funding from its parent company, Oticon, Inc., William Demant Holding (WDH), and Oticon-related companies, in addition to other organizations and individuals. The goal is to elevate awareness of the effect of hearing loss on the quality of peoples' lives regardless of where they live and work.

The Project Amazon is a competitive application process with priority given to applicants with extensive hearing aid fitting experience (adult and pediatric), and who have a demonstrated commitment to audiology-related service work with local, national, and/or international organizations. The AAA Foundation is pleased to announce that the Oticon Hearing Foundation will support another mission trip for 2016. Applications are due June 15 and can be found at Oticon Hearing Foundation's Web site (www.oticonhearingfoundation.com).

Opposite: Prepping to observe cochlear implant surgery.

Top left: Dr. Lena Kyman and AuD student Mia Canale (and their translator) with a young patient who just received hearing aids.

Top right: Dr. Lena Kyman and AuD student Mia Canale with an older patient who received her first-ever hearing aid at the clinic in Parintins.

WE FIT THIS 95-YEAR-OLD WOMAN WITH HEARING AIDS AND HER PERSONALITY DID A TOTAL 180. SHE STARTED MAKING JOKES AND TEASING OUR TRANSLATOR. HER DAUGHTER WAS CRYING. IT WAS LIKE WE GAVE THIS WOMAN'S PERSONALITY BACK TO HER.

Lena Kyman, AuD, of ENT and Audiology Associates in Raleigh, North Carolina, and Mia Canale, an AuD student at the University at Buffalo, SUNY, were selected to travel to Parintins in November 2015. Parintins is a city of approximately 109,000 in the eastern part of the Amazonas state, Brazil. The city is located on Tupinambarana Island in the Amazon River. Parintins receives over half its income for the year during a three-day Boi Bumba Festival; only Carnival in Rio de Janeiro draws more tourists.

Recently, Anna Jilla, Student Academy of Audiology treasurer, and Kimberly Barry, AAA Foundation trustee, interviewed Dr. Kyman and Cancale about their experiences with Project Amazon.

KB and AJ: Why did you apply to Project Amazon?
LK: I've been passionate about volunteering internationally for years. As soon as I heard about Project Amazon, I knew I had to go. I actually applied the previous year and was not accepted. I felt devastated, but perseverance prevailed, so I applied again and was accepted.

MC: I was browsing through scholarships and opportunities on the AAA Foundation Web site, and it jumped out at me. With this being an international humanitarian experience, I saw the opportunity to do some crazy awesome audiology. I thought, "Hey I can do this. I'm interested in this." And I just went for it!

KB and AJ: Have you volunteered for other humanitarian projects?
MC: I haven't done a mission trip quite like this. This was my first time volunteering internationally. I've done some volunteering locally with Buffalo City Mission and Habitat for Humanity. But, Project Amazon was the first volunteering that I've done on a humanitarian trip abroad.

LK: Yes, when I was in college, I spent one summer working on a farm in Costa Rica. In between college and graduate school, I spent a summer working on an orphan bear refuge.

KB: I apologize, but I must interrupt. Did you say orphan bear refuge?
LK: Yes, an orphan bear refuge in Croatia. Most people do a double take when I mention that.

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KB: Have you volunteered for any audiology humanitarian mission prior to Project Amazon?
LK: In graduate school, I volunteered for an audiology humanitarian trip to Guatemala. So, yes, it's a trend and it's a passion. I really enjoy traveling and volunteering. You gain more from those experiences than what you give. You learn from the people and the culture. It's such a great way to experience the world.

KB and AJ: What made you want to travel to such a remote location?
LK: I love sleeping on the ground and eating home cooked meals. I'd much rather stay somewhere remote and rural than stay in a hotel.

MC: Going to the Amazon just seemed like the coolest challenge. I wasn't worried about it being remote, or not having Internet. My parents were more concerned about the mosquitoes than anything else. I'm just grateful for opportunities like this to bring hearing health-care access to those who need it most, along with seeing different health care delivery models and to learn from people that are different from me.

KB: Can you tell us about the area?
LK: Parintins is on the Amazon River and it is accessible by boat or by air. We wanted the entire Amazon experience, so we took a boat from Manaus to Parintins. Manaus is the capital city of the state of the Amazonas. It took 16 hours by boat to get to Parintins.

Parintins is famous for a very large annual folklore festival, called the Boi Bumba. There are elaborate costumes, parades with floats, singing, and dancing. There is also a competition during the festival and two teams (red and blue) compete. During our stay, we toured the stadium where the festival occurs. I'd love to go back during the festival.

MC: We flew into Manaus, which is the capitol of the Amazonas state in Brazil. Even with it being the capitol city, Manaus was not as developed as what one would have expected. On our second day, we jumped at the chance to take a very Brazilian, 16-hour boat ride to Parintins, where the clinic was located. Parantins was very small and basic, but so beautiful being right by the river. Pictures can describe it better than I can. This small city was such an interesting place to be.

AJ: Coming from life in New York State, how was the pace of life different?
MC: The pace of life was a lot slower and relaxed. They realize that the weather is hot, and that people need time to rest. I'm caught in the graduate school, type-A mindset, that is "go, go, go." When I went there, it was like "Wow!" I can do all of this audiology work, and I'm breathing a little bit more. I was really able to take the experience all in.

What was a typical day like at the Parintins clinic?
LK: First, let me tell you a little about the clinic. There was a small room with a tiny sound booth, a table with two chairs, a bedroom with bunkbeds, and a bathroom. That's it! Mia and I stayed in the bedroom, so we both worked and slept at the clinic.

Every day we woke up early and Luh, the cook, prepared the most amazing meals for us. We met with our translator, ate breakfast, and then immediately started seeing patients who were lined up outside every morning. There wasn't a set schedule. We saw patients all day. There was a very diverse range of patients, from the three-year-old who is having difficulty with language, to the 40-year-old who has never heard a sound, to the elderly. We didn't stop until we had seen everyone. No one was turned away. The waiting room is an outdoor courtyard. Lots of families came to the clinic. One family traveled 10 hours by boat to get there. We saw many multi-generational families. We primarily did hearing tests, fit hearing aids, and did cerumen removal. We also saw some dizzy patients, performed Dix Hallpikes, and even treated one with the Epley maneuver.

MC: The clinic was built into the place we stayed. Patients would start lining up outside our building before 7:00 am. They'd come not just from Parintins, but from all over the Amazonas area. We would see patients all day from 8:00 am until around 7:00 pm. We tested patients, fit hearing aids, observed cochlear implant surgeries, and saw some vestibular patients. We even did an Epley on the outside dining room table!

AJ: You must have been pretty close with your preceptor, Dr. Kyman. How was that different from your previous clinical supervision?
MC: There was instant bonding between Dr. Kyman and me. We started off with a 16-hour boat ride, so how could we not bond? We were in close quarters and constantly looked to each other for support because we were pretty much the only English-speaking people around other than our translator. I couldn't have asked for a better supervisor. I felt so comfortable with her. I could ask her any question, and could dialog about our patients.

AJ: So it might be a good team-building activity to introduce a mandatory supervisor-supervisee 16-hour boat ride as a routine part of clinical training for all AuD students. Out of everything that happened, what was the stand-out moment for you?
MC: There was a 95-year-old woman who came in with her daughter. This lady was really quiet and timid. Her daughter led the whole conversation. We fit this 95-year-old woman with hearing aids and her personality did a total 180. She started making jokes and teasing our translator. Her daughter was crying. It was like we gave this woman's personality back to her. They were just so grateful for everything we did, and gave us huge hugs afterward. It was a great reminder as to why I wanted to practice audiology in the first place.

KB: How long were you there?
LK: We were there just under two weeks. While we were in Paritins, ENT surgeons from Brazil were there to do cochlear implant surgeries on four patients. We were able to observe the surgery and talk to the Brazilian audiologist who was performing intraoperative monitoring for the surgery.

AJ: I know it's easy for AuD students to lose perspective while they're trying to survive and finish school. That's so wonderful to have an opportunity like this to rekindle your audiology fire! Do you think you'd do it again? Or do something similar?
MC: Oh yes! I'd love to go back to Viva o Som and help out. Whether I'm still a student or a professional, I'd still like to be a part of humanitarian trips like this one. I am so happy and honored to have gotten the experience to do service work in my chosen field, and to learn about a new culture. I am so grateful to the Oticon Hearing Foundation and AAA Foundation for providing students with this opportunity.

AJ: Well Mia, thank you for your time! I realize that as a busy AuD student it's hard to take off time like that. The work that you guys did down there is invaluable. You've done so well for the patients and the profession! Thank you!

KB: Where are you off to next?
LK: I've been talking to an organization that does volunteer work in the Dominican Republic. Actually, I'm up for any opportunity I can find. I didn't mention that I was able to return to Guatemala last summer and would also love to continue to volunteer there. Global audiology is only valuable when you set up something sustainable. If you know of anyone who needs a person to travel, I'm that person!

KB: I've always wanted to do international volunteer work, but have never taken the leap. You are an inspiration! Thank you for taking time out of your busy day to talk to me about your trip.

Anna Jilla is an AuD student at University of Oklahoma Health Sciences Center, and serves as SAA treasurer and AAAF Liaison.

Kimberly Barry, AuD, is a trustee of the American Academy of Audiology Foundation, and chief of audiology and speech pathology service at Charlie Norwood Veterans Administration Medical Center in Augusta, Georgia.

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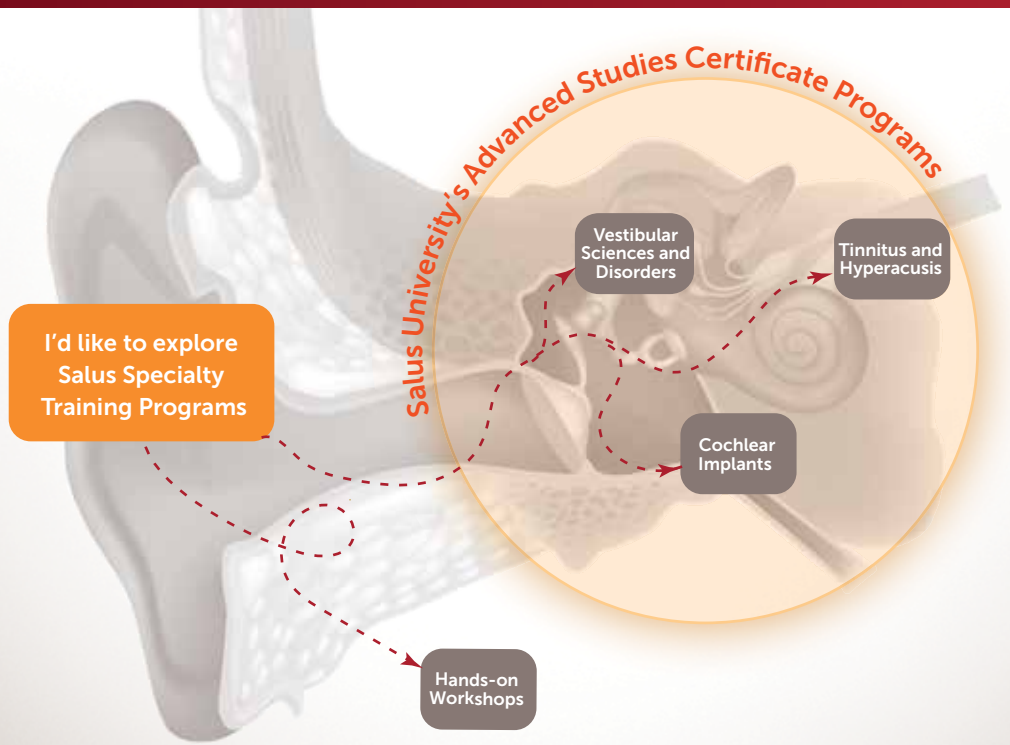

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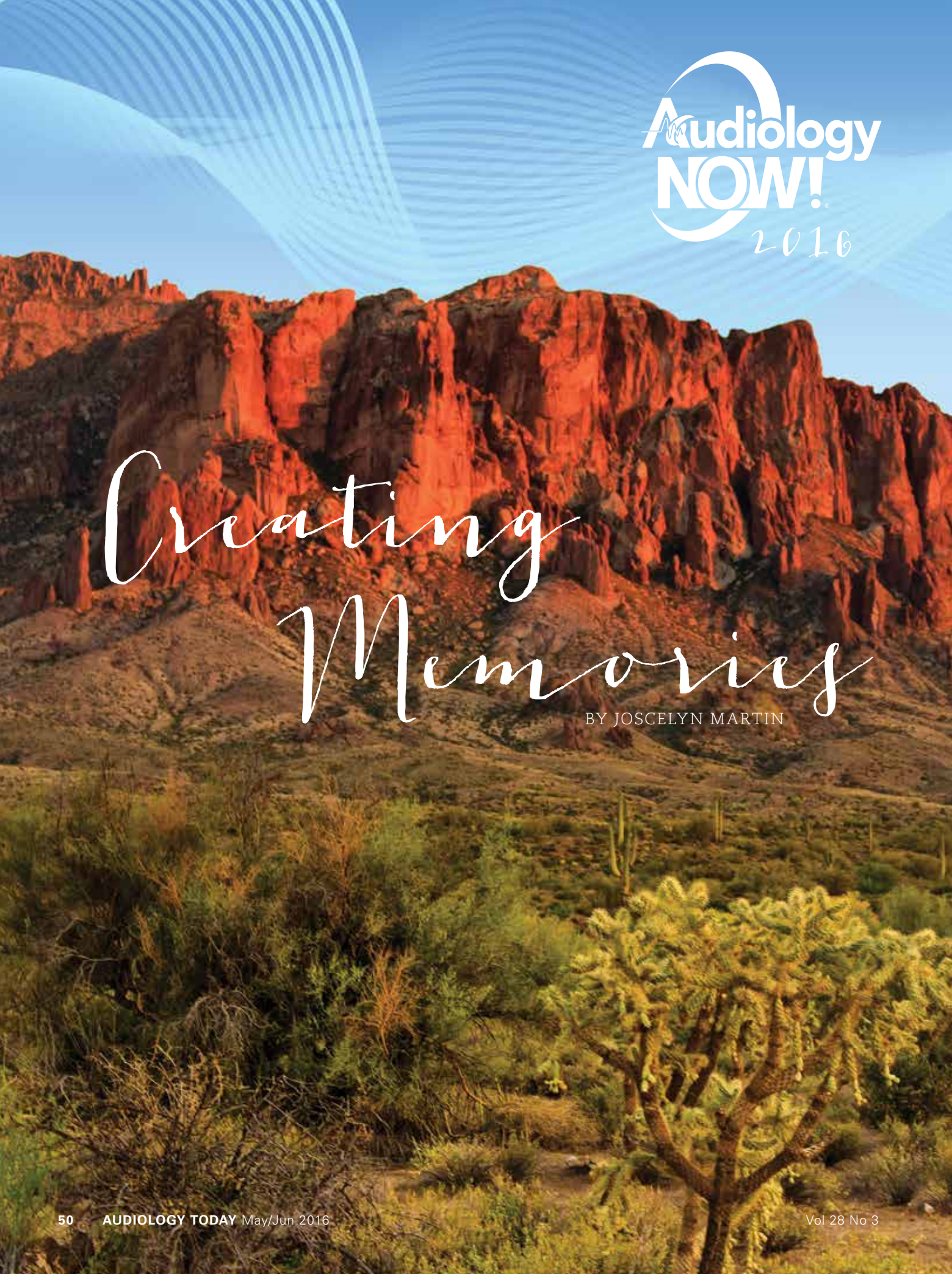

Creating Memories

BY JOSCELYN MARTIN

#audiologynow16

Phoenix AZ

provided a serene backdrop for an exciting AudiologyNOW!® 2016 that attendees won't soon forget. Attendees navigated the Phoenix Convention Center easily, finding registration, Academy Central, posters, and the exhibit hall all on one floor, together with the classrooms a mere escalator ride away. Preparations began well before we all arrived in Phoenix, and by Tuesday, everything was in place for all to enjoy a fantastic learning and networking experience.

Wednesday brought many exciting events. One of those was the Academy Research Conference. Chaired by Dr. Frank Musiek, this full-day conference focused on central auditory processing disorder, with 260 in attendance! Another event that day was the fourth annual Student Academy of Audiology (SAA) conference, which experienced a record number of attendees—around 175 students! Learning Labs were well attended, including an off-site neuroanatomy lab that afforded attendees the opportunity to learn from staff and students at AT Still University. Industry Symposia debuted on Wednesday afternoon this year, and attendees enjoyed three-hour long deeper dives into the latest products, services, and technology developments by some of the Academy's industry partners to include CareCredit, ReSound, and Starkey Hearing Technologies.

Wednesday evening also kept everyone busy. Celebrate Audiology (sponsored in part by Oticon) drew people to the exhibit hall, where they enjoyed delicious local food and entertainment, and had time to meet with and learn from all of the exhibitors. The AAA Foundation Happy Hour Benefit (philanthropic support provided in part by Phonak, LLC) was outdoors and afforded attendees the chance to relax with fellow Foundation supporters in a setting that provided great views of the Phoenix downtown area. Many attendees kept going late into the evening with the SAA Cheers for Ears Fundraiser (sponsored in part by Oticon, Phonak, LLC, ReSound, and Starkey Hearing Technologies).

The General Assembly (sponsored in part by Signia) on Thursday morning was an energizing part of the meeting. The Audiology Chorus led off the assembly with their inspiring rendition of the National Anthem. Current president Dr. Larry Eng thanked academy volunteers and presented Presidential awards to Dr. Marcia Raggio, Dr. June Uyehara Isono, Dr. Bopanna Ballachanda, and Ms. Kate Thomas. President-Elect Dr. Ian Windmill looked to the future in his address. As program chair, I made sure to recognize the hard work of over 100 volunteer members of the program committee. Then we heard from our keynote presenter Orna Drawas. Ms. Drawas, author of the book *Perform Like a Rock Star and Still Have Time for Lunch*, shared her engaging message for getting the most out of ourselves and our colleagues in order to be rock stars in our own right.

Two separate poster sessions (half on Thursday and the other half on Friday) allowed for nearly 300 posters to be shared at the conference. James and Susan Jerger Awards for Excellence in Student Research were presented to six students for their posters. Additionally, a ribbon

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AMERICAN ACADEMY OF AUDIOLOGY

was given to an outstanding professional poster in each of the fifteen poster categories.

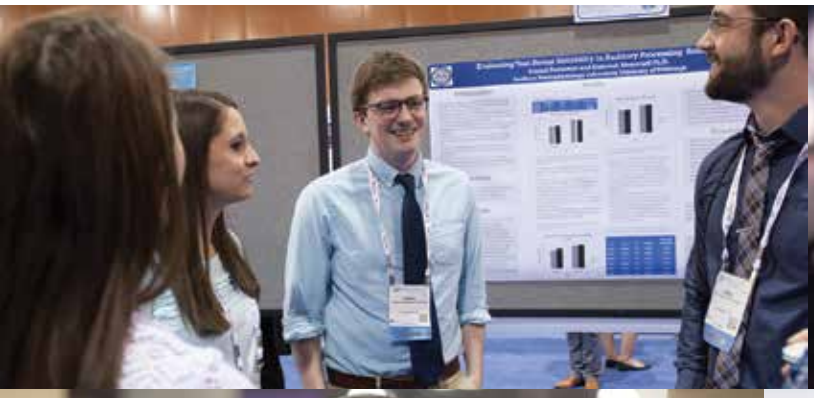
The exhibit hall had a great flow to it and included a new feature this year. A Product Theater Showcase adorned the rear wall of the hall and provided a learning space for lunchtime CEUs in the exhibit hall. An 11:30 am–1:00 pm event both Thursday and Friday allowed attendees to enjoy their lunches while listening to exhibitors share information about novel technologies and new products. A PhD Programs Fair and, new this year, a State Fair, were events held in the attendee lounge to allow those interested to explore PhD programs and state associations. There were also more Industry Update rooms for additional education inside of the exhibit hall.

The SAA Programs Committee coordinated a Hot Topics, Cold Drinks series that included question-and-answer sessions with speakers. They created a scavenger hunt designed to engage students with exhibitors and organized several other events, including the SAA Mix and Mingle, an externship panel presentation, and an engaging Praxis Bowl.

On Thursday afternoon, a special session invited the 2016 Academy Honorees to share their personal stories of success, their achievements, and lessons learned along the way. Review this year's award winners on the Academy Web site, www.audiology.org, search keyword "honors." Later that evening at the headquarter hotel, attendees enjoyed an ABA Certificant Mixer (sponsored in part by Sprint CapTel), the Honors and Awards Banquet (sponsored in part by Phonak, LLC), and finally an International Reception.

The AAA Foundation's Auction 4 Audiology featured some very unique items and raised over $19,000 to support research, education, and public awareness in audiology and hearing science. The Friday evening event brought the focus to the Children's Museum of Phoenix, where attendees experienced a Professional Play Date. Music, dancing, food, and beverage were enjoyed by nearly 500 people. They also had the opportunity to enjoy some of the museum's exhibits.

Throughout the three-and-a-half days of the conference, Featured Sessions, Learning Modules, Research Podiums, and Exhibitor Courses provided ongoing opportunities to learn from incredible presenters from around the world. HearCareers included a space dedicated to helping potential employers and those seeking employment connect with each other and offered meeting room space to conduct interviews. The DiscovEARy Zone celebrated 10 years of providing attendees with great resources regarding hearing loss prevention. The DiscovEARy Zone welcomed the Phoenix homeschooling community to have





their hearing screened and to experience a fantastic learning opportunity.

The AudiologyNOW! mobile app was incredibly helpful in 2016. Using the app, attendees were able to view posters and presenters' slides from their mobile devices. They could even take notes in the app or highlight the information during presentations. The app also allowed attendees to report CEU data right into the Academy's CEU manager system, making tracking CEUs incredibly easy.

Early Saturday morning, the Academy board of directors hosted the annual membership meeting. Breakfast was served, which probably helped to draw a pretty good crowd for 7:00 am! Candidates for president-elect and members of the board of directors spoke to the assembled group about their vision for the Academy. The board of directors fielded questions during the Academy Team Huddle. Also on Saturday morning, the ACAE hosted a Clinical Education Forum that welcomed audiologists from all walks of life to share in planning for the future of clinical education in audiology.

From start to finish, AudiologyNOW! 2016 provided high-quality education and engaging events to help create a bright future for audiology!

Joscelyn Martin, AuD, was the program chair for AudiologyNOW! 2016.

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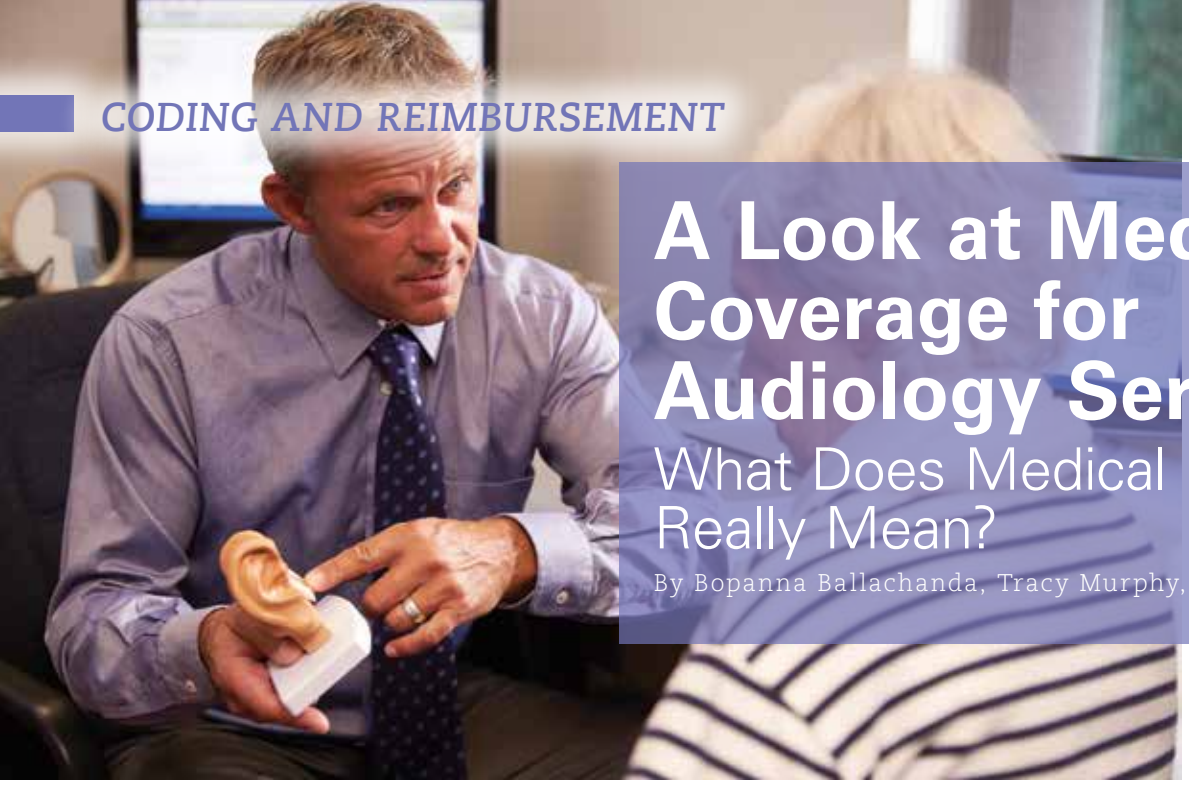

A Look at Medicare Coverage for Audiology Services

What Does Medical Necessity Really Mean?

By Bopanna Ballachanda, Tracy Murphy, and Kate Thomas

Understanding Medicare coverage for audiology services often feels like navigating a complex maze, complete with dead-ends and wrong turns. Part of successfully navigating this maze includes having the proper map and tools. One of the most basic and essential tools for understanding Medicare coverage for audiology services is the *Medicare Benefit Policy Manual*, Chapter 15—Covered Medical and Other Health Services. It sounds unlikely that something with such an imposing and technical title could be so helpful, but Section 80.3 of Chapter 15 provides a complete description of audiology services and other requirements for billing Medicare. The Academy's Coding and Reimbursement Committee (CRC) often receives questions about Medicare reimbursement, specifically medical necessity, and regularly references this section when providing guidance and information to Academy members. This article will further discuss the information found in the manual and how this can be a useful tool in better understanding medical necessity and other Medicare requirements.

According to the *Medicare Benefit Policy Manual*, Chapter 15, Section 80.3, "Hearing and balance assessment services are generally covered as 'other diagnostic tests' under section 1861(s)(3) of the Social Security Act." This means that audiology services are covered when a physician (or a nonphysician practitioner (NPP), as applicable) orders such testing for the purpose of obtaining information necessary for the physician's diagnostic medical evaluation or to determine the appropriate medical or surgical treatment of a hearing deficit or related medical problem. If a beneficiary undergoes diagnostic testing performed by an audiologist without a physician order, the tests are not covered even if the audiologist discovers a pathological condition. It is important to note that the Affordable Care Act requires physicians, or other NPPs, to enroll in the Medicare Program to order/refer items or services for Medicare beneficiaries. This would be a consideration for physicians or other eligible NPPs who may be ordering audiological testing, and something for audiologists to be aware of when reviewing these orders.

Medical Necessity

The description of audiology services in the *Medicare Benefit Policy Manual* seems straightforward, but its interpretation has led to many questions regarding physician orders, medical necessity, and when audiology services are covered by Medicare. In the November/December 2015 *Audiology Today*, the CRC addressed the physician order requirement. Physician orders are considered to be verification of a *medically necessary* evaluation. The intent is that the physician is requesting further information regarding the patient's hearing status as it relates to medical conditions such as tinnitus, vertigo, sudden hearing loss, etc. The physician's recommendation for an audiological evaluation should be documented in the patient's medical record in the referring physician's office. Receipt of a recent order for evaluation (through mail, fax, or phone) should also be documented in the audiologist's record. It is important to remember that coverage and, therefore, payment for audiological diagnostic tests is determined by the reason the tests were performed rather than by the diagnosis or the patient's condition. Medicare does not cover annual or routine hearing evaluations or those evaluations for the sole purpose of selecting hearing aids.

The *Medicare Benefit Policy Manual*, Chapter 15, Section 80.3 provides examples of appropriate reasons for ordering audiological diagnostic tests that could be covered:

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- *Evaluation of the cause of disorders of hearing, tinnitus, or balance;*
- *Determination of the effect of medication, surgery, or other treatment;*
- *Reevaluation to follow-up changes in hearing, tinnitus, or balance that may be caused by established diagnoses that place the patient at probable risk for a change in status including, but not limited to: otosclerosis, atelectatic tympanic membrane, tympanosclerosis, cholesteatoma, resolving middle ear infection, Ménière's disease, sudden idiopathic sensorineural hearing loss, autoimmune inner ear disease, acoustic neuroma, demyelinating diseases, ototoxicity secondary to medications, or genetic vascular and viral conditions;*
- *Failure of a screening test (although the screening test is not covered);*
- *Diagnostic analysis of cochlear or brainstem implant and programming; and*
- *Audiology diagnostic tests before and periodically after implantation of auditory prosthetic devices.*

If a physician refers a beneficiary to an audiologist for testing related to signs or symptoms associated with hearing loss, balance disorder, tinnitus, ear disease, or ear injury, the audiologist's diagnostic testing services should be covered even if the only outcome is the prescription of a hearing aid.

The *Manual* also provides examples of when audiological diagnostic tests would not be covered:

- *The type and severity of the current hearing, tinnitus, or balance status needed to determine the appropriate medical or surgical treatment is known to the physician before the test; or*
- *The test was ordered for the specific purpose of fitting or modifying a hearing aid*
- *Payment of audiological diagnostic tests is allowed for other reasons and is not limited, for example, by:*
- *Any information resulting from the test, for example:*
- *Confirmation of a prior diagnosis;*
- *Post-evaluation diagnoses; or*
- *Treatment provided after diagnosis, including hearing aids, or*
- *The type of evaluation or treatment the physician anticipates before the diagnostic test, though there are some exceptions to this rule with regarding to reevaluation (see Manual for more specific information).*

LCDs and Other Coverage Policies

Medicare contractors have Local Coverage Determination policies (LCDs) that are coverage guidelines developed by the contractor to provide rules either for determination of coverage in the absence of a National Coverage Determination policy (NCDs) or for further clarification of a NCD or LCD. In addition to reviewing the *Medicare Benefit Policy Manual*, Chapter 15, Section 80.3, the CRC would also suggest you contact your Medicare contractor to determine if there are any audiological or vestibular LCDs in your area. If an LCD is in effect in your area, your Medicare contractor may use this LCD to define what is "medically necessary" as well as the appropriate codes that are reimbursed based on medical necessity.

Why Is This Important?

It is important for audiologists and their staff to be aware of Medicare guidelines for coverage and have an understanding of medical necessity. The existence of a physician order does not guarantee that the threshold for medical necessity has been met. Medicare only reimburses the diagnostic testing if it is reasonable and necessary. It is critical for audiologists to verify that the threshold for medical necessity has been met.

Bopanna Ballachanda, PhD, is the director of central operations with the Audiology Management Group. He is also chair of the Academy's Coding and Reimbursement Committee. Tracy Murphy, AuD, is a private practice audiologist at North Shore Audio-Vestibular Lab in Highland Park, Illinois. She is also a member of the Academy's Coding and Reimbursement Committee. Kate Thomas, MA, is the Academy's director of payment policy and legislative affairs.

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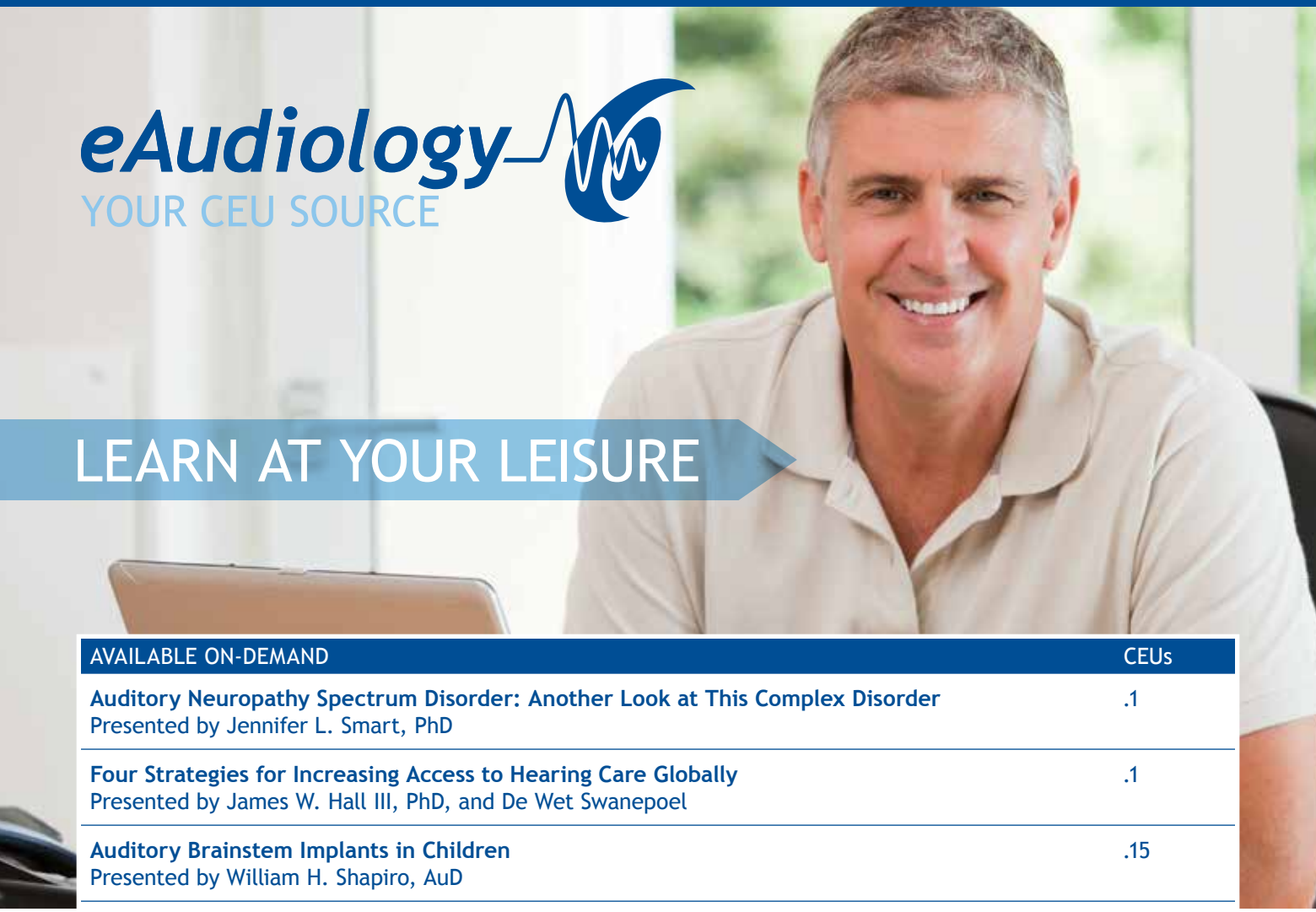

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Presented by Julia P. Andrews, AuD


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1. The Foundation's Board of Trustees gathered at the Foundation's Board Meeting in Phoenix. From left to right sitting, Jason Galster, secretary/treasurer; Therese Walden, Foundation chair; and Brenna Carroll, development chair. From left to right standing, Anna Jilla, student liaison; Elizabeth Thompson; Tanya Tolpegin, Academy executive director; Georgine Ray; Bopanna Ballachanda; Alison Grimes; Pamela Fiebig; David Zapala; Eileen Rall; Kim Barry; Erin Miller, Academy board liaison, and Tiina Huckabay.

2. Foundation Trustee Eileen Rall adds a Foundation Donor ribbon to Emily Venskytis's name badge. She was a first-time Foundation donor!

3. Kim Barry, Gary Gaines, Meagan Lewis, and Edwin Harless were all on hand to celebrate the Foundation's Happy Hour Benefit.

4. Dr. Teresa Ching, third from the left, was presented a plaque for her wonderful lecture by Foundation Chair Therese Walden, second from the left, and Don Schum, far right. Dr. Jerry Northern, far left, introduced this year's lecture, which is generously funded with philanthropic support from the Oticon Foundation.

5. One of the James Jerger poster winners, Tyler Caldwell, stands with his advisor, Linda Thibodeau, and members of the Foundation Board. From left to right, Jason Galster, Pamela Fiebig, Tyler Caldwell, Linda Thibodeau, and Therese Walden.

6. The Foundation's first "Coffee for a Cause" was a wonderful success and opportunity to get the word out about all of the great work the Foundation does. From left to right, Brenna Carroll, development chair; Kelly Coleman, Foundation manager, and Tiina Huckabay, Foundation trustee.

7. The Foundation presents this year's Student Research Forum panel! Foundation Chair Therese Walden joins Research Chair Sam Atcherson and Angie Singh of Plural Publishing for the presentation of the plaques. Student Research Forum is generously funded by Plural Publishing. From left to right: Therese Walden, Kyle Harber, Adam Sheppard, Angie Singh, Krysta Gasser Rutledge, Janelle Kelley, Chase Smith, and Sam Atcherson.

8. Peer Lauritsen, Oticon, Inc., generously presents a check for $25,000 for the Empowering People Scholarships to past winners and members of the SAA Board. From left to right: Anna Jilla, Kaitlyn Kennedy, Jacqueline Drexler, Laura Gaeta, Josh Huppert, Peer Lauritsen, and Whitney McAteer.

9. Several members of the Foundation Board were on hand to present Jennifer Melcher with an award for her Topics in Tinnitus Lecture. Additionally, Francis Kuk was on hand to represent Widex as Widex generously funds the Topics in Tinnitus Lecture Series. From left to right, Tiina Huckabay, Therese Walden, Jennifer Melcher, Francis Kuk, and David Zapala.

10. Attendees unwind at the SAA Cheers for Ears Benefit!

11. Keynote Speaker, Orna Drawas, speaks about performing like a rockstar at this year's General Assembly.

From Classroom to Clinic: Transitioning Into Your Externship or First Job

By Nicole Denney and Emily Venskytis

As doctor of audiology (AuD) students, we have chosen to study in a diverse and exciting patient-centered field. We signed on for three or four additional years of school to develop the skills and training needed to be audiologists. Near the end of the program, after several years of developing new skills through classroom work and exams, students find themselves preparing for their externships and graduation!

After taking the tests and finishing the preliminary clinical hours, what is it really like to transition into your externship? Further still, after you graduate with your shiny, new AuD degree, what is it like to start your first job after graduation? To answer these questions, we turned to the people who have done it themselves.

We asked members of the American Academy of Audiology (Academy) New Professionals Subcommittee and current fourth-year members of the Student Academy of Audiology (SAA) to share their experiences. **Corey Stoelb,** University of Wisconsin at Madison, is completing his externship at the University of Miami Ear Institute. **Kaitlin O'Brien**, University of Wisconsin at Madison, is completing her externship at Henry Ford Health Systems.

What was the most important factor when you chose an externship?

CS: For me, it was the broad educational experience. I really wanted a placement where I could develop a wide range of skills.

KO: I prioritized an externship that was well-rounded and would allow me to advance my knowledge and experience in many of the areas of our profession.

How was the transition from having coursework to seeing patients full-time?

CS: I learn best by being hands-on, so being able to see so many patients really made the information I learned in my courses much more salient.

KO: There is definitely an adjustment period, but you learn so much from every patient!

Did you do anything special to prepare for your externship?

KO: Ask your externship placement if there is anything they would like you to do to prepare. If there are areas or skills that you are not as confident in, take time to review.

What was your biggest challenge when you first started your externship?

CS: Keeping up with the fast pace of clinic every day. It took a lot of prioritizing, organization, and hard work in the beginning.

Do you have any other advice for those about to enter their externships?

CS: Your preceptors' goal is to make you a better clinician. Take their advice and criticism as an opportunity to better yourself and to prepare to be the best audiologist you can be for your patients.

KO: Have confidence in your knowledge and skills. Remember that you are still learning and do not need to know all of the answers.

From Externship to Audiologist

You have completed your externship and you're finally an audiologist. NOW WHAT? You have your well-deserved degree and it is time to start practicing. During this transition, it is important to know that you are not alone. One way the Academy provides support to new graduates is through the New Professionals Subcommittee, which is responsible for identifying and promoting the professional needs of audiologists who have graduated within the last five years. As new professionals, they understand the unique challenges of entering the workforce, adjusting to life outside of the classroom, and maintaining professional relationships. More information and resources for new graduates can be found on the Academy Web site.

To answer our most burning questions about life after graduation, we interviewed three new AuD graduates. **Chris Araj, AuD**, Towson University (2011), works for Bay Area Audiology and Hearing Aids in Webster, Texas. **Adriana Costlow, AuD**, University of Maryland (2013), works for Thomas Jefferson University Hospital in Philadelphia, Pennsylvania. **Reaghan Albert, AuD**, University of Northern Colorado (2014), works for Children's Mercy Hospital in Kansas City, Missouri.

How was the transition from your Fourth-Year to your first job?

CA: I'd say it was a pretty smooth transition. During the final weeks of my externship I was communicating with my future employer often.

RA: The transition was tough and a bit unnerving. It was nice to have the safety net of a supervisor. I was fortunate that my first job had 20 other audiologists ready and willing to help.

When did you start looking for a job?

AC: I searched more aggressively about three months before graduation.

RA: I started looking for job opportunities and prepping my CV in December.

Did you have any help from professional organizations during this time?

AC: I used the Academy's HearCareers Web site as my main career search resource, and I also sought feedback about my cover letters and CV from fellow SAA members from other programs.

RA: Initially, I used HearCareers to search for new postings. I eventually started looking for audiologist postings on children's hospital Web sites.

Do you have any other advice for new grads?

CA: Be involved at the local, state, and national levels. Ask for volunteer opportunities. It is okay to interview your future employers; you need to make sure it is a right fit for you as much as they are determining if you're a fit for them!

AC: Consider your first job as an extension of your education and training. Think about the specialized training, skills, or experience that you would like to have in the first one to five years of your career. A good place to start is through volunteering with the Academy.

RA: Spend at least a part of your externship working with someone who completes insurance forms, billing, prior authorizations, etc. That part of being an audiologist was the most time consuming learning curve from extern to clinician, for me.

Conclusion

For audiology students still learning in a classroom, the idea of working full time with a full patient load can be exciting and also daunting. Fortunately, the Academy has many tools to help students and recent graduates with their transition out of the classroom. Here are a few:

- Search for jobs and externships through HearCareers (http://hearcareers.audiology.org), and even set up e-mail alerts based on your search criteria.
- Use the Academy's Resume Review Service to get

constructive feedback on your resumes and cover letters.

- Connect with a mentor through the Academy.
- Fellow Up! after graduation by upgrading your student membership to a professional membership with the Academy.
- Stay involved with professional organizations by volunteering to serve on an Academy committee.

While it is important to build the foundation for a successful career as an eager and knowledgeable graduate student, the application of what is learned in school seems to come together in the externship year and first job experience. Although the transition from the classroom to the clinic can be intimidating, it does not have to be completely overwhelming.

Nicole Denney is currently a third-year AuD student at the University of Kansas Medical Center (KUMC) and serves on the SAA Board of Directors as chair of the Media Committee. Emily Venskytis is a third-year AuD student at Arizona State University and serves as a member of the SAA Media Committee.

New Members of the Student Academy of Audiology

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Audiologists Are Engine Behind Momentum of the American Board of Audiology®

By Meagan P. Lewis

The American Board of Audiology (ABA) functions smoothly and effectively as a mission-driven organization because of the dedication and commitment from professionals such as you. From the leadership of our Board of Governors to the subject-matter experts, students, university professionals, preceptors, and audiologists, we rely on their input and expertise to ensure that we are an organization for and by audiologists.

The ABA's latest achievement, the Certificate Holder–Audiology Preceptor (CH-AP™) certificate training program, was made possible by the work of hundreds of audiologists who were willing to give their time, experience, and expertise to the field of audiology to support the ABA's efforts to better the profession.

Many of you have spent countless hours participating in brainstorming sessions, study groups, and module creation with exam professionals and our staff; others provided their feedback through surveys and questionnaires. Regardless of how much time spent, your input is instrumental in helping the ABA move our profession forward.

Another area where we strive to involve dedicated audiologists who are committed to the audiology profession is on the ABA Board of Governors. As its chair, I am always impressed by my colleagues' desire to lead, guide, and transform both the organization and profession.

We recently announced that we are seeking officer positions on the 2017–2019 ABA Board. When you receive the slate, please take time to vote for one or more of these potential leaders. They will be tasked with helping support the vision of the organization and set its strategy for the future.

In the next issue of *Audiology Today*, we will announce the slate of candidates: I encourage all audiologists who hold the ABA's Board Certified in Audiology®, the Cochlear Implant Specialty Certification (CISC®), and the Pediatric Audiology Specialty Certification (PASC®), to learn about the candidates and participate in the election.

As an ABA-certified audiologist and the chair of the ABA Board of Governors, I personally appreciate and value the professionalism and expertise of the many audiologists who contribute to the ABA.

Their contributions and participation are vital as the ABA works to enhance mastery of the field through continued and lifelong learning and to help the ABA convey the importance of certification, which is a vital component to successfully demonstrating expertise in the field of audiology.

Meagan P. Lewis, AuD, Board Certified in Audiology, CISC, is chair of the American Board of Audiology Board of Governors, and is clinical manager of audiology at Wake Forest Baptist Medical Center in Winston-Salem, North Carolina.

Tomorrow's Standards Today

By Lisa Hunter, James W. Hall III, and Doris Gordon

ACAE's 2016 Standards Today

In March 2016, the ACAE Board of Directors approved the new 2016 educational standards. The approval was a result of four years of intensive work of study, refinement, modification, and development.

Beginning in 2012, the ACAE Standard Review Committee and Board of Directors engaged in a stakeholder survey, a comprehensive review of the current standards, and a wide distribution of the current standards to educators, to practicing audiologists, and to other external communities of interest. Combined input from each group led to the development of standards that are timely, up-to-date, and futuristic. Over the next decade, adherence to these standards will provide a high-level of quality and consistency among ACAE accredited programs.

The new educational standards include enhanced competencies in areas such as pharmacology, genetics, business/personnel management, and counseling. In addition, a new category in the educational standards entitled "Health and Safety Standards" addresses topics such as technical standards, immunizations, communicable and/or infectious disease policies, liability insurance, equipment policies, and emergency action plans.

Programs will need to demonstrate that students have a working knowledge of all competencies, as well as an ability to incorporate them into clinical practice. Persons earning a doctor of audiology (AuD) degree from ACAE-accredited institutions will acquire the fund of knowledge and professional skills that enable them to function as autonomous direct-care providers. The educational standards become effective in March 2017. Doctor of audiology programs have one year to review the new educational standards and to adjust to them. Prior to March 2017, ACAE-accredited programs may undergo re-accreditation, in accordance with the 2005 educational standards. Programs seeking ACAE accreditation between now and March 2017 can elect to submit applications in accordance with the 2005 educational standards or the new 2017 standards.

Tomorrow

The new educational standards were developed with the goal of ensuring that doctor of audiology students in ACAE-accredited programs acquire the knowledge and skills necessary for independent practice of audiology now and in years to come. Although none of us can predict the future, we can make three assumptions with confidence. First, most students entering AuD programs in 2016–2017 will not enter the work force until 2020. At the very least, today's AuD students must graduate with the knowledge and skills expected of audiologists five years from now. Second, audiology practice is increasingly complex and clinically challenging. Techniques and technologies audiologists apply in the identification, diagnosis, and rehabilitation of hearing loss are constantly expanding and evolving. Also, knowledge of topics like genetics and pharmacology is essential. Furthermore, audiologists are responsible for the assessment and management of pediatric and adult patients with a diverse collection of related disorders, such as auditory processing deficits, balance/vestibular disorders, tinnitus, and disorders of decreased sound tolerance.

Finally, we are beginning to witness a major disruption in the delivery of hearing health care, and particularly systems for hearing aid fitting and sales. Students in AuD programs today must be adequately prepared to meet unprecedented challenges in the practice of audiology tomorrow. The overall objective of the updated educational standards is to assist ACAE-accredited programs in the preparation of audiologists that have the knowledge, skill, and competencies required to successfully compete in a new audiology world.

Beyond Tomorrow

Building upon the foundation of the AuD degree, developed over the past 10 years, and looking ahead to the demands of tomorrow's health-care realities, we must ensure that our graduates are prepared to deliver positive outcomes for their patients. The realities we all face are greater demands from the aging population, pressures to decrease cost while increasing outcomes, and advances in technology (implantables, hearables, and pharmaceuticals). These three areas (access, cost, and technology) present both a challenge and an opportunity that could be harnessed to produce a tremendously positive wave of change in our programs and our graduates. We cannot afford to cling to older methods of educating students in the one-to-one apprentice approach with outdated tools and methods. This changing world requires educators to change as well. New approaches to simulated patients and technology, real-world practical exams, use of audiological assistants, and partnerships with clinics and industry will help us to not only keep pace, but fundamentally improve our practice to stay ahead of demographic and technology changes.

Audiologists are specialty professionals dedicated to hearing and balance habilitation and rehabilitation, in partnership with physicians and other health-care professionals. Our responsibility to our patients as doctors of audiology is to provide quality outcomes at the highest levels and scope of our practice. The limited license practitioner, or LLP model, includes a wide range of non-physician health-care providers who are in independent practice. To fully embrace the LLP model, audiologists must know and use best evidence, appropriately supervise assistants to augment professional care at lower cost, and utilize new technologies and measurement scales to achieve better outcomes. The principles of LLP practice, outcomes-based education, leadership development, and evidence-based care are all contained within the new ACAE standards. These standards were developed with the widest range of research and input in the history of audiology education, and will serve as a roadmap for programs and the profession well into the next decade. We look forward to working with current and candidate programs to put these standards into action and thus, to promote the highest caliber of clinical education in audiology.

Lisa Hunter, PhD, is the scientific director of audiology and professor of audiology and otolaryngology at the Cincinnati Children's Hospital Medical Center in Cincinnati, Ohio. She is also the current chair of ACAE.

James W. Hall III, PhD, Board Certified in Audiology, is a professor at Salus University and University of Hawaii, and president of James W. Hall III, Audiology Consulting, LLC. He is an internationally recognized audiologist with 40 years of clinical, teaching, research, and administrative experience. Dr. Hall currently serves as the vice chair of the ACAE.

Doris Gordon, MS/MPH, is the executive director of ACAE.

New Early Hearing Detection and Intervention Legislation: H.R. 1344, S. 2424

By Alexandra Costlow and Mariah Cheyney

Early identification of hearing loss continues to be diagnosed through Early Hearing Detection and Intervention (EDHI) state programs. As a result, legislation calling for the renewal of federal funding for such programs is worthy of support.

A study by Yoshinaga-Itano, Sedey, Coulter, and Mehl (1998) shows that identification of hearing loss prior to six months of age with early intervention services provided within two months of diagnosis can lead to better long-term language scores. FIGURE 1 shows that early intervention services, including the provision of full-time hearing aid use, is also associated with higher vocabulary scores in school-age children with mild hearing loss (Walker et al, 2015). EDHI state programs work to decrease the number of infants classified as loss to follow-up after failed screening or loss to early intervention after hearing loss is diagnosed.

Arthur Florio (pers. comm., March 10, 2016), director of the Pennsylvania Newborn Hearing Screening program, explains that, "When the first EHDI legislation was approved in 2000, only about 44 percent of newborns were screened for hearing loss. Currently, almost 98 percent of all Pennsylvania newborns are screened, and each year there are thousands of infants with hearing loss and their families who are enjoying the benefits of early identification. There have been a number of studies that appear to demonstrate that the sooner a newborn is identified with permanent congenital hearing loss (PCHL) and enters into treatment and services, the better the outcomes."

The most recent statistics released by the Center for Disease Control (CDC) reveal an increase in the number of infants diagnosed with permanent hearing loss after failed screening in 2012, as compared to 2006. For the same time frame, an increase (55.4 to 61.7 percent) was also noted in the number of children who received Early Intervention Services (Williams et al, 2015). These positive outcomes can be attributed to the improvements in state delivery of hearing screenings and better documentation on behalf of EDHI programs.

These improvements will not continue without federal financial support. Legislation calling for renewal of EDHI funding (H.R. 1344) passed in the House of Representatives on September 9, 2015. The House bill was then introduced in the Senate in December 2015 by Senator Rob Portman (R-OH), and currently holds one additional co-sponsor. This legislation would provide funds to the Health Resources and Services Administration for the support of newborn screening programs, including the training of qualified personnel and health-care providers. Funds will also be provided to the CDC for technical assistance in the provision of data collection and management. Funding for both of these organizations is vital to the continued success of EDHI programs, and will work to improve the current program limitations, which include lack of sufficient data management and variability in screening protocols.

Contact your state representatives today to add your voice in supporting this legislation for the continued funding for EDHI programs for the years 2016 through 2020. Your representative and senator can be found by entering your zip code in the Legislative Action Center (http://capwiz.com/audiology/home) on the Academy Web site.

Alexandra Costlow, AuD, is a clinical audiologist at Thomas Jefferson University Hospital in Philadelphia, Pennsylvania. Mariah Cheyney, AuD, is a clinical assistant professor at

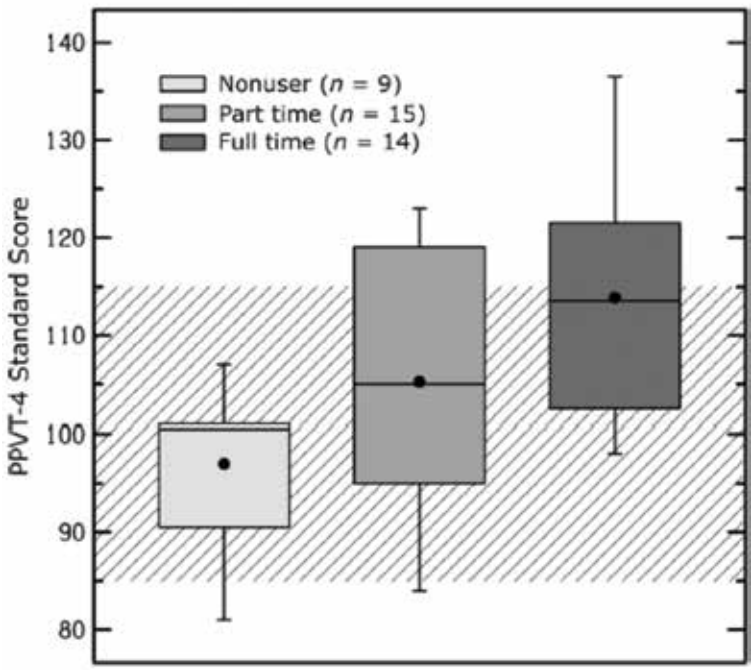

FIGURE 1. Box plot of Peabody Picture Vocabulary Test-Fourth Edition (PPVT-4) scores as a function of hearing aid use group. The central lines represent the median values, the filled circles represent the mean values, and the box limits are the 25th and 75th percentiles. The lower and upper fences are the minimum and maximum, respectively. The hatched area represents the average range for the normative sample.

Northern Illinois University in DeKalb, Illinois. Both Costlow and Cheyney are members of the Academy's Government Relations Committee.

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Yoshinaga-Itano C, Sedey AL, Coulter DK, Mehl AL. (1998) Language of early- and later-identified children with hearing loss. *Pediatrics* 102(5):1161–1171.

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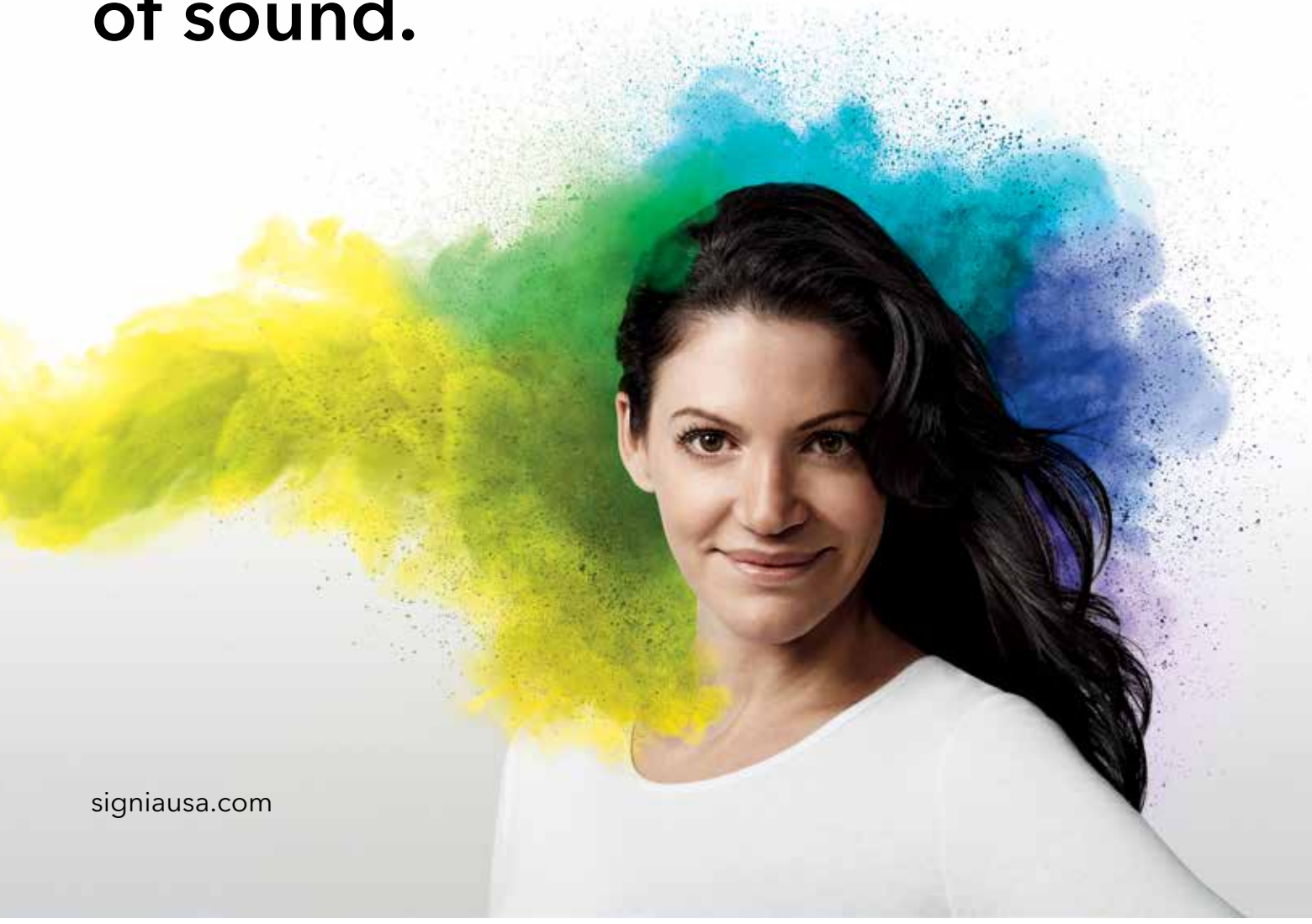

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Continuous innovation calls for passion, courage and forward thinking. With our new brand – Signia – we continue to challenge the impossible. Our focus is on making a positive contribution to the lives of people with hearing loss and helping them hear what matters most.

Quality, reliability, accuracy, and usability are the vital prerequisites for all Signia products.

The vision of Signia builds on the experience of Siemens to provide you with a comprehensive portfolio of advanced hearing solutions along with a passionate team: One with a wealth of knowledge and experience that will continue to provide life-changing technologies.

With Signia, let's make a difference together and ensure that life sounds brilliant for everyone. Call (800) 766-4500 to learn more.

Hearing Systems

SIEMENS