

JUL/AUG
2018

American Academy of Audiology
www.audiology.org

AUDIOLOGY

TODAY

The magazine of, by, and for audiologists

Li-lons, AND Trackers, AND BAERS — Oh My!

The Future of
“Hearing Aid” Technology

THE ABCs OF HEALTHY HEARING

Three-Tiered Approach
to Amplification

DIFFERENTIATING AUDIOLOGISTS FROM HA DEALERS

Confusion with Consumers

PROMOTING AUDIOLOGY WORLDWIDE

Global Audiology Initiative

**2018
ACADEMY
RESEARCH
CONFERENCE**

Genetics and Hearing Loss

**AAA 2018
IN REVIEW**

Academy's Annual
Conference





"I lost most of my hearing 76 years ago in a combat-related incident with a German tiger tank. Two years ago I received my CaptionCall phone and have been back in society full time. I have only one word for this phone - FREEDOM!"

Stan - WWII Vet



Give Personal Independence. Give CaptionCall!

Learn more about our simplified ordering options.

www.captioncall.com/provider | 877-385-0936



Technology partners:



Connect more patients, and grow your practice.

Reconnect more of your patients with life. Offering your patients a no-cost Sprint CapTel phone helps them stay socially engaged and active. With four phone options, you have a solution for every patient. We handle all the details, and our Hearing Health Care Kit makes it easy.

Models include:

Traditional • Modern • Low-vision • Non-internet



Phones to fit every patient.

Your kit includes everything you need, and your patients get their choice of phones!

We make it easy. (Registration required.)

Get your kit

professionals.sprintcaptel.com • 877-805-5845

CapTel callers are responsible for their own long distance call charges. CapTel is intended for use by people with hearing loss. **Free Hearing Health Kit Offer:** Available to any certified audiologist or hearing health provider. Req. registration and completion of brief training for CapTel phone. While supplies last. Other restrictions apply. Sprint reserves the right to modify, extend or cancel offers at any time. See sprintcaptel.com for details. © 2018 Sprint. Sprint and the logo are trademarks of Sprint. CapTel is a registered trademark of Ultratec, Inc. Other marks are the property of their respective owners.



Jul/Aug 2018
Vol 30 No 4

14

Li-Ions, and Trackers, and BAERs—Oh My: The Future of “Hearing Aid”

Technology If the emergence of PSAPs and OTC devices increases awareness of the importance of hearing and increases market penetration beyond today's 30 percent rate, it will be a tremendous boon for our profession.

By David Fabry

24

The ABCs of Healthy Hearing This article provides the counseling framework for a three-tiered approach to amplification involving audibility, brain training, and compensation strategies, allowing patients to share responsibility for their hearing health care. It also serves as an example to differentiate one practice from the competition.

By Elizabeth Aspell Ryan, Virginia Toth, and Anne Eckert

34

Opinion Editorial: Differentiating Audiologists from Hearing Aid Dealers

We must become vigilant about rejecting deceptive terms as a brand that can distort or eliminate our identities, resulting in consumer confusion.

By Larry Engelmann

46

Promoting Audiology Worldwide: Global Audiology Initiative To provide an understanding of audiology practice and to connect stakeholders in hearing health care around the world.

By Vinaya Manchaiah, Ross Roeser, and Rebecca Rogers

52

ARC 2018: Genetics and Hearing Loss This year's Academy Research Conference (ARC) focused on the relationship between genetics and hearing loss in audiological practice. ARC brought together several distinguished researchers to gain their thoughtful input.

By Kathleen Arnos

64

AAA 2018: In Review Attendees and industry representatives gathered in lively Nashville, Tennessee, at this year's conference, which hosted many successful events and educational opportunities in knowledge, science, and technology.

By Eileen Rall

78

8	PRESIDENT'S MESSAGE	Sleepless Nights and Best Practices By Jackie Clark
10	KNOW-HOW	Improving Outcomes with Patient-Centered Care By Caitlin Turriff
13	CALENDAR	Academy and Other Audiology-Related Events
13	THE WEB PAGE	What's Trending
74	REFLECTIONS	The Language of Hearing By Margaret Glenney
78	CSI AUDIOLOGY	Middle-Ear Function Analysis By Shreemanti Chakrabarty
80	CODING AND REIMBURSEMENT	Help Establish the Value of Your Professional Services By Paul Pessis and Kate Thomas
82	PUBLIC RELATIONS	July 4 Is a Good Time to Educate on Hearing Health By Jamie Bogle and Karlee Howard
86	FOCUS ON FOUNDATION	Photo Highlights from AAA 2018 in Nashville
88	SAA SPOTLIGHT	Get Involved with SAA: Become a Blogger! By Hannah Famili and Sueanne Phan
91	ABA SOUNDING BOARD	PASC: It's NOT Just Child's Play By Shelley R. Moats
95	ACAE CORNER	The Third Annual Clinical Forum By James W. Hall III

Academy News

98	AUDIOLOGY ADVOCATE	Grassroots Advocacy Is Critical During August Recess By Adam Finkel
100	BOARD OF DIRECTORS 2019	Election Results Are In
103	HONORS AND AWARDS 2019	Call for Nominations
104	JUST JOINED	Welcome New Members of the Academy
105	ETHICAL PRACTICES COMMITTEE	Review of Case Summaries 2017

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 fabryd@icloud.com.

Information and statements published in *Audiology Today* are not official policy of the American Academy of Audiology unless so indicated.

COPYRIGHT AND PERMISSIONS

Materials may not be reproduced or translated without written permission. To order reprints or e-prints, or for permission to copy or republish *Audiology Today* material, go to www.audiology.org/resources/permissions.

© Copyright 2018 by the American Academy of Audiology. All rights reserved.



INTELLIGENT TODAY. SMARTER TOMORROW.

Introducing the world's first real-time machine learning hearing solution.

WIDEX EVOKE™

HEARING HAS EVOLVED



Welcome to Widex EVOKE, the only hearing instrument that keeps learning from the wearer's real-life listening experiences — and from the experiences of other wearers around the world — constantly improving how your patients hear, long after their initial fitting.



Contact your Widex Regional Sales
Representative or Customer Care today.
1.888.474.5530 | widexPRO.com

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.

Editor-in-Chief

David Fabry, PhD | fabryd@icloud.com

Associate Editors

Sumitrajit Dhar, PhD
M. Samantha Lewis, PhD
Bre Myers, AuD, PhD
Christopher Spankovich, AuD, PhD

Editor Emeritus

Jerry Northern, PhD

Executive Editor

Amy Miedema, CAE | amiedema@audiology.org

Managing Editor

Ed Dalere

Art Direction

Suzanne Chanesman

Marketing Manager

Amber Werner

Web Manager

Marco Bovo

Advertising Sales

Samantha Leland | samantha.leland@mci-group.com | 410-316-9851

AMERICAN ACADEMY OF AUDIOLOGY OFFICE

Main Office

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

AMERICAN ACADEMY OF AUDIOLOGY MANAGEMENT

Executive Director Tanya Tolpegin, MBA, CAE | ttolpegin@audiology.org

Vice President of Public Affairs Kitty Werner, MPA | kwerner@audiology.org

Vice President of Communications and Membership Amy Miedema, CAE | amiedema@audiology.org

Senior Director of Finance and Administration Sandy Fulgham | sfulgham@audiology.org

Senior Director of Meetings and Education Kim Mydland, CAE | kmydland@audiology.org

Senior Director of Business Development Dina Santucci | dsantucci@audiology.org

Director of Government Relations Adam Finkel | afinkel@audiology.org

Director of Membership and Student Academy of Audiology Rachael Sifuentes, MA | rsifuentes@audiology.org

American Academy of Audiology Foundation Manager Rissa Duque-Yangson | ryangson@audiology.org

American Board of Audiology Kitty Werner, MPA | kwerner@audiology.org

Accreditation Commission for Audiology Education Kitty Werner, MPA | kwerner@audiology.org

BOARD OF DIRECTORS

PRESIDENT

Jackie Clark, PhD
University of Texas Dallas Callier Center
jclark@utdallas.edu

PRESIDENT-ELECT

Lisa Christensen, AuD
Cook Children's Hospital
lisavchristensen@gmail.com

PAST PRESIDENT

Ian M. Windmill, PhD
Cincinnati Children's Hospital Medical Center
ian.windmill@cchmc.org

MEMBERS-AT-LARGE

Bopanna B. Ballachanda, PhD
Audiology Management Group
bballachanda@gmail.com

Holly Burrows, AuD
Walter Reed National Medical Center
holly.l.burrows.civ@mail.mil

Melissa E. Heche, AuD
New York Speech and Hearing
mheche@ny-sh.com

Francis Kuk, PhD
Widex ORCA-USA
fkuk@aol.com

Tracy Murphy, AuD
Audio-Vestibular Lab
tracy_murphy@comcast.net

Virginia Ramachandran, AuD, PhD
virginia.ramachandran@gmail.com

Brad Stach, PhD
Henry Ford Hospital
bradstach@mac.com

Sarah Sydlowski, AuD, PhD
Cleveland Clinic
sydlows@ccf.org

Chris Zalewski, PhD
czalewski1@verizon.net

EX OFFICIOS

Tanya Tolpegin, MBA, CAE
Executive Director
American Academy of Audiology
ttolpegin@audiology.org

Jennifer Whittaker
President, Student Academy of Audiology
jeni.whittaker.saa@gmail.com

Audiology Today (ISSN 1535-2609) is published bimonthly by the American Academy of Audiology, 11480 Commerce Park Drive, Suite 220, Reston, VA 20191; Phone: 703-790-8466. Periodicals postage paid at Herndon, VA, and additional mailing offices.

Postmaster: Please send postal address changes to *Audiology Today*, c/o Membership Department, American Academy of Audiology, 11480 Commerce Park Drive, Suite 220, Reston, VA 20191.

Members and Subscribers: Please send address changes to membership@audiology.org.

The annual print subscription price is \$126 for US institutions (\$151 outside the US) and \$61 for US individuals (\$114 outside the US). Single copies are \$15 for US individuals (\$20 outside the US) and \$25 for US institutions (\$30 outside the US). For subscription inquiries, telephone 703-790-8466 or 800-AAA-2336. Claims for undelivered copies must be made within four (4) months of publication.

Full text of *Audiology Today* is available on the following access platforms: EBSCO and Ovid.

Publication of an advertisement or article in *Audiology Today* does not constitute a guarantee or endorsement of the quality, safety, value, or effectiveness of the products or services described therein or of any of the representations or claims made by the advertisers or authors with respect to such products and services.

To the extent permissible under applicable laws, no responsibility is assumed by the American Academy of Audiology and its officers, directors, employees, or agents for any injury and/or damage to persons or property arising from any use or operation of any products, services, ideas, instructions, procedures, or methods contained within this publication.



Hamilton CapTel® 2400i

Connect with Hamilton® CapTel®

The latest research confirms that hearing loss is not just about hearing less. There's more to the story when it comes to hearing loss and the associated comorbidities. For example, social isolation is a challenge your patients may face leading to varying degrees of depression.

Fortunately, something as simple as a phone call may alleviate the challenges of social isolation. With Hamilton CapTel, your patients will have the confidence to use the phone again and reconnect with family and friends – and you!

See how easy it is to connect your patients with a variety of no-cost* captioned telephones and Hamilton CapTel for Web/iOS/Android™. Simply join the Hamilton CapTel Hearing Healthcare program and we'll get you started with a FREE demo phone and patient educational materials.

Find out more about the Hamilton CapTel Hearing Healthcare program today!

800-826-7111

HamiltonCapTel.com/AT718

*Independent third-party professional certification required.
Third party trademarks mentioned are the property of their respective owners.

Voice and data plans may be required when using Hamilton CapTel on a smartphone or tablet.
The Hamilton CapTel phone requires telephone service and high-speed Internet access. Wi-Fi capable.

052318

Internet Protocol Captioned Telephone Service (IP CTS) is regulated and funded by the Federal Communications Commission (FCC) and is designed exclusively for individuals with hearing loss. To learn more, visit fcc.gov. Hamilton CapTel may be used to make 911 calls, but may not function the same as traditional 911 services. For more information about the benefits and limitations of Hamilton CapTel and Emergency 911 calling, visit HamiltonCapTel.com/911. • Copyright © 2018 Hamilton Relay. All rights reserved. Hamilton is a registered trademark of Nedelco, Inc. d/b/a/ Hamilton Telecommunications. CapTel is a registered trademark of Ultratec, Inc.

Sleepless Nights and Best Practices

I often share with friends and colleagues those thoughts about audiology that have indiscriminately robbed me of my evening slumber. One of the more persistent thoughts is the unknown number of audiologists embracing and carrying out best clinical practices. My thoughts are buoyed when I talk with colleagues who consistently and happily follow best clinical practices. They clearly take joy in demonstrating to their patients the value of an audiologist as a critical component of the health-care community.

In those moments, my mental estimate of the number of audiologists conducting best practices goes on the upswing. However, I must admit, the sleepless nights eventually return after meeting consumers across the United States, who, in an open forum, question audiologists (with 20-plus years of experience) who have only this year checked the hearing aid with “that special machine” (i.e., an inference of electro-acoustic or probe microphone measures).

A number of consumers have shared their experiences of purchasing a set of hearing aids without receiving any hearing aid care instructions, nor audiology oversight in the consumer ability of inserting and removing the hearing aids from their ears. Some consumers even report that in less than a year after

purchasing a set of troublesome hearing aids from an unfriendly audiologist or hearing aid dispenser, they were informed that they need to buy a new set of “top-of-the-line” hearing aids to get rid of the troublesome behaviors experienced from the earlier set.

It's during those times when my stomach drops to my feet and my mental estimate of the number of audiologists conducting best practices sinks to abysmally low numbers.

I do recognize that some patients are not accurate reporters of audiological procedures undertaken, and it is inadvisable to use such reports to accurately identify the number of audiologists conducting best clinical practices. But, as a DOCTORING PROFESSION, we are the best equipped to impact in a positive way our own quality of service provision models.

Though documents and guidelines have been written, it's time for this DOCTORING PROFESSION to identify how 100 percent compliance can be achieved in offering nothing less than our very best clinical practices each and every time we interact with patients.

As a DOCTORING PROFESSION, we no longer can opt out of critical clinical protocols necessary for quality hearing and balance health care. This is not an insurmountable objective.



It's time we address this objective as if our very next breath is dependent upon succeeding. We have no other option but to remain resolved in demonstrating what this DOCTORING PROFESSION can DO! [AT](#)

A handwritten signature in black ink that reads "Jackie J. Clark".

Jackie Clark, PhD
Board Certified in Audiology
President
American Academy of Audiology

GROW YOUR PRACTICE

Three out of four patients referred out for earwax removal don't return. That is **lost hearing aid sales**.

Stop referring, do the earwax removal yourself.

It is **EASY**, safe, fast and pain free with the Earigator®.



Let us show you how

Or visit our website and see our YouTube Videos

www.nupurtech.com

1576 Sweet Home Road, Buffalo, NY 14228 (716)222-2323



Improving Hearing Aid Outcomes Through Adoption of Patient-Centered Care

By Caitlin Turriff

Hearing aid technology has improved tremendously in recent years. Available devices are sleek, fast, adjustable, “smart,” and provide excellent benefits to individuals with hearing loss.

Despite these advances, the number of individuals with hearing loss who wear hearing aids remains small. According to MarkeTrak VIII, about 25 percent of adults with hearing loss are fit with hearing aids. Even though that percentage remains small, patient satisfaction toward hearing aids is improving (Kochkin, 2010). Incorporating patient-centered care elements into a hearing aid practice could help raise the adoption rate and continue to improve the patient’s perceived success with hearing aids.

What Is Patient-Centered Care?

Patient-centered care is becoming common in the medical community. It is defined as “providing care that is respectful of, and responsive to, individual patient preferences,

needs, and values, and ensuring that patient values guide all clinical decisions” (Institute of Medicine, 2001). According to MarkeTrak VIII, certain behaviors exhibited by an audiologist can improve hearing aid user success. These attributes include being knowledgeable, establishing realistic expectations, exhibiting empathy, explaining care, the quality of care, and being professional (Kochkin et al, 2010). Audiologists should especially strive to recognize and validate emotional responses from patients, as this can be an important component of patient-centered care.

Empowering the patient by engaging in conversations that address both the clinician’s and the patient’s goals is the main aspect of patient-centered care. Patient appointments tend to focus on the clinician’s goals—identifying and managing hearing loss—often disregarding the patient’s emotional response to the hearing-loss diagnosis (Eckberg et al, 2014). This can be a challenge to providing patient-centered care because the patient’s

concerns might not be fully recognized and addressed.

A way to incorporate patient-centered care would be to provide the hearing-loss diagnosis, engage the patient in a discussion about their hearing loss, their attitude toward hearing loss in general, and to then determine rehabilitation options (Eckberg et al, 2014). For example, ask the patient open-ended questions regarding his or her feelings about the hearing loss diagnosis after providing results of the audiogram and before discussing hearing aid options.

After addressing the emotional response, the discussion can shift to topics such as the patient’s lifestyle, attitudes toward hearing loss and assistive technology, their support system, dexterity, visual acuity, and cosmetic preferences, as these are all reported challenges to successful hearing aid fittings (Kochkin, 2007).

When the audiologist strives to balance his or her goals with identifying and addressing the goals of the patient, higher satisfaction and better hearing aid outcomes can be

achieved. This shared decision making will help the patient feel more empowered, and the audiologist can have a clearer sense of how to direct the rehabilitation.

After the Hearing Aid Fitting

Patient-centered care does not end after the selection and purchase of hearing aids, it also extends to follow-up appointments, and using an outcome measure is a way to achieve this. The Abbreviated Profile of Hearing Aid Benefit (APHAB) and the Satisfaction with Amplification in Daily Living (SADL) are two subjective measures that identify some of the known challenges to hearing aid success—satisfaction with overall performance and device cost (Kochkin, 2010).

The APHAB can be used to identify the patient's benefit from his or her hearing devices. This test consists of 24 items that measure communication ability in common situations with subscales addressing ease of communication, reverberation, background noise, and negative reactions to environmental sounds (Cox and Alexander, 1995). The questions are answered for both aided and unaided situations and the patient will choose a response on a seven-point scale ranging from always to never. The results will identify the patient's perceived hearing aid benefit and can open communication to address any challenges that may be occurring such as difficulty understanding speech in loud environments.

Determining the cost-benefit relationship also can be evaluated with an outcome measure. The SADL achieves this by evaluating hearing aid user satisfaction and the service and cost of the hearing aid. This questionnaire consists of 15 questions divided among four topics: positive effects, service and cost, negative features, and personal

image (Cox and Alexander, 1999). The patient records his or her answers on a seven-point scale ranging from “not at all” (one point) to “tremendously” (seven points), and these responses are then averaged to determine the global score, which decides the patient's overall satisfaction (Cox and Alexander, 1999). The score can then be used to discuss whether the patient feels he or she is receiving adequate benefit in relation to hearing aid cost.

The results of these outcome measures can prompt discussion regarding ways to identify and address remaining challenges. For example, the audiologist may need to provide additional counseling on communication strategies to help the patient strengthen self-advocacy and improve interactions with family and friends.

Conclusion

By focusing on both the clinical aspects of hearing health care (identifying and recommending solutions for hearing loss) and the individualized needs of each patient, a more meaningful patient-provider relationship can be established. This mutually beneficial appointment and communication structure should continue into subsequent appointments. Ultimately, allowing patients to feel that they can be active participants in their hearing health care can help improve patient satisfaction and ensure positive hearing aid outcomes. 

Caitlin Turriff, AuD, is an audiologist and trainer with Rexton based out of Seattle, Washington. She is also a member of the Academy's Business Enhancement Strategies and Techniques (BEST) Committee.

References

- Cox RM, Alexander GC. (1995) The abbreviated profile of hearing aid benefit. *Ear Hear* 16:176–186.
- Cox RM, Alexander GC. (1999) Measuring satisfaction with amplification in daily life: The SADL scale. *Ear Hear* 20(4):306–320.
- Eckberg K, Grenness C, Hickson L. (2014) Addressing patients' psychosocial concerns regarding hearing aids within audiology appointments for older adults. *Am J Audiol* 23:337–350.
- Institute of Medicine. (2001) Closing the Quality Chasm: A New Health System for the 21st Century. www.nationalacademies.org/hmd/~/media/Files/Report%20Files/2001/Crossing-the-Quality-Chasm/Quality%20Chasm%202001%20%20report%20brief.pdf.
- Kochkin S. (2007) MarkeTrak VII: Obstacles to adult non-user adoption of hearing aids. *Hear J* 60(4):24–30.
- Kochkin S. (2010) MarkeTrak VIII: Consumer satisfaction with hearing aids is slowly increasing. *Hear J* 63(1):19–27.
- Kochkin S, Beck DL, Christensen LA, Compton-Conley C, Fligor BJ, et al. (2010) MarkeTrak VIII: The impact of the hearing health-care professional on hearing aid user success. *Hear Rev* 17(4):12–34.



SENNHEISER

SET 880

High-quality TV listening system.

Made in Germany.

The + in TV listening.



Your + in living together:

Enjoy TV listening without disturbing your loved ones – thanks to five individual hearing profiles and Speech Intelligibility Button.

Your + in convenience:

Experience intuitive handling – with large volume control and automatic on/off function.

Your + in flexibility:

Discover wireless freedom and simple switching between two connected audio sources.

Find out more:

sennheiser.com/set880

July 25–27

Meeting

Tinnitus & Hyperacusis Therapy
Masterclass
London, United Kingdom

<http://tinnitustherapy.org.uk>

August 1–4

Meeting

Florida Academy of Audiology
Orlando, Florida

www.floridaacademy.org

August 15

Web Seminar

Expanding Your Practice: Design and
Implementation of Ototoxicity Monitoring
Programs

www.eAudiology.org

August 23–25

Meeting

Fifth Latin America Pediatric
Conference 2018
Mexico City, Mexico

[www.phonakpro.com/com/en/
training-events/events/upcoming-
events/mexico-city-mexico/overview-
mexico-city-mexico.html](http://www.phonakpro.com/com/en/training-events/events/upcoming-events/mexico-city-mexico/overview-mexico-city-mexico.html)

September 14–15

Meeting

Annual Conference for the California
Academy of Audiologists
Anaheim, California

[www.caaud.org/2018-annual-
conference](http://www.caaud.org/2018-annual-conference)

What's Trending!

 9,601


Laurel or Yanny? Academy
member Catherine Marino, AuD,
weighs in.

Published on May 17

www.facebook.com/audiology

 11,200


A few states and cities are
beginning to do something—at
least a little something—to quiet
things down. **#audpeeps**

Published on May 21

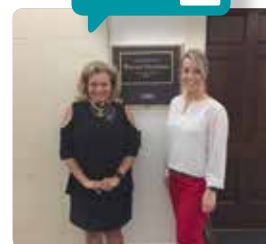
www.twitter.com/academyofaud

 2,000


This summary reviewed two
studies that examined noise
levels in group fitness classes.
Now, Julia Belluz is spreading the
word to the lay public regarding
the need to monitor noise levels
in group fitness classes.

Published on June 1

www.linkedin.com

 743


Vivianne Wersel, AuD, and Bailey
Loesch, AuD, had a great day on
#thehill meeting with the offices
of Rep. Brad Wenstrup and Rep.
Warren Davidson on telehealth
and student loan forgiveness.
**#audpeeps #advocacy
#telehealth**

Published on June 2

www.instagram.com/academyofaud

Li-lons, AND Trackers, AND BAERS — Oh My!

The Future of “Hearing Aid” Technology

In the classic movie, “The Wizard of Oz,” Dorothy realizes in order to reach the Emerald City, she must first travel through the dark and unfamiliar Enchanted Forest. Worried that they will be attacked, the Tinman predicts the forest will be filled mostly with “lions and tigers and bears.”

In recent years, audiology has faced threats due to a variety of factors—some of our own making—that have some fearful of the future. In the United States, an estimated 30 million individuals have measurable hearing loss, yet according to MarkeTrak IX (2015), only 30.2 percent of those with hearing loss own hearing aids. In recent years, numerous federal agencies have focused their attention on increasing hearing aid use, primarily though improving accessibility and affordability.

The hearing aid industry is in the midst of a “perfect storm” of changing technology, demographics, and distribution models. If the emergence of PSAPs and OTC devices increases awareness of the importance of hearing and increases market penetration beyond today’s 30 percent rate, it will be a tremendous boon for our profession.

BY DAVID FABRY



Beginning in 2009, the Food and Drug Administration (FDA) introduced a guidance document for personal sound amplification products (PSAPs). To avoid classification as a medical device, PSAPs cannot be marketed in the United States as products intended for individuals with hearing loss or to compensate for hearing loss (FDA 2009, 2013).

Some of these products have technical and performance characteristics that are quite similar to the Class I and Class II hearing aids that the FDA regulates. The determination of whether a product is a “device” that the FDA may regulate is based on the Federal Food, Drug, and Cosmetic Act (FDCA) definition of a device as one “intended for use in diagnosis of disease or other conditions, or in the cure, mitigation, treatment or prevention of disease” (FDCA, 1938). The FDA does not regulate PSAPs as medical devices, although they may regulate them under the electronic provisions of the FDCA. Furthermore, the Consumer Product Safety Commission has the authority to examine safety concerns regarding PSAPs.

Concerns regarding the safety and efficacy of PSAPs led to a series of hearings on whether to create a new category of “over-the-counter” (OTC) hearing aids designed for those with hearing loss that would be regulated by FDA. After a process spanning several years, President Donald Trump signed into law the Food and Drug

Administration’s (FDA) Reauthorization Act of 2017 on August 18, 2017. The legislation included the Over-the-Counter Hearing Aid Act designed to provide greater accessibility and affordability to hearing aids for those individuals with hearing loss.

The OTC Hearing Aid Act is designed to allow adults, aged 18 or older, with perceived mild-to-moderate hearing loss to access a new category of OTC hearing aids without the requirement to see a physician or audiologist. The new law, which was introduced last March by Sens. Elizabeth Warren (D-MA) and Chuck Grassley (R-IA), was passed by the U.S. House of Representatives and U.S. Senate on July 12 and August 3, 2017, respectively.

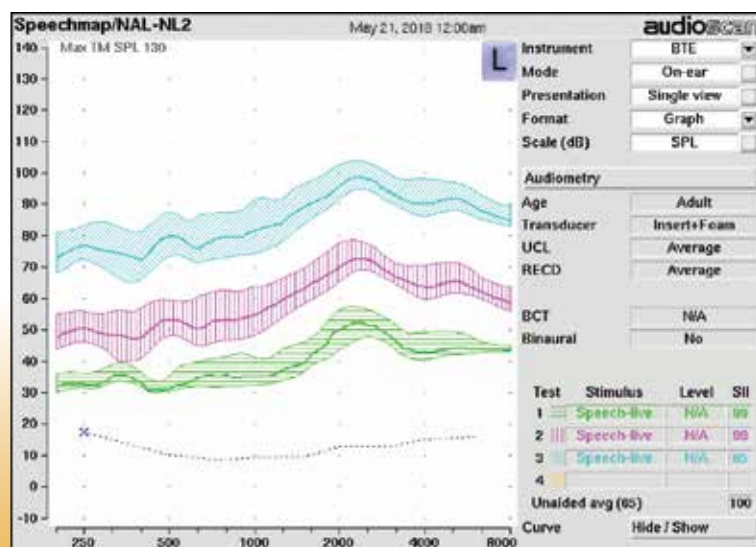
The new law requires the FDA to create and regulate a class of OTC hearing aids to ensure that they do not sacrifice safety in the name of improved accessibility and affordability. The law mandates the FDA to establish an OTC category for adults with “perceived” mild-to-moderate hearing loss within three years of passage of the legislation and finalize a rule within 180 days after the close of the comment period. In essence, this provides an approximate deadline of March 2021 for the final ruling to go into effect. To that end, although we do not yet know what the final ruling will look like, there are already several trends emerging.

Comparable Technology

First, PSAPs cannot be simply dismissed as “cheap” hearing devices anymore. The frequency response, gain, and output parallels many low-power hearing aids in current use. FIGURE 1 illustrates the real-ear aided response (REAR) for the Apple Air Pods measured for music (“All I Do Is Win,” by DJ Khalid) streamed from an iPhone X at $\frac{1}{4}$, $\frac{1}{2}$, and full-on volume, indicating a maximum power output (MPO) of approximately 105 dB SPL.

Many devices use compression amplification, multichannel signal processing, and wireless functionality. Some use directional microphones, noise reduction, and feedback cancellation. Although the FDA makes the distinction on intended use, signaled through advertising and labeling, both

FIGURE 1. Real-ear measurements for Apple Airpod headphones measured for streamed music (“All I Do Is Win,” by DJ Khalid) on an iPhone X at $\frac{1}{4}$ (green), $\frac{1}{2}$ (purple), and full-on (teal) volume.



PSAPs and hearing aid types of devices may be physically and electronically the same.

Because PSAPs do not require a medical prescription or professional fitting, they often are described as the audio equivalent of reading glasses. Of note, however, is that even reading glasses are regulated under the FDA. Sunglasses, spectacle frames, spectacle lens, and magnifying spectacles are medical devices exempt from the Premarket Notification 510(k) submission to the Food and Drug Administration (FDA). Although these devices are 510(k) exempt, several other FDA regulations apply, specifically as they pertain to good manufacturing practice through quality systems (QS) requirements set forth in 21 CFR 820 and safety, requiring spectacles and/or sunglasses to be impact resistant under 21 CFR Part 801.410. It is difficult to imagine the FDA failing to ensure that users who seek to purchase OTC hearing aids are similarly protected in the future.

A recent article examined electroacoustic results and simulated real-ear measurements from representative PSAPs compared to Class II regulated hearing aids (Reed et al, 2017a). The four primary electroacoustic measures for comparison were frequency response, equivalent input noise, total harmonic distortion, and maximum output (MPO) sound pressure level, which relate to sound quality and prevention from overamplification. Results indicated that one-half of the devices met all four electroacoustic tolerances evaluated in the study, with the remaining devices meeting tolerance on three or less of the electroacoustic measures.

In addition, simulated real-ear measurements indicated that nine of the PSAP devices were able to be adjusted to approximate National Acoustic Laboratories' (NAL) prescriptive gain targets within 10 dB, while only three were able to match NAL targets within 5 dB. In terms of conformity to important electroacoustic measures, it is clearly not the case of whether PSAPs can provide comparable performance, but ensuring whether consumers can trust that the specific device they purchase will perform as advertised without FDA oversight.

With regards to consumer benefits, another study (Reed et al, 2017b) investigated whether PSAPs and traditional hearing aids were associated with comparable improvements in speech understanding in noise for persons with mild-to-moderate sensorineural hearing loss. In this case, all participants were fitted professionally with each device, and three of five provided comparable speech understanding in noise to a traditional hearing aid that cost significantly more. One PSAP provided negligible benefit, and one degraded speech understanding relative to unaided performance. As noted, however, this study likely provided the “best-case” scenario for PSAPs, in that



FIGURE 2. In-the-ear hearable styles currently in use (i.e., Bioniq, NuHeara, Waverly Labs, Jabra).

hearing health-care professionals fitted all devices. It is difficult to ascertain whether similar results would have been found if these devices had been self-fit, similar to the way that PSAPs (and eventually OTCs) would be adjusted in real life.

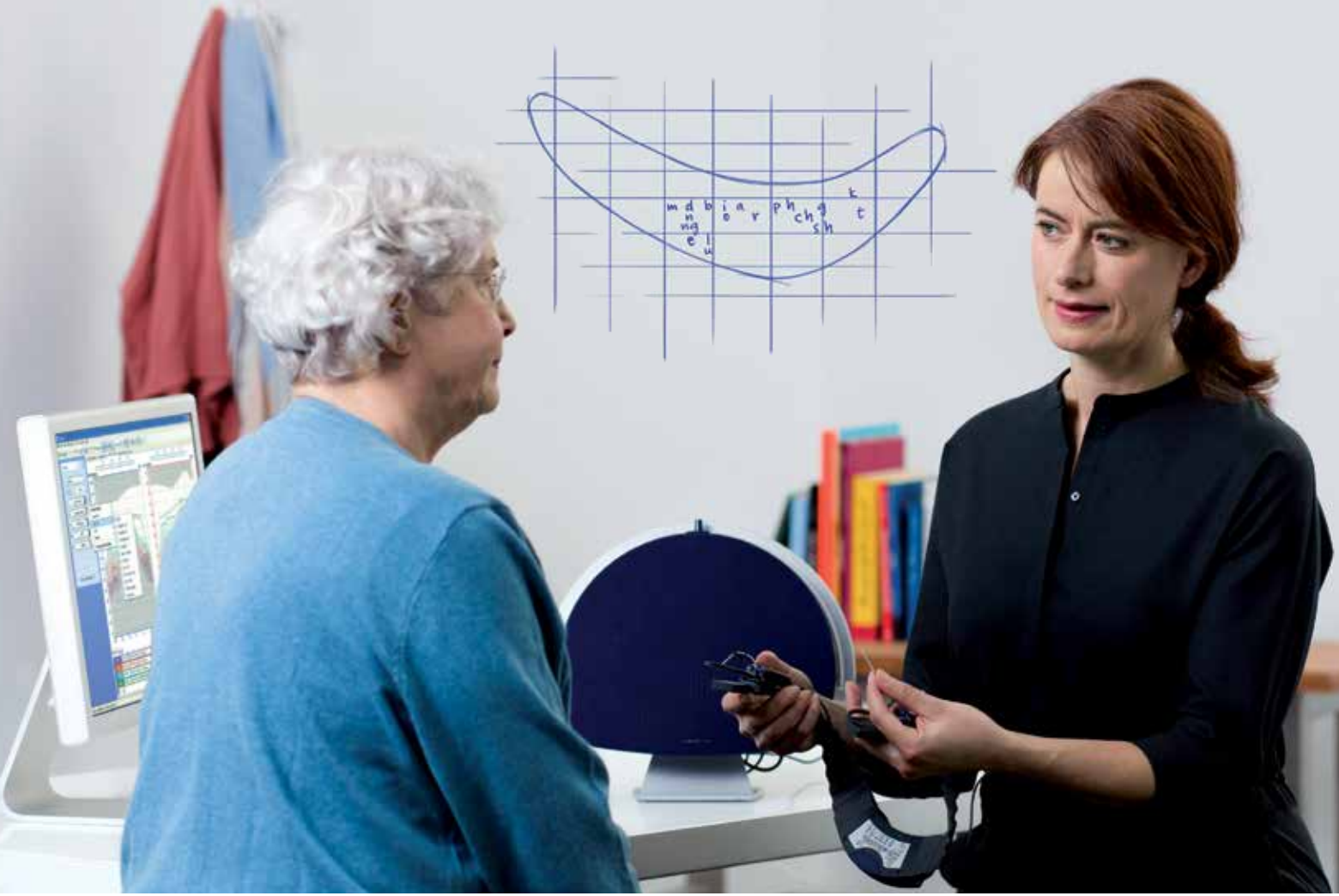
Ironically, the PSAP device that performed the poorest in the Reed et al (2017b) study was the MSA 30X, manufactured by Florida-based Global Concepts Limited, Inc. Advertisements for the MSA 30X claimed that the product allows users to “hear people clearly in crowded restaurants without missing a word,” which raised the attention of the Federal Trade Commission (FTC). Over the course of its investigation, the FTC found the defendants had no proof to back up their claims.

In May 2018, the FTC announced that Global Concepts Limited, Inc. agreed to settle a complaint alleging it made false or unsubstantiated claims that MSA 30X allows people who have trouble hearing to hear clearly, and falsely represented that independent studies prove the MSA 30X helps people hear up to 30 times better.

In summary, the technology associated with today's PSAPs, many of which will become tomorrow's OTC devices, provide heterogeneous electroacoustic performance and user benefits across devices. While some comprise comparable features and benefits to traditional hearing aids when fitted professionally by an audiologist, it remains to be seen whether these findings will hold up when they are subject to self-fitting through OTC. Furthermore, it remains to be seen whether the PSAP category becomes superfluous after the FDA makes its final ruling for OTC devices.

Disruptive Innovations

Although some professionals have spoken disparagingly about the emergence of PSAPs and OTC devices and the potential for “commoditization” of hearing aid technology, it also has challenged manufacturers to think differently from past solutions. For example, although rechargeable



Help your patients love their hearing aids!

It's never been easier to realize greater efficiency while boosting the quality of your counseling and care. Integrated verification using Aurical® and fitting software from Sivantos, ReSound, Phonak and Oticon enables you to:

- **Streamline your fitting workflow** – Quickly verify hearing instrument fittings to a prescriptive target of your choosing with minimal user intervention and training.
- **Gain more time for professional services** – Aurical enables binaural simultaneous measurements and completely automates the necessary changes to gain and output that are done to match target giving you more time to focus on counseling.
- **Dramatically reduce time spent on follow up visits** – Aurical enables you to help your patients and deliver the right fit from the very first visit.

Learn how we can help you to fitting excellence. Explore our innovative solutions, sign up for our free webinars and discover a world of audiology excellence here: otometrics.us/fitting

855.283.7978
www.otometrics.us/fitting

 **otometrics** | **audiology systems**
a division of natus

hearing aid batteries have been around for decades, PSAPs, OTCs, and especially the new “hearable” category have moved them into the mainstream, especially for Li-Ion, NiMH, and Silver-Zinc battery designs.

The portmanteau “hearable” is a combination of the terms wearable and hearing aid, as hearables combine major features of wearable technology with the traditional definition of audio-based connectivity for music, speech and telephone. The emergence of the baby boomer generation as a primary target for the hearing aid market has found that, while boomers are less stigmatized by hearing loss and hearing aids, they in turn have higher expectations for hearing aid performance. Consumer electronics companies and traditional hearing aid manufacturers alike have recognized that the new generation of hearing aid users want devices that are more than traditional “stand-alone” products that amplify gain as a function of frequency (Fabry and Groth, 2017); “Made-for-iPhone” and “Made for Android” processing provide “connected” technology through a direct Bluetooth link between phone and hearing aids. The next revolution, sparked by “hearable” devices, transition hearing aids to “multipurpose” devices that combine audio processing with embedded sensors to track steps, heart rate, pulse oximetry, body temperature, motion, and even electro-encephalogram (EEG) signals. The applications for this technology include tracking sleep, stress, activity, attention, and falls, and are blurring the distinction between “hearing aids” and “hearing health devices.”

While hearables and hearing aids are converging, some

important differences remain between the two technologies. First, while the stigma of hearing aids is decreasing, many of the consumer electronics companies are focused on “in-the-ear” form factors (FIGURE 2) rather than the “behind-the-ear” and “receiver-in-the-canal” devices that comprise 80 percent of the U.S. market.

Perhaps in an effort to distance themselves from the “look” and “feel” of traditional hearing aids, they also sacrifice battery life, wireless connectivity, and own-voice occlusion when independent custom styles are used. Other manufacturers (FIGURE 3) use “hard-wired” connectivity between ears to improve wireless functionality and battery life.

Another area of convergence between hearables and hearing aids pertains to “acoustic transparency”—providing gain to replace insertion loss when the device is inserted into the ear. Compensation for the combined acoustic effects of ear canal resonance, venting, and microphone location effects to provide “natural” sound quality for ambient sounds will be crucial for success with full-time use of hearables beyond “streaming only” use. This will be essential for bridging the gap from situational use to PSAP/OTC use for more than a few hours at a time.

FIGURE 4 illustrates REM findings from the Bose Hearphone devices when the on-board microphones (World Volume) were adjusted to their midpoint via the Bose Hear application. REAR (green, purple), REUR (orange), and MPO (teal) curves reveal reasonable acoustic transparency may be achieved with minimal adjustment of bass/treble and gain settings within the user application.



FIGURE 3. Hybrid “wired/wireless” hearable style (i.e., JBL).

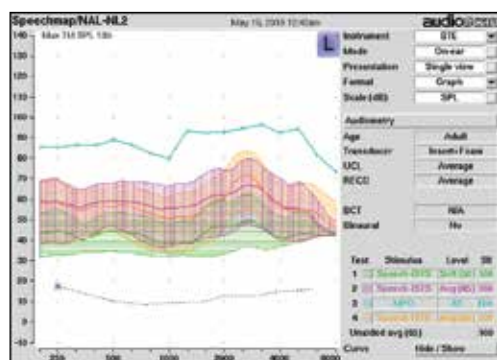


FIGURE 4. REAR (green, purple), REUR (orange), and MPO (teal) curves for the Bose Hearphone device using the Audioscan Verifit REM system and the ISTS (REAR, REUR) and swept sinusoid (MPO) stimuli.

Moving Beyond the Audiogram

While the new category of OTC hearing aids will be restricted for use in adult populations with mild-to-moderate sensorineural hearing loss, it remains to be seen exactly how they will define (and restrict) applications to persons that meet those candidacy requirements. Specifically, it is uncertain whether gain and output will be limited, or only maximum output limits consistent with the Make Listening Safe Initiative of the World Health Organization (2015), in association with the International Telecommunications Union, which currently recommend that levels not exceed 100 dB (A) measured on KEMAR or in-situ.

In addition, because no physician waiver or audiological evaluation will be required before purchase of OTC devices, it portends that some manufacturers of PSAPs will begin to develop fitting strategies for setting gain/output and bass/treble of “world volume” levels that are based on end-user preference, rather than audiometric characteristics (FIGURE 5).

Presumably, when the FDA issues its final ruling, these devices may well transition from PSAP to OTC devices using the same behavioral fitting methods over threshold-based prescriptive approaches. In fact, research suggests that people are able to adjust their hearing aid settings using a variety of user interfaces (with and without the benefit of audiometric threshold testing), and, in general, they prefer their own settings to those based on a prescriptive fitting formula or adjusted by an audiologist (Zakis et al, 2007).

Additional research is required, however, to determine the optimal methods for self-assessment and fitting of OTC devices to maximize comfort, audibility and sound quality. For now, however, it appears as though behavioral methods for initial fitting and/or fine-tuning will augment (or even replace!?) prescriptive approaches. In the future, it may even be possible to record EEG directly from embedded sensors in hearing aids or hearables for a variety of applications, including brainstem auditory-evoked responses (BAER) for objective hearing assessment (<https://en.wikipedia.org/wiki/Ear-EEG>).

Conclusion

The hearing aid industry is in the midst of a “perfect storm” of changing technology, demographics, and distribution models. If the emergence of PSAPs and OTC devices increases awareness of the importance of hearing and increases market penetration beyond today’s 30 percent rate, it will be a tremendous boon for our profession. Technology is driving drastic (and disruptive) change to the traditional practice of

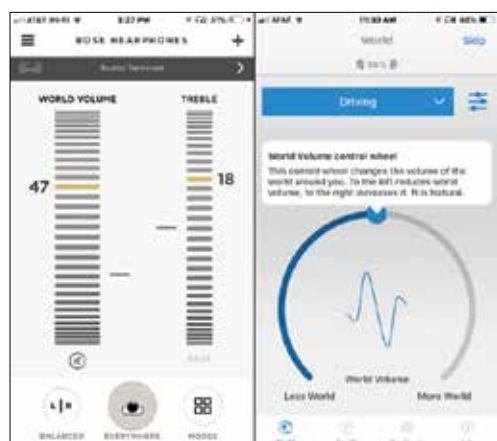


FIGURE 5. User application controls for Nuheara Boost and Bose Hearphone devices.

audiology. Our patients—now customers— presently have access to the same information that we once controlled; the rise of health-care consumerism is akin to an Enchanted Forest of threats that may also provide opportunity if we focus on the value of our professional services, rather than simply the technology. It may turn out that we had the power all along. 

David Fabry, PhD, is the chief innovation officer for Starkey Hearing Technologies in Eden Prairie, Minnesota. He is also the editor-in-chief for *Audiology Today* and www.audiology.org.

DISCLAIMER

The views and opinions expressed in this article are those of the author and do not necessarily represent the official policy, position, or opinion of the American Academy of Audiology; further, the Academy does not endorse any products or services mentioned in this article.

References

- Abrams HB, Kihm J. (2015) An introduction to MarkTrak IX: A new baseline for the hearing aid market. *Hear Rev* 22(6):16. www.hearingreview.com/2015/05/introduction-marketrak-ix-new-baseline-hearing-aid-market (accessed May 19, 2018).
- Fabry D, Groth J. (2017) Teleaudiology: Friend or foe in the consumerism of hearing healthcare? *Hear Rev* 24(4):16–19.
- Federal Drug Administration (FDA). (2009) Hearing Aids and Personal Sound Amplifiers: Know the Difference. www.fda.gov/forconsumers/consumerupdates/ucm185459.htm (accessed May 19, 2018).
- Federal Drug Administration (FDA). (2013) Regulatory Requirements for Hearing Aid Devices and Personal Sound Amplification Products—Draft Guidance for Industry and Food and Drug Administration Staff. www.fda.gov/MedicalDevices/DeviceRegulationandGuidance/GuidanceDocuments/ucm373461.htm?source=govdelivery&utm_medium=email&utm_source=govdelivery (accessed May 19, 2018).
- Federal Food, Drug, and Cosmetic Act [FDCA] (1938). Public Law 75-717, 75th Congress, and amended 21 U.S.C § 321 (h) 21 C.F.R. § 801-4.

Reed NS, Betz J, Lin FR, Mamo SK. (2017a) Pilot electroacoustic analyses of a sample of direct-to-consumer amplification products. *Otol Neurol* 38(6):804–808.

Reed NS, Betz J, Kendig N, Korczak M, Lin FR. (2017b) Personal sound amplification products vs a conventional hearing aid for speech understanding in noise. *JAMA* 318 (1):89–90.

World Health Organization. (2015) Standards for Safe Listening Devices: Situation Analysis. As part of the Make Listening Safe initiative of the World Health Organization and the International Telecommunications Union. www.itu.int/en/ITU-T/workshops-and-seminars/safelistening/documents/standards_for_safe_listening_devices_situation_analysis_report.pdf (accessed May 19, 2018).

Zakis JA, Dillon H, McDermott HJ. (2007) The design and evaluation of a hearing aid with trainable amplification parameters. *Ear Hear* 28(6):812–830.



ONE POSSIBLE
SIDE EFFECT
OF OUR WAX
IMPACTION
TREATMENT.
A SMILE
FROM EAR
TO EAR.



CLINICALLY PROVEN, TO DISSOLVE WAX, IN ONE TREATMENT

EARWAX MD®

WELCOME TO THE COMFORT OF CLEAR
EARCAREMD.COM

INNOVATIONS IN CERUMEN REMOVAL

Earwax MD®, a novel cerumen cleaning aid,
shows promise in clinical study

By Douglas Fullington, MD



The problems with ear wax

Cerumen impaction is one of the most common ear-related reasons to seek medical attention, affecting 1 in 10 children, 1 in 20 adults, and 1 in 3 elderly patients. Moreover, patients with hearing aids are particularly susceptible to cerumen accumulation, and 60% to 70% of all hearing aid repairs are caused by contact with cerumen. According to the 2017 clinical practice guidelines, nearly 50 million dollars were spent by Medicare for cerumen related procedures. Symptoms of cerumen impaction include hearing loss, feeling of fullness, pain, itching, tinnitus, odor, and dizziness. General practitioners are becoming more reluctant to manually extract cerumen due to complications like bleeding, perforated eardrums, dizziness, and infections, making cerumen management a growing segment of the ENT's practice.¹

Cerumenolytics: Are they effective?

Along with irrigation and manual extraction, cerumenolytic agents are recommended in the American Academy of Otolaryngology-Head and Neck Surgery Foundation clinical practice guidelines on cerumen removal, and it is encouraged that these techniques be used in combination with one another. The problem with current cerumenolytics is their questionable efficacy. Multiple studies have demonstrated that these products are no more effective than distilled water at solving the problem of impacted cerumen.^{2,3}

Earwax MD® - the one-two punch

Scientists at EOSERA® developed Earwax MD, a novel, patent-pending topical drop that uses a dual-action approach to dissolve cerumen. This dual-action technology solubilizes the lipids and wax while simultaneously disrupting the sheets of skin cells (keratinocytes) that are continually shed from the ear canal. In laboratory studies, this one-two punch is substantially more effective at breaking down human cerumen samples than currently available cerumenolytics, such as 6.5% Carbamide peroxide ear wax removal systems.⁴

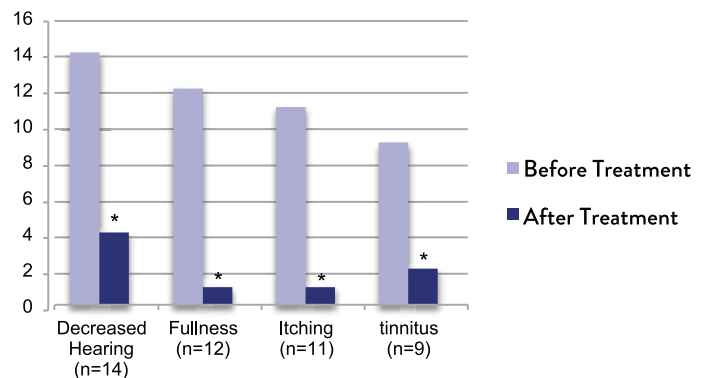
Earwax MD - clinical study design

Recently, a clinical study evaluated the efficacy and safety of Earwax MD. A total of 30 ears with at least 50% cerumen impaction at the time of enrollment were dosed with Earwax MD for 15 minutes prior to low-pressure irrigation with warm water. This procedure could be repeated one time, if needed.⁵

Success in cerumen removal

After one treatment with Earwax MD, majority of ear canals (53%) were completely clear of cerumen, with 100% tympanic membrane visualization. Greater than 85% of all ears had total clearing of cerumen after 1 or 2 treatments. All but one ear tested showed a substantial reduction in cerumen.⁵

Improvement in Cerumen Impaction Symptoms



Dramatically reduced symptoms

Before treatment, 90% of ears were symptomatic, with more than half having 2 or more ear-related symptoms. After treatment, symptoms were dramatically reduced by 82%. Specific symptoms demonstrating a statistically significant reduction after treatment were impaired hearing, fullness, itching, and tinnitus.⁵

Treatment satisfaction

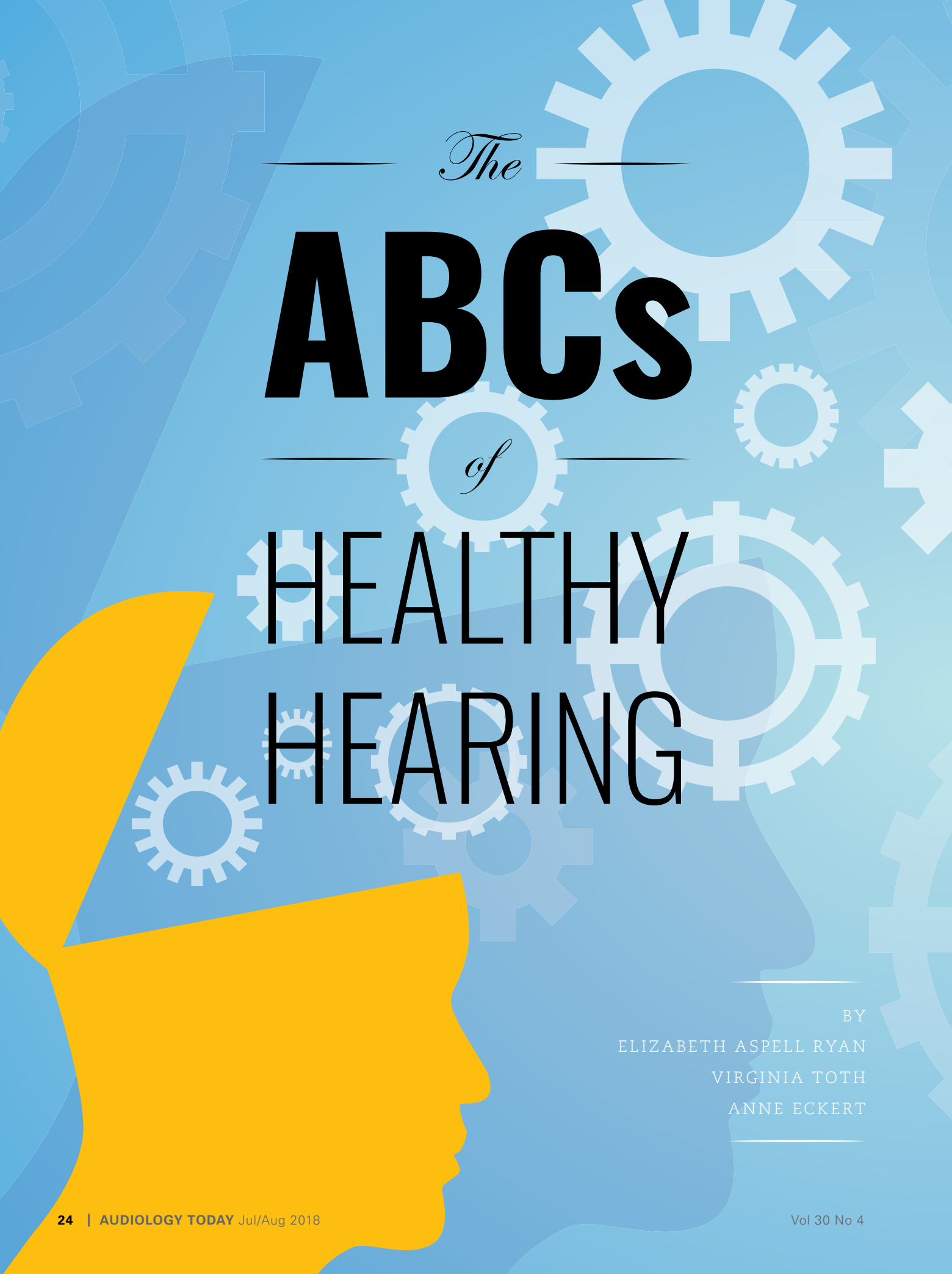
The satisfactory rate relating to the application process was 100%. Participants were satisfied with the application process in terms of time involved, the comfort of the application process, and the rinsing procedure.⁵

Conclusion

The clinical study results of this new product, Earwax MD, demonstrated promising success at cerumen removal when used in combination with irrigation. This efficacy translated into a dramatic reduction in symptoms for these patients and should be considered for both in-office and at-home treatment of impacted cerumen.

Recently published in the peer-reviewed journal, *BMC Ear, Nose and Throat Disorders*. Send an email to info@eosera.com to receive your link to view the publication.

WWW.EARCAREMD.COM



The

ABCs

of

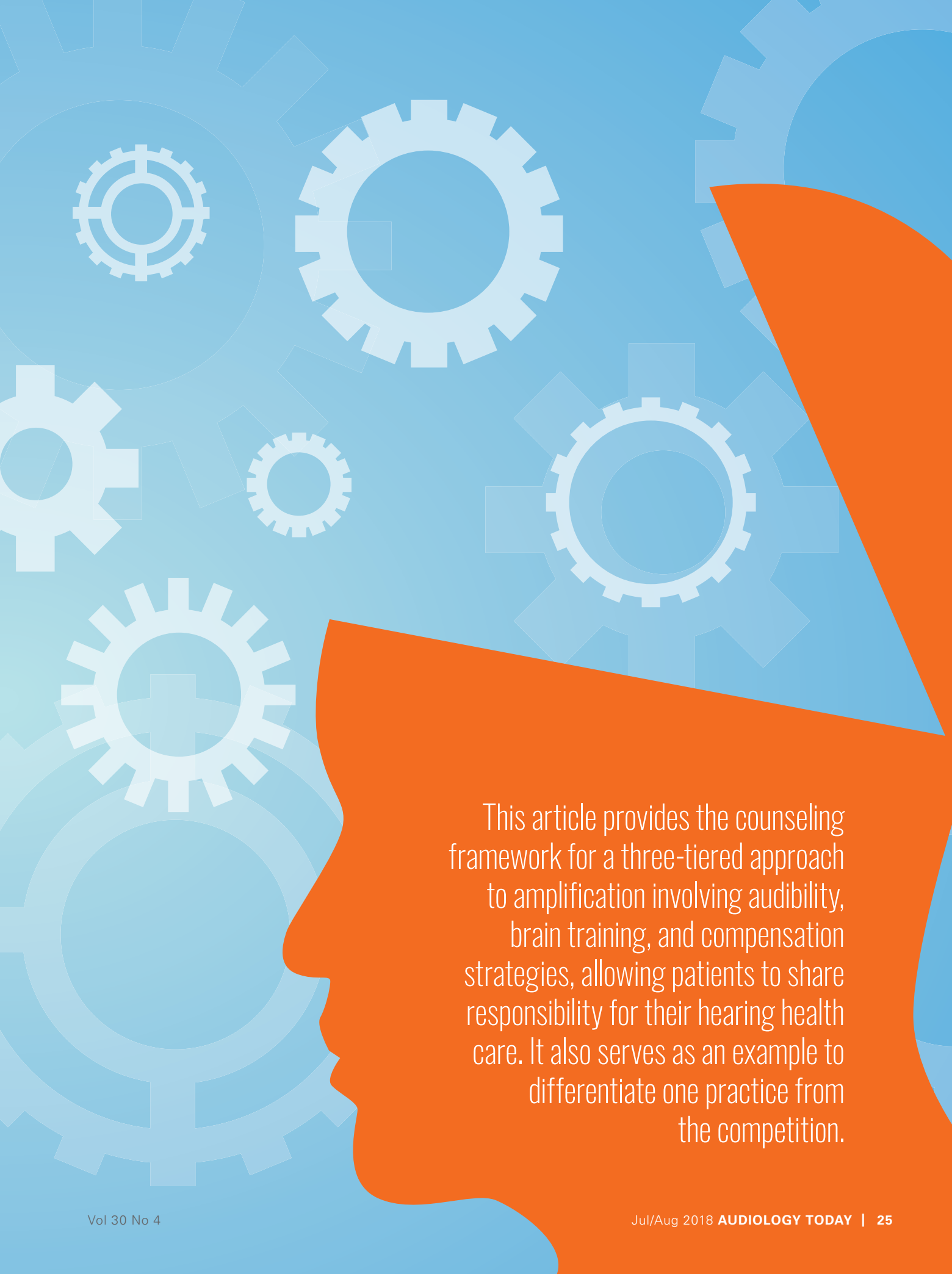
**HEALTHY
HEARING**

BY

ELIZABETH ASPELL RYAN

VIRGINIA TOTH

ANNE ECKERT



This article provides the counseling framework for a three-tiered approach to amplification involving audibility, brain training, and compensation strategies, allowing patients to share responsibility for their hearing health care. It also serves as an example to differentiate one practice from the competition.

Audiology in the Past

The very beginning of the audiology-profession had its roots in counseling. Until June of 1978, the American Speech-Language-Hearing Association (ASHA) banned hearing aid dispensing. Therefore, most audiologists did not dispense hearing aids in the early years of our profession. Instead, they worked with veterans suffering otologic complaints alongside physicians, speech pathologists, psychologists, and other professionals.

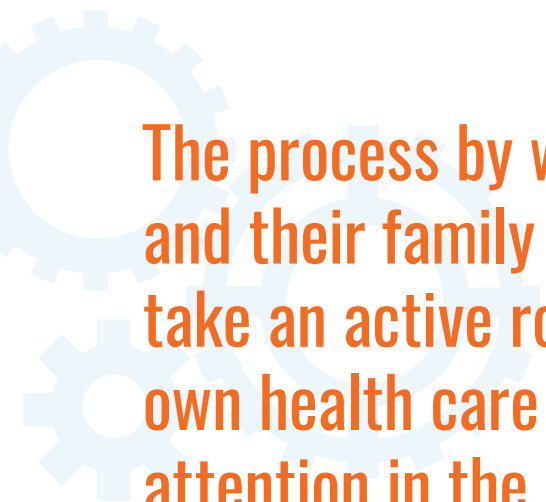
Hearing aids during the early years had relatively few adjustments that could be made, consisting of potentiometers that adjusted gain and output. Physical modifications were commonplace, such as adjusting tone hooks or venting to achieve the optimal sound quality. Beyond these basic adjustments, patients needed to be counseled on adjusting to their hearing aid settings. Expertise in counseling and communication strategies, the art of hearing aid dispensing, was a defining element of our great profession.

Audiology in the Present

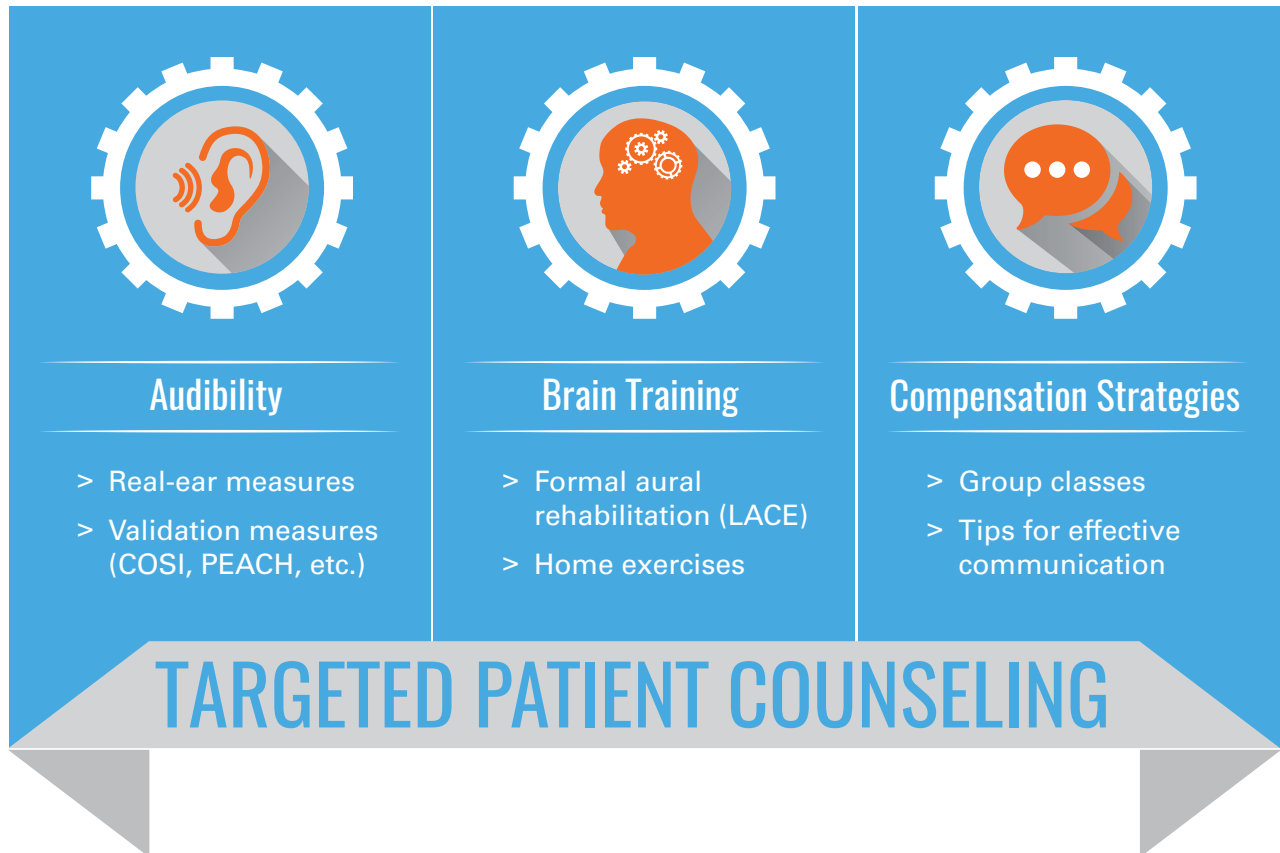
Hearing aid technology has become infinitely smarter. Our current generation of audiologists have a standardized education that provides competency on the science of hearing aid dispensing. We have doctoral level professionals who are exiting our programs well versed in concepts such as real-ear coupler differences, directional microphones, and frequency transposition. But what about the art? Today, blending the science of hearing aid dispensing with the art of hearing aid dispensing is often what differentiates one practice from the next. Most educational programs have at least one class dedicated to patient counseling. The additional length of the doctoral education also affords more opportunities to observe other clinicians and to practice counseling skills. In other words, the educational foundation and clinical experience of audiologists allows for unique insights into how to maximize the benefits of amplification. Despite the exposure to these skills, the challenge of counseling is largely in learning how to adopt a style that resonates with your patients, covers the necessary material, and feels both natural and ethical to deliver.

Patient and Family Engagement

The process by which patients and their family members take an active role in their own health care has gained attention in the broader context of health care. This concept is particularly salient in today's health-care environment, as reimbursement becomes related more closely to patient satisfaction. The process has been called patient engagement, patient activation, shared decision making, patient self-management, choice architecture, and patient-centered care. Ultimately, each of these concepts involves the process of providing the knowledge and confidence for patients



The process by which patients and their family members take an active role in their own health care has gained attention in the broader context of health care.



and their families to co-manage their health-care decisions.

When we diagnose pediatric hearing loss, we rely on the parents to play a critical role in the management process. Yet when we diagnose adult hearing loss, we tend to forget that participation is critical from both the patient and family. Clearly defining the roles and responsibility of patients gives them a higher likelihood of successful engagement. The process requires education and communication with patients. They should wear their hearing aids as recommended, give us feedback regarding their experience, and participate in brain training and compensation strategies.

We also must teach family members how to communicate with a hearing-impaired loved one. Family members often do not understand the limitations of amplification, and they can become frustrated when

communication continues to be impaired following amplification. Family members of patients with hearing loss might require direct education on how to be an effective communication partner, and they are often valuable in repeating and reinforcing the patient's role. We ask our patients to include family members throughout the amplification process to improve the experience for family members as well as our patients.

We have a responsibility to give patients all of the available resources to maximize their potential, and patients have a responsibility to use those resources. Patient engagement is said to lead to improved outcomes and reduced health-care costs (Veroff et al, 2013).

FIGURE 1. The authors have created a "complete aural rehabilitation program" they call the "ABCs of Hearing Rehabilitation."

Differentiating Your Practice

Patients today have increasingly more options for purchasing amplification, and over-the-counter hearing products are sometimes said to threaten the very existence of our profession. Audiologists are therefore faced with the challenge of differentiating themselves from the competition and showcasing the added value of comprehensive, audiological care. Many patients are unaware that hearing aids that look identical can have different features and benefits. They are also unaware that professionals who look identical can offer different levels of experience and expertise. Almost every professional who plays a role in hearing health care wants their patient to succeed. These professionals dispense similar products for similar prices with similar goals. A goal of marketing is to differentiate yourself from the competition and to convince your audience that you are able to meet their defined needs.

Regardless of how superior you believe your product or service to be, the key is that the patient shares this belief. In audiology, we primarily achieve this goal through input from the person served and then through targeted counseling. There are many differences across practices and clinicians as to how these goals are achieved. At JFK Johnson Rehabilitation Institute in Edison, New Jersey, part of Hackensack Meridian Health, we have introduced a “complete aural rehabilitation program,” one that emphasizes our commitment to evidence and research while remaining mindful of patient preferences. The following outlines the framework of this approach with an emphasis on what we have coined the “ABCs of Hearing Rehabilitation”—Audibility, Brain Training, and Compensation Strategies (see FIGURE 1).

Audibility

Science

Audibility is arguably the most important factor in improving speech intelligibility (Moore, 2006). The American Academy of Audiology (Valente et al, 2007) and American Speech-Hearing-Association (ASHA, 2006) advocate real-ear verification as a standard of practice for hearing aid dispensing. We rely on real-ear measurements as a critical step in ensuring audibility. Research suggests that manufacturer “first-fit” algorithms can deviate by more than 20 dB from prescription formulas such as NAL-NL2 (Sanders, et al, 2015) and that the large majority of manufacturer first fittings are not within 10 dB of the prescriptive formula (Aazh, 2012).

Knowing that the majority of hearing aid fittings may be underamplified or overamplified without real-ear verification, we rely heavily on objective verification to ensure that the patient’s hearing aids are maximizing access to speech while maintaining comfort. We recently completed a quality improvement initiative to ensure our practitioners are performing real ear verification consistently and appropriately (Kader, 2015). When appropriate, such as with bone anchored or implantable devices, we perform aided soundfield measurements to ensure audibility.

Art

Verification is our starting point, and for many patients we are able to acclimate them to 100 percent of target gain at the initial fitting. Yet we cannot and do not ignore patient preferences. We are mindful that in the field of health care, no one prescription is appropriate for all patients. Our primary goal is to educate patients on the consequences of their choices when they deviate from “best practice” recommendations. Anecdotally, about 10 percent of our hearing aid fittings request significant reduction or increase in gain as compared to prescription targets.

We do not shy away from asking our patients and ourselves the difficult questions. For example, is wearing a hearing aid significantly under target gain better than wearing none at all? Neither science nor art offer all of the answers. Both the patient and the professional must be motivated to achieve the best outcome in a way that is educated and ethical. Ultimately, we strive to improve the quality of life for our patients. We use evidence-based validation measures such as the Client Oriented Scale of Improvement (COSI) (Dillon et al, 1997) or the Parents’ Evaluation of Aural/Oral Performance of Children (PEACH) (Quar et al, 2012) to reinforce that a clinician successfully addressed the unique concerns of each patient. We typically administer these questionnaires at the first follow-up, before patients have completed the aural rehabilitation program. Therefore, we are able to determine how well audibility improvements alone contribute to the patient’s hearing goals. Some patients achieve their goals with a hearing aid fitting alone and elect not to pursue further services. Other patients are motivated to make additional progress through brain training and compensation strategies.

Brain Training

Science

Brain training refers to a specific form of aural rehabilitation that focuses on higher level auditory processing skills, such as hearing in noise. We know that age-related declines are expected in areas such as sentence (Gordon-Salant and Fitzgibbons, 1997) and word recall (McCoy et al, 2005). In addition, deficits in processing ability for listeners with cochlear hearing loss might contribute to reduced performance in certain conditions (Moore, 2007). Evidence suggests that cortical plasticity is possible into late adulthood (Erickson et al, 2007). In fact, hearing aid use alone has been shown to induce central auditory changes for older listeners, such as improvements in speech identification in noise and dichotic listening (Lavie et al, 2015).

The goal of brain training is to maximize patient performance after audibility has been restored. At our clinic, we have chosen the Listening and Communication Enhancement (LACE) program to provide individualized auditory training. The LACE program is a formal auditory rehabilitation program that allows listeners to practice in the areas of speech in noise, rapid speech, competing speech, and working memory. In some research, the LACE program showed improved listener performance across training sessions (Sweetow and Sabes, 2007).

In other research, participation in the LACE program did not improve patient outcomes over amplification alone (Saunders et al, 2016). In general, there is not strong evidence supporting computer-based auditory training (Henshaw and Ferguson, 2013); however, there are individuals in each study who demonstrate benefit from such training. We hope future research will help to identify which patients are most likely to benefit so that we are able to better customize our plan of care to the individual patient.

Art

The primary reasons for hearing aid abandonment and return for credit are “poor benefit” (Kochkin, 2000) and “difficulty in background noise” (Kochkin, 2007). Bridging the gap between a patient’s pre-fitting expectations and post-fitting outcomes is a complex process, and we know it may be useful to focus your counseling on a patient’s specific concerns and listening environments (Cox and Alexander, 2000). Hearing aids alone may not be enough. Unfortunately, research on the efficacy of “brain training” tasks is in its relative infancy. Brain training does not

necessarily improve performance over long periods of time or even necessarily generalize to everyday listening (Owen et al, 2010).

To combat the potentially limited impact of brain training programs, we encourage our patients to be life-long learners and to practice aural rehabilitation in their daily lives. We’ve often struggled with how to acknowledge and incorporate the limitations of evidence-based research regarding brain training with our strong belief in the theory of brain training and the importance of patient’s taking some accountability for their own outcomes. The LACE program offers us a tool to achieving this goal. We are able to use the program to illustrate to patients that they are not alone in their struggles, and that hearing involves a complex process beyond audibility that involves attention, working memory, and other skills.

When counseling on the LACE program, we often compare the process to physical therapy. We remind patients of the amount of work required for rehabilitation following medical procedures such as knee or hip replacements. We often borrow the words of audiologist Steve Sederholm when describing the LACE program: “[Hearing aids are] only part of the rehabilitation process. It’s the physical therapy that makes the patient strong again” (2007).

Compensation Strategies

Science

It is well documented that hearing loss can have a negative effect on health-related quality of life (Dalton et al, 2003). Compensation strategies are taught both formally and informally throughout the rehabilitation process. During the hearing aid fitting, realistic expectations are reviewed as they apply to the patient’s specific listening goals. Also, all patients and their families are invited to a two-part aural rehabilitation class offered each month within our department. Classes are taught by an audiologist and the material covered is often tailored to the specific questions and concerns of the class members. However, general topics include the types of hearing loss, understanding the audiogram, word recognition, auditory deprivation, the emotional impact of hearing loss and hearing aids, and communication strategies.

A handout of communication strategies is also available for our patients, highlighting the importance of visual cues and environment modifications. Much like brain training, the long-term benefits of these efforts are not well documented. Fortunately, a review of the existing evidence on formal aural rehabilitation (AR) classes led

researcher David Hawkins to conclude “there is reasonably good evidence that participation in an adult AR program provides short-term reduction in self-perception of hearing handicap and potentially better use of communication strategies and hearing aids” (2005).



A “complete aural rehabilitation program” changes the approach to amplification in such a way that counseling becomes integral to all stages of the journey. The goal is not to increase the time spent with each patient, but only the quality.

Art

Patients are counseled that even with the best amplification and brain training efforts, there will be scenarios that require compensation strategies. These situations are explored during the class, with the opportunity for participants to give examples of situations where they have experienced hearing difficulty. These classes offer the opportunity to discuss hearing aid adoption with a professional as well as their peers. Audiologists are often more comfortable with the technical

aspects of hearing loss rather than the emotional. Our goal is to provide a safe, guided discussion of hearing loss among individuals who can relate to both the benefits and limitations of amplification.

Overcoming Challenges

Time constraints and reimbursement are frequent explanations as to why counseling is not a larger part of audiological care. But a “complete aural rehabilitation program” changes the approach to amplification in such a way that counseling becomes integral to all stages of the journey. The goal is not to increase the time spent with each patient, but only the quality. In fact, we believe that sharing the responsibility of successful hearing aid use with our patients might ultimately reduce the overall number of visits required per patient.

Counseling Skills

Natural scientists are not necessarily natural artists, and vice versa. In other words, we cannot rely on audiologists to be proficient in both technology and counseling without training. We have found that the majority of audiologists have far more direct education related to diagnostics than counseling. Even associated skill sets such as business and marketing are not a priority for most doctoral programs.

Some students are able to absorb these skills from talented preceptors and colleagues, but many require direct instruction. At our facility, we have prioritized direct education on these types of extraprofessional skills, using sources such as manufacturer representatives, online training, and cross discipline models where appropriate. We have a weekly in-service to discuss, using evidence-based support, the most salient questions and concerns within our practice.

Noncompliance

Many patients decline aural rehabilitation classes or computer-based training. Some patients are not appropriate candidates for the LACE program for reasons such as limited English or limited computer proficiency. For those patients we offer a series of “auditory activities,” such as gradually increasing the signal to noise ratio while they converse with family members in the comfort of their homes. Though the science is lacking for some types of home auditory exercises, the sentiment is resounding.

The patient has a responsibility to assist with achieving their goals. Patients who have completed brain-training exercises tend to self-report an increase in communication confidence. Patients who have declined brain training tend to report that they are satisfied enough with their performance that they are not motivated to complete the training exercises. Even among patients who chose not to participate in “brain training,” the introduction of brain training has served as a powerful counseling tool and a logical sequitur regarding realistic expectations. Our patients appear to better accept the limitations of amplification and recognize their own role and responsibility in the rehabilitation process.

Audiology in the Future

In our future practice, we plan to monitor patient outcomes by administering questionnaires throughout each stage of the rehabilitation process. When we consider the future of audiology at large, we can only imagine how far research and technology will advance. Our current glimpse suggests that over-the-counter and smartphone-based devices will continue to grow, and telehealth technology might eliminate the need for many routine office visits. There are professionals in other disciplines that seek to share our scope of practice in many aspects of audiology, including hearing aid dispensing. We see growing candidacy for devices such as cochlear implants, and the horizon of medical research offers fascinating potential in domains such as hair cell regeneration and stem cell therapy.

Considering the future, it is reasonable to feel like the profession of audiology is at a crossroad. We might even fear that the profession of audiology will become obsolete. These concerns are almost as old as the profession itself, but what endures is our ability to adapt to the changing landscape. With concern comes opportunity. Our willingness to adapt is what will continue to elevate the profession in the years to come. We must educate

our patients on the difference between selling hearing aids and providing hearing health care. We must remind ourselves that the patient's experience should never be lost in our growing list of priorities. In clinical practice, we implement both evidence and theory. We strive to validate theories by analyzing data, and we are receptive to changing our approach if evidence leads us in a different direction. But for now, for today, we embrace the art and the science of the patient journey. Using the three-tiered frame of audibility, brain training, and compensation strategies allows patients to share responsibility for successful hearing health care outcomes and helps to differentiate one practice from the next. Not least of all, the approach provides audiologists the greatest opportunity to play a continued role in the hearing health care of tomorrow. 

Elizabeth Aspell Ryan, AuD, is a senior audiologist; Virginia Toth, AuD, is manager of audiology programs; and Anne Eckert, AuD, is administration director of rehabilitation at JFK Johnson Rehabilitation Institute at Hackensack Meridian Health in Edison, New Jersey. The program serves patients of all ages with hearing and balance disorders.

References

- Aazh H, Moore BC, Prasher D. (2012) The accuracy of matching target insertion gains with open-fit hearing aids. *Am J Audiol* 21(2):175–80.
- American Speech-Language-Hearing Association (2006) Preferred practice patterns for the profession of audiology. www.asha.org/policy (accessed May 30, 2018).
- Cox RM, Alexander GC. (2000) Expectations about hearing aids and their relationship to fitting outcome. *J Am Acad Audiol* 11(7):368–382.
- Dalton DS, Cruickshanks KJ, Klein BE, Klein R, Wiley TL, Nondahl DM. (2003) The impact of hearing loss on quality of life in older adults. *Gerontologist* 43(5):661–668.
- Dillon H, James A, Ginis J. (1997) The client-oriented scale of improvement (COSI) and its relationship to several other measures of benefit and satisfaction provided by hearing aids. *J Am Acad Audiol* 8(2):27–43.
- Erickson KI, Colcombe SJ, Wadhwa R, Bherer L, Peterson MS, Scaff PE, et al. (2007) Training-induced plasticity in older adults: effects of training on hemispheric asymmetry. *Neurobiol Aging* 28(2):272–283.

Gordon-Salant S, Fitzgibbons PJ. (1997) Selected cognitive factors and speech recognition performance among young and elderly listeners. *J Speech Lang Hear Res* 40(2):423–431.

Hawkins DB. (2005) Effectiveness of counseling-based adult group aural rehabilitation programs: a systematic review of the evidence. *J Am Acad Audiol* 16(7):485–493.

Henshaw H, Ferguson M. (2013) Efficacy of individual computer-based auditory training for people with hearing loss: a systematic review of the evidence. *PLoS ONE* 8(5):e62836. doi.org/10.1371/journal.pone.0062836

Kader SE, Eckert A, Toth V. (2015) Quality improvement for real-ear verification using a defined model for improvement. *Audiol Today* 27(5):26–33

Kochkin S. (2000) MarkeTrak V: “Why my hearing aids are in the drawer”: The consumers’ perspective. *Hear J* 53(2):34–36.

Kochkin S. (2007) MarkeTrak VII: Obstacles to adult non-user adoption of hearing aids. *Hear J* 60(4):24–51.

Lavie L, Banai K, Karni A, Attias J. (2015) Hearing aid-induced plasticity in the auditory system of older adults: evidence from speech perception. *J Speech Lang Hear Res* 58:1601–1610.

McCoy SL, Tun PA, Cox LC, Colangelo M, Stewart RA, Wingfield A. (2005) Hearing loss and perceptual effort: Downstream effects on older adults’ memory for speech. *Q J Experimental Psychol Sec A* 58(1):22–33.

Moore BC. (2007) *Cochlear Hearing Loss: Physiological, Psychological and Technical Issues*. John Wiley & Sons.

Owen AM, Hampshire A, Grahn JA, Stenton R, Dajani S, et al. (2010) Putting brain training to the test. *Nature* 465:775–778

Quar TK, Ching TY, Mukari SZMS, Newall P. (2012) Parents’ evaluation of aural/oral performance of children (PEACH) scale in the Malay language: data for normal-hearing children. *Int J Audiol* 51(4):326–333.

Sanders J, Stoodt T, Weber JE, Mueller, HG. (2015) Manufacturers’ NAL-NL2 fittings fail real-ear verification. *Hear Rev* 21(3):24–32.

Saunders GH, Smith SL, Chisolm TH, Frederick MT, McArdle RA, Wilson RH. (2016) A randomized control trial: Supplementing hearing aid use with listening and communication enhancement (LACE) auditory training. *Ear Hear* 37(4):381–396.

Sederholm S. (2007) LACE up profit and productivity. *Advance Audiol* 9(3):44.

Sweetow R, Sabes J. (2007) Listening and communication enhancement (LACE). *Sem Hear* 28(2):133–141

Valente M, Abrams H, Benson D, Chisolm T, Citron D, Hampton D, Loavenbruck A, Ricketts T, Solodar H, Sweetow R. (2006) Guidelines for the audiological management of adult hearing impairment. *Audiol Today* Vol 18.

Veroff D, Marr A, Wennberg DE. (2013) Enhanced support for shared decision making reduced costs of care for patients with preference-sensitive conditions. *Health Affairs* 32(2):285–93.





**FOR SOME ELITE SOLDIERS, PROTECTING
THESE COMMUNICATIONS TOOLS IS CRITICAL.**

As an audiologist and officer on the U.S. Army health care team, you'll have access to the country's most advanced aural technology while working alongside dedicated professionals. You'll gain experience developing improved communication strategies, evaluating protective devices and developing hearing conservation programs. But more importantly, you'll be helping Soldiers preserve their most valuable communication tool: the ability to hear.

To see the benefits of being an Army audiologist call 800-431-6731
or visit healthcare.goarmy.com/ha88



The views and opinions
expressed in this article
are those of the author
and do not represent the
official policy, position, or
opinion of the American
Academy of Audiology.



BRANDING THE



OR

BRANDING THE



THE NEED TO DIFFERENTIATE AUDIOLOGISTS FROM HEARING AID DEALERS
[PART 1 OF 2]

BY LARRY ENGELMANN

We must become vigilant about rejecting deceptive terms as a brand that can distort or eliminate our identities, resulting in consumer confusion.

In the United States, distribution of hearing aids is facilitated primarily through audiologists, physicians, and hearing aid dealers. There is confusion, however, in the marketplace over the “branding” of each group. Proper branding addresses inaccurate statements, positions, and perceptions, while differentiating between the profession of an audiologist and the occupation of a hearing aid dealer.

Williams (2016) defines branding as “...your promise to your customer. It tells consumers what they can expect from your products and services, and it differentiates your offering from your competitors. Your brand is derived from who you are, who you want to be, and who people perceive you to be.”

Since audiology’s inception during World War II, audiologists, as well as their representative state and national organizations, have invested multimillions of dollars “branding” audiologists’ multiple roles in society’s health-care system. Branding continues through the education of consumers, legislators, third-party payers, and colleagues, through the recognition and public awareness of how audiologists diagnose and treat patients with audio-vestibular disorders, and through explanations of how audiological care improves consumer’s quality of life.

Hearing aid dealers have existed for more than 100 years as retail salespeople selling a retail product (branding the truth). Over the past several years, attempts have been made to elevate hearing aid dealers’ recognition as members of the health-care community, rather than as a retail salesperson’s occupation (branding the lie).

The passage of the Over-the-Counter (OTC) Hearing Aid Act (2017) will create additional confusion through the development of a new channel for hearing aid distribution. Therefore,

it is essential that audiologists properly “brand” and differentiate our role from others involved in hearing health.

The desired outcome of this two-part series is branding the truth by the following:

1. Rejecting deceptive and fraudulent language and understanding legal language (Part 1)
2. Identifying health-care language, and describing professional/academic language compared to occupational apprenticeship/vocational/technical language (Part 2)

While this two-part article focuses primarily on those who work with hearing-impaired consumers, much of this information can be generalized to any of the technical/vocational occupations, allied health professions, and the healing arts doctoring professions.

Rejecting Deceptive and Fraudulent Language

The importance and usage of correct terminology cannot be overemphasized. Our terminology should be statutorily correct, representative of, and commensurate with academic/technical/vocational recognition. Otherwise, terms and phrases used incorrectly or inappropriately can lead to public confusion, deception, misunderstanding, and/or fraud. The public deserves to receive understandable, reliable, and truthful information, especially when it involves their health care. Consumers should be able to make health-care decisions based on factual and accurate information (Engelmann, 2017).

Grandiose job titles present an unwarranted presumption of competence to the unknowing and unsuspecting public. Pae (2013) explains that job title inflation

is where “firms and organizations confer upon their employees’ job titles that tend to convey superiority or seniority.” Job-title inflation also has been called “title fluffing,” “uptitling,” and “title creep.” Essentially, it is misusing labels to inflate one’s importance or status, to sound more impressive, and to boost the person’s reputation. This could be considered a form of “occupational fraud.”

Skousen (2016) explains, “If you’re inflating job titles, you’re breaking down traditional boundaries in the duties category. While employers may have good intentions, if you start inflating titles, the titles themselves don’t reflect the duties of the position and required expertise.” He continues, “Steer clear of negligently promoting. To give someone a responsibility he/she is not capable of doing—or a title that suggests something he/she is not really doing—is very risky.” Skousen advises to “avoid the temptation to change titles if it misstates what the person actually does.”

Seven Examples of Branding the Lie

The following sections examine seven of the various terms that are used to misrepresent the role of the hearing aid dealer.

HEARING HEALTH-CARE PROFESSION(AL)

Referring to audiologists, physicians, and hearing aid dealers in a generic “one-size-fits-all” manner and as a collective of hearing health-care professionals (HHCPs) is improper and will serve only to confuse and mislead consumers. Using the HHCP descriptor for expediency or convenience is not a justifiable rationale to blur the lines between extremely different groups who serve very different functions, have vastly different training and education, and should be defined and acknowledged as such (Engelmann, 2017).



William James wrote, “There is nothing so absurd that if you repeat it often enough, people will believe it.” HHCP represents a vague, nondescript, and seemingly positive sounding identity. However, HHCP is like a bad slogan; it is misleading and creates an illusion of false professionalism.

Identification and recognition of a profession and an occupation are essential for consumer understanding and transparency. You will read in greater detail in Part 2 that a “profession” requires individuals to have education and training at or beyond the baccalaureate degree for licensing, which leads to defined “scopes of practice.” An “occupation” requires individuals to have education and training with less than a baccalaureate degree for licensing, which leads to defined “work roles,” i.e., job duties and responsibilities.

Cooling (2016), a hearing aid dealer, wrote about branding the “hearing health-care profession.” Among other comments, he makes the following:

1. “What is the general public’s understanding or feeling about the profession of hearing health care today?”
2. “How do we begin to set the terms of reference for the hearing health-care profession as a brand?”
3. “How do we translate this understanding into a strategy for the hearing health-care profession?”

There are also references beginning to appear in presentations and literature that use the phrase

“hearing health sciences.” Hearing health care is NOT a “profession,” and hearing health is NOT a “science.” These terms and phrases create false identities eliminating the important distinctions between audiologists, physicians, and hearing aid dealers.

HEARING INSTRUMENT SCIENCE

There is no officially recognized science called “hearing instrument science.” At best, there could be a course of study referred to as “hearing aid technology.” There are undergraduate programs in communication sciences and disorders, and doctorate degrees related to “hearing science.”

The Phrontistery’s (2016) section on “sciences and studies” has a list that “defines 633 sciences, arts, and studies of various degrees of respectability and rarity, ranging from the common and esteemed (chemistry) to the obscure and quirky (peristerophily).” It includes audiology—study of hearing; otology—study of the ear; and otorhinolaryngology—study of the ear, nose, and throat. There is no study of “hearing instrument science.”

BOARD CERTIFIED VS. CERTIFIED

There are hearing aid dealer continuing education programs that allow individuals to become “board certified in hearing instrument science” (BC-HIS). The terms “certification” and “certified” are used more correctly in entry-level occupations that require high school diplomas, on-the-job training, apprenticeships, or technical/vocational associate



Grandiose job titles present an unwarranted presumption of competence to the unknowing and unsuspecting public.



TABLE 1. The term *hearing aid dealer* is most commonly used legally across the United States in laws pertaining to audiology and to hearing aid dealers.

STATUTORY LANGUAGE USED IN	AUDIOLOGY LAWS	HEARING AID DEALER LAWS
Hearing Aid Dealer	(25) AL, AK, AR, CT, DC, HI, ID, LA, ME, MI, NH, NY, NC, ND, OH, OK, PA, RI, UT, WV, WY, GA*, IN*, MA*, MO*	(17) AK, DC, HI, ID, IN, LA, ME, MI, NH, ND, OH, OK, PA, RI, WV, NC*, WY*
Hearing Aid Dispenser	(16) AZ, CA, DE, FL, KS, KY, MD, MN, MS, MT, NJ, NM, SD, VT, GA*, MA*	(13) AZ, CA, DE, IA, KS, MD, MT, NJ, NM, NY, SD, VT, IL*
Hearing Aid Specialist	(7) IA, NV, OR, SC, VA, WA, IN*	(10) FL, IA, MS, NV, OR, SC, VA, WA, NC*, WY*
Hearing Aid Provider	CO	CO
Hearing Instrument Specialist	(4) NE, TN, WI, MO*	(6) CT, MA, MO, TN, UT, WI
Hearing Instrument Dispenser	(2) IL, TX	(5) AR, NE, MN, TX, IL*
Hearing Instrument Dealer	NONE	(1) AL
Specialist in Hearing Instruments	NONE	(1) KY

* Used more than one descriptor

degrees for registration after completing a certificate program. *Board certification* is not recognized nor recommended vernacular in trades, vocations, occupations, or in health care for those who are entry-level technicians or ancillary support personnel. The common health-care nomenclature for someone who has gone through a certificate training program is *certified*, not *board certified*. Board certified (BC) is a rigorous process where pharmacists, physicians, nurses, etc., become BC in a given or particular specialty or subspecialty branch of a doctoring profession. For example, in health care, you see designations such as CNP, or certified nurse practitioner. Outside of health care, you are familiar with CPA, or certified public accountant, not board certified public accountant.

HEARING-INSTRUMENT SPECIALIST

During the past several decades, many hearing aid dealers have migrated to the term *hearing instrument specialist*, which, in the author's opinion, is an attempt to adopt a title that would better able dealers to influence their position in health care. According to legal definitions:

"A specialist in health care means a doctor who is an expert in treating certain diseases, certain health problems, certain parts of the body, or certain age groups" (U.S. Legal, 2016). Specialist is also commonly associated with someone who has earned an advanced or professional degree to enter professional practice, has become licensed, and achieved advanced training in, e.g., a residency program or fellowship program.

This author (Engelmann) reviewed 141 health-care job titles under the category of "clinical" (Compdata Survey and Consulting, 2016). After ruling out higher-level jobs for directors, managers, supervisors, and professions requiring bachelor's, master's, or doctorate degrees, there emerged a common list of identifiers related to the remaining personnel. These descriptors include technician, technologist, aide, and assistant. There was no relationship with or association to the designation *specialist* for them. Consequently, the reference to a hearing aid dealer as a hearing aid specialist or hearing-instrument specialist is a misnomer and not a recommended descriptor for a hearing aid dealer.

PROFESSIONALS IN HEARING HEALTH SCIENCES

There is no academic or professional course of study in hearing health sciences, because no such science exists. Check any university website that has a health sciences center (e.g., www.alliedhealthouhsc.edu) and look at its list of professions. You will not find “hearing health sciences,” but you will find audiology.

ALLIED-HEALTH PROFESSIONAL

Over the years, there also have been attempts to equate “hearing aid specialist” with “allied-health professional.” Those with technical/vocational/occupational careers are considered ancillary support personnel or extenders for various healing-arts doctoring professions. Allied-health professionals, on the other hand, have earned bachelor’s, master’s, or doctorate degrees and often are involved in research to advance scientific knowledge.

Arena et al (2011) note:

(A)llied health is included in eligibility criteria for participation in grant programs administered by the U.S. Labor Department and the U.S. Public Health Service.

(T)he elevation of educational programming has included better preparation of graduates to be consumers of the scientific literature and contributors to research in clinical practice, including research design, data analysis, and critical thinking.

(A)llied-health professions are one of the key groups responsible for studying and implementing scientific discoveries in the clinical setting.

Turner (1998) stated that “the overall research contribution of a group says something about the general characteristics of that group.” He adds that hearing aid dealers “make virtually no contribution to the research literature.” Hearing aid dealers simply are not allied-health professionals.

AUDIOPROSTHOLOGIST

The term *audioprosthologist* is clearly a derivative of the term “audiologist” (which is a legally protected term, ASHA, 1984). Audioprosthologist is recognized by many states’ attorneys general, as well as many audiology and speech-language pathology licensing boards as deceptive to the public. Consequently, use of the term in those states by non-audiologists is illegal.

Understanding Legal Language

Licensure laws are established to protect the public. They define eligibility, training requirements, and what activities are and are not allowed. These and other laws guard consumers against misleading, deceiving, and unscrupulous practices.

One of several hallmarks of branding the truth is the establishment of a designated and recognizable name that is suitable, accurate, and preserved over time. The author (Engelmann) reviewed state audiology and hearing aid dealer licensing laws. In both sets of laws, *audiologist* is the identifying descriptor for the audiology profession, proving that there is no confusion concerning the legal understanding in all 50 states and the District of Columbia.



TABLE 2. Statutory language used in audiology laws.

DESCRIPTOR	TOTAL	STATE/DISTRICT
Hearing Aid	46	AL, AK, AZ, AR, CA, CO, CT, DE, DC, FL, GA, HI, ID, IN, IA, KS, KY, LA, ME, MD, MA, MI, MN, MS, MT, NV, NH, NJ, NM, NY, NC, ND, OH, OK, OR, PA, RI, SC, SD, UT, VT, VA, WV, WY, MO*, TN*
Hearing Instrument	7	IL, NE, TX, WA, WI, MO*, TN*

* Used more than one descriptor

Throughout the hearing aid industry’s history, hearing aid dealers’ rebranding (branding the lie) and periodic changing of their titles adds to the vernacular confusion within state and federal agencies and the general public. As noted in TABLE 1, their many different names include hearing aid dealer, hearing aid dispenser, hearing aid specialist, hearing aid provider, hearing instrument specialist, hearing-instrument dispenser, hearing instrument dealer, and specialist in hearing instruments. They also have used board-certified, hearing instrument specialist, audioprosthologist, and certified hearing aid audiologist. The statutory language predominately used is “hearing aid dealer.”

The term *hearing instrument* is an anachronism and outmoded. Historically, this descriptor was an invented branding/marketing concept in a designed effort to replace the descriptor “hearing aid” so that the social stigma and stereotype of wearing hearing aids would be psychologically more appealing to hearing-impaired consumers. This strategy failed.

TABLE 2 illustrates that *hearing aid* is the dominant descriptor in audiology’s

statutes, not *hearing instrument*. The descriptor *hearing aid*, used in 46 states, remains the industry’s standard terminology by the following agencies and institutions—Federal Communications Commission (1988); U.S. Food and Drug Administration (2015); Hearing Industries Association (2016); National Center for Educational Statistics (2016); National Institute on Deafness and Other Communication Disorders (2016); U.S. Veterans Affairs Department Veterans Health Administration (2011); and the Federal Trade Commission (2010).

Legally, *intent* to do something wrong does not necessarily need to be intentional or purposeful to be unlawful (Encyclopedia of Everyday Law, 2016). U.S. Legal (2016) notes:

Prohibited Acts and Practices—Most state deceptive trade practices statutes include broad restrictions on “deceptive” or “unfair” trade practices. These states often include prohibitions against fraudulent practices and unconscionable practices. The Federal Trade Commission, when interpreting the FTCA (Federal Trade Commission Act), does not require that the person committing an act of deception have the intent to deceive. Moreover, the FTC does not require that actual deception occur. The FTC merely requires that a party have the capacity to deceive or commit an unfair trade practice. If a business or individual has this capacity or tendency to deceive, the FTC under the FTCA may order the company to cease and desist the deceptive or unfair practice. State statutes



similarly do not require that a company specifically intends to deceive, nor must a company always have knowledge that a statement is false to be liable for misrepresentations made to a consumer.

State laws stipulate that if someone provides services in an audiologist's scope of practice or uses terms that connote being an audiologist, they are "holding themselves out to the public" as an audiologist and must be licensed as one. Hearing aid dealers cannot infer directly or indirectly that they are an audiologist or a physician, and they are bound by law to exercise only those work roles specifically allowed by statute.

Kirkwood (2013) noted that the International Hearing Society's executive director sent a letter to the Veterans Administration. In part, she wrote, "Contrary to outdated and inaccurate perceptions, hearing aid specialists do not simply fit and 'sell' hearing aids but are full-fledged hearing care providers." This statement could be construed to disregard licensure laws, which outline the limited work roles, i.e., job duties and responsibilities, of hearing aid dealers. The desire of dealers to be something they are not or to do something they are not licensed to do cannot take precedence over the rule of law. For example, hearing aid dealers are restricted by state and federal laws to fit and sell hearing aids (product codes 874.3300 and 874.3305) and are not licensed to sell tinnitus maskers (product code 874.3400); (USDA-Medical Devices, 2015). Licensees and corporations

cannot arbitrarily choose which laws to follow and which to disregard.

Cavitt and Czuhajewski's letter (2015) to the Office of Apprenticeship reads that they "respectfully request rescission of the approval and certification of national guidelines for apprenticeship standards developed by the International Hearing Society for the occupation of hearing aid specialist."

They further state, "The standards go far beyond the typical scope of practice of a hearing aid specialist (HAS) in the United States, as that is defined by state law. The certification does not therefore 'safeguard the welfare of the apprentices...nor is the good of the public served by the certification, indeed it will be harmed.'"

Conclusion

Part 1 of this article focused on many hearing aid dealers' attempts to "brand the lie" by promoting misrepresentative terminology that inflates titles and obscures hearing aid dealer's and audiologist's dissimilar identities and provides evidence to help clarify the differences in statutory language that govern licensing along with introducing deceptive trade practices statutes.

We must become vigilant about rejecting deceptive terms like hearing health-care profession(al) as a brand that can distort or eliminate our identities, resulting in consumer confusion. No one, or group, should advance and expect more recognition simply because of how they are "perceived" after inflating and misusing titles and labels.

“

If you're inflating job titles, you're breaking down traditional boundaries in the duties category. While employers may have good intentions, if you start inflating titles, the titles themselves don't reflect the duties of the position and required expertise.

”

Thompson Street Capital Partners (TSCP) is a private equity firm based in St. Louis, Missouri that invests in growing niche leaders across a variety of industry sectors, including healthcare services. TSCP has partnered with Alpaca Audiology, and together we are actively pursuing complementary acquisitions in the audiology industry to accelerate the growth of the platform. Representative companies include:

- Audiology clinics, with a preference for practices that are independent from the major hearing aid manufacturers.
- Buying groups and service providers that improve clinic profitability and patient satisfaction.

COMPLETED ACQUISITIONS



A Division of Alpaca Audiology

(Indianapolis, IN)

Provides hands-on consulting services to improve patient satisfaction and the profitability of clinics throughout the U.S.



(Grandville, MI)

Provides professional audiology services including hearing tests, high-tech hearing aids and accessories.



(Alton, IL)

Provides professional audiology services including hearing tests, high-tech hearing aids and accessories.

ALPACA AUDIOLOGY

- Leading buying group for independent audiology practices.
- Provides competitive pricing to more than 400 independent members.
- Provider of clinic improvement consulting services.
- Portfolio of 37 clinics.

KEY MARKET DRIVERS

- Demand for hearing health services and products is increasing due to an aging population, improved social acceptance of hearing aid use, and continued technological innovation.
- Audiology is a high-service, high-touch business with a loyal customer base.
- Purchasing from all the major hearing aid manufacturers improves negotiating power, prices and flexibility for buying group members.

For More Information Contact: **Ray Wagner** • Vice President • (314) 446-3315 • rwagner@tscp.com

Instead, the rewards of advancement and respected recognition in occupations and professions are earned by what is “achieved” through more demanding higher education and licensing requirements. Part 2 will continue with discussions regarding identification of health-care language; and the description of “professional” language for professions compared to “occupational” language for vocations. Branding the lie negatively impacts consumers, and, in the realm of health care, we must accept nothing less than branding the truth. 🙏

Larry Engelmann, AuD, is an audiologist and private practice owner at the Audiology Clinic Inc., in Oklahoma City, Oklahoma.

DISCLAIMER

The views and opinions expressed in this article are those of the author and do not necessarily represent the official policy, position, or opinion of the American Academy of Audiology; further, the Academy does not endorse any products or services mentioned in this article.

Part 2 of this article will appear in the September/October 2018 issue of *Audiology Today*.

References

- American Speech-Language-Hearing Association. (1984) American Speech-Language-Hearing Assn v. Nat. Hearing Aid Soc, 224 U.S. Patent Quarterly 798 (TTAB 1984).
- Arena RA, Goldberg LR, Ingersoll CD, Larsen DS, Shelledy D. (2011) Special report—research in the allied health professions: Why fund it? A report of the Association of Schools of Allied Health Professions (ASAHP) research committee. *J Allied Health* 40(3):161–166.
- Cavitt KM, Czuhajewski S. (2015) Academy of Doctors of Audiology letter to John Ladd, Administrator, Office of Apprenticeship Employment and Training Administration, USDOL, Re: Apprenticeship Standards for Hearing Aid Specialists.
- Compdata Surveys and Consulting. (2016) Health care job titles. www.compdatasurveys.com/compensation/healthcare/healthcare-job-titles (accessed April 27, 2016).
- Cooling G. (2016) Setting the terms of reference for the brand of hearing health care. *Hear Health Tech Matters*. hearinghealthmatters.org/hearinprivatepractice/2016/brand-hearing-healthcare-audiology/ (March 29, 2016).
- Encyclopedia of Everyday Law. (2016) Deceptive trade practices. hsb-lhs.wikispaces.com/file/view/Deceptive+Trade+Practices.pdf (accessed April 25, 2016).
- Engelmann L. (2017) Report to the Federal Trade Commission (FTC): testimony for the FTC’s issues in hearing health care workshop. www.ftc.gov/system/files/documents/public_comments/2017/05/00080-140696.pdf (accessed May 2, 2017, #00080).
- Federal Communications Commission. (1988) Federal Communications Commission Hearing Aid Compatibility Act of 1988, www.transition.fcc.gov/Bureaus/OSEC/library/legislative_histories/1337.pdf.
- Federal Trade Commission. (2010) FTC offers sound advice for people considering buying a hearing aid, www.ftc.gov/system/files/documents/public.../00080-140696.pdf (accessed May 24, 2016).
- Hearing Industries Association (HIA), Information About Hearing Aids, www.hearing.org/Content.aspx?id=46 (accessed May 10, 2016).
- Kirkwood D. (2013) IHS says hearing aid specialists are fit to serve nation’s veterans. www.hearinghealthmatters.org/hearingnewswatch/2013/ihs-says-hearing-aid-specialists-are-fit-to-serve-nations-veterans.
- National Center for Educational Statistics (NCES). (2016) Classification of Instructional Programs (CIP). CIP Code 51.0918, www.nces.ed.gov (accessed May 24, 2016).
- National Institute on Deafness and Other Communication Disorders (NIDCD). (2016) How can I find out if I need a hearing aid? www.nidcd.nih.gov/health/hearing_aids#hearingaid_03 (accessed May 24, 2016).

Office of Apprenticeship (OA) U.S. Labor Department's Employment and Training Administration. (2015) New national guidelines for apprenticeship standards for the International Hearing Society. *Bulletin* 2015–23.

Pae DJ. (2013) The legal pitfalls of job title inflation (Part 1): apparent authority and employee misclassification, Association of Corporate Counsel, www.acc.com/legalresources/quickcounsel/lpjtii.cfm.

Phrontistery. (2016) Sciences and Studies, phrontistery.info/sciences.html (accessed April 1, 2016).

Skousen JK. (2016) Employment law expert advises companies on legal risks of job title inflation. www.employmentlawdaily.com/index.php/news/employment-law-advises-companies-on-legal-risks-of-job-title-inflation (accessed April 28, 2016).

Turner RG. (1998) The hearing aid expert: audiologist, dealer, or otolaryngologist? *Am J Aud* 7:5–7.

U.S. Food and Drug Administration (FDA)—Medical Devices (2015): Regulatory requirements for hearing aid devices and personal sound amplification products—draft guidance for industry and Food and Drug Administration staff. www.fda.gov/medicaldevices/deviceregulationandguidance/guidancedocuments/ucm373461.htm (accessed December 26, 2017).

U.S. Food and Drug Administration (FDA). (2015) Code of Federal Regulations Title 21, Subpart H, Section 801.420—Hearing aid devices; professional and patient labeling. www.accessdata.fda.gov/scripts/cdrh/cfdocs/cfcfr/cfrsearch.cfm?fr=801.420 (accessed May 10, 2016).

U.S. Legal Inc. (2016) Consumer protection—deceptive trades practices—prohibited acts and practices. www.consumerprotection.uslegal.com (accessed April 25, 2016).

U.S. Veterans Affairs Department Veterans Health Administration (VHA). (2011) VHA Handbook 1170.02 Transmittal sheet, *VHA Audiology and Speech-Language Pathology Services*, 1–95 (March 14, 2011).

Williams J. (2016) The basics of branding. www.entrepreneur.com/article/77408 (accessed May 6, 2016).

RESEARCH GRANTS
= HEARING & BALANCE

Now Accepting Applications!

CATEGORIES	AMOUNT
New Investigator Grant	Up to \$10,000
Student Investigator Grants	Up to \$5,000
• General Audiology/Hearing Science • Vestibular and Balance Science	
Student Summer Fellowship	Up to \$2,500

DUE DATE: January 5, 2019



**AMERICAN
ACADEMY OF
AUDIOLOGY**



**AMERICAN
ACADEMY OF
AUDIOLOGY
FOUNDATION**

www.audiology.org

KEYWORDS: RESEARCH GRANTS



ZPower silver-zinc rechargeable batteries are a new technology now available for select products from almost every major hearing aid manufacturer. With new technology comes many questions, so we have introduced an “Ask the Expert” program to answer your questions about silver-zinc battery technology.

How often should the batteries be charged?

The batteries should be fully charged every night. Once the hearing aids are finished charging, the indicator lights turn from blinking green to solid green. A full charge may take up to 7 hours — the charge time varies based on how much the battery was depleted during the day.

What happens when the silver-zinc rechargeable battery is getting low on power?

The hearing aid wearer will hear the low battery warning. Once the low battery warning occurs or once a hearing aid shuts off due to a low battery condition, do not open the battery door to reboot the hearing aid. Rebooting after the low battery warning can over-discharge the battery. If a low battery warning from the hearing aids is received, place the hearing aids in the charging base for charging or replace with non-rechargeable batteries. Store your rechargeable batteries in a safe place away from metal objects like coins or keys.

Should a patient open the battery door to turn off the hearing aids when not in use?

If a patient removes their hearing aids during the day, the hearing aids should be put back on the charger. Rule of thumb — if the hearing aids are not on the ears they should be in the charger. The batteries will not overcharge, and this will not decrease the overall life of the battery. If the charger is not available, it's ok to open the battery door for a few hours until they are worn or can be put on the charger. If the hearing aids are not going to be worn for an extended period, the batteries should be removed.

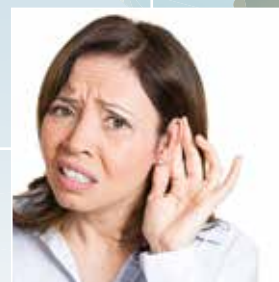
Have more questions? Please visit www.ZPowerhearing.com/ask-the-expert to enter your question.

Promoting Audiology Worldwide

Global Audiology Initiative



Providing an understanding of audiology practice to connect stakeholders in hearing health care around the world.





Background and the Need

It is well established that hearing loss is one of most frequent chronic conditions in older adults and a major health issue, particularly for the low- and middle-income nations. As an example, the World Health Organization (WHO) estimates that there are more than 360 million people with disabling hearing loss (WHO, 2012). Data indicate that more than 80 percent of this population are from low- and middle-income countries with little to no access to any audiological services. Estimates from WHO suggest that in developing nations only about 3 percent of those in need of hearing care have access to and avail themselves of appropriate services (WHO, 2004). Hearing care services are impeded mainly by the two following major barriers:

1. **Service clustering**—Most of the services are confined to urban/suburban areas. For example, a survey of audiologists in private practice reported that only 13 percent are working in rural settings (ASHA, 2015). Even in advanced developing countries like India, greater numbers of hearing-care services are in urban areas with limited access to residents in rural areas (Manchaiah, 2016).
2. **Cost**—High purchase and maintenance expenses are related to hearing aid use. Therefore, there is a clear need for services that are capable of reaching

individuals underserved due to limited resources, and those who are deprived financially.

Audiology education and practice vary considerably across countries. In North America and some parts of Europe audiology is well defined, and audiology services and delivery models are quite developed and sophisticated; in some countries audiology is considered an “autonomous” profession. In most parts of the world, however, the profession of audiology is still in its infancy and is viewed as a support profession under the umbrella of another profession (e.g., otolaryngology, acoustics, etc.). Hence, there is much work to be done in audiology to bridge this inequality in education and access to services. Moreover, much can be learned, even within the developed world, by comparing audiology practices across countries and taking inspirations from established and functional working practices to enhance the standard of audiological care.

The first step in bridging the gap in the access to audiology care is to better understand audiology education and practice.

We believe the first step in bridging the gap in the access to audiology care is to better understand audiology education and practice; and to form a network to connect audiologists and other stakeholders around the world. Based on this premise, our work began on the Global Audiology Initiative.

Objective

Global Audiology, known as the Global Resource for Audiology Information Networking (GRAIN), is a nonprofit initiative that is focused on promoting networking among all stakeholders in hearing health care and helping to develop accurate and current knowledge about audiological practices worldwide. We believe that promoting networking and collaboration and also developing the knowledge about current practice trends is the first step in helping to standardize audiology practice and ultimately improve audiological care, facilitate the standardization of audiology practice and help with providing better access to audiology services. The Global Audiology ePlatform is available to all without charge.

Activities and Method

GRAIN uses three methods to accomplish its goals. These include the following:

1. Building an infrastructure—Develop a website that provides information about audiology education and practice around the world.
2. Building a team—Recruit key individuals who will volunteer to serve as resource editors and key contact people for the region/country.
3. Creating an opportunity for networking activities—Organize ongoing networking activities to promote communication and interactions between all hearing health-care professionals around the world.

Each of these activities has been implemented and is in various stages of development.

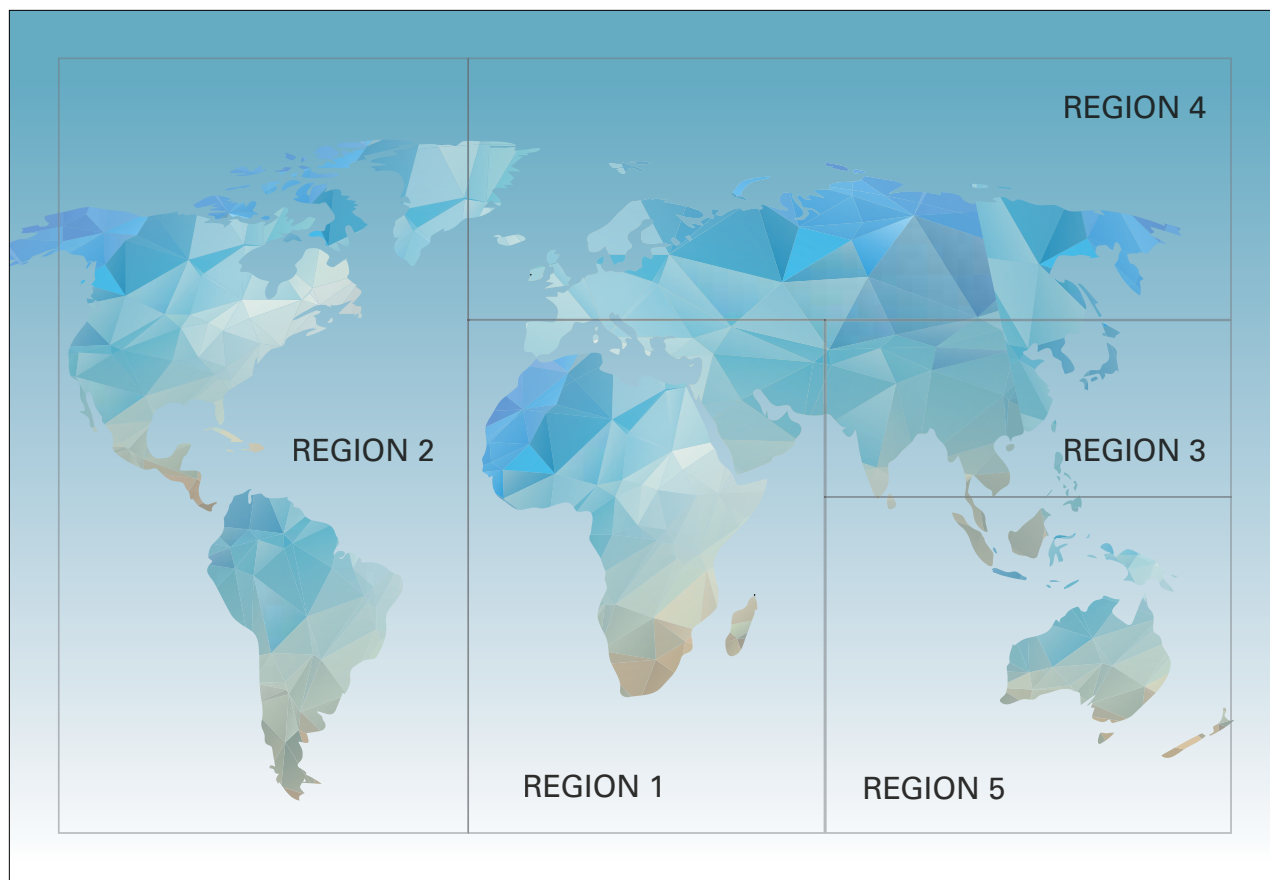


FIGURE 1. To populate the Global Audiology website with information, teams were created based on the United Nations world regions and subregions.

BUILDING AN INFRASTRUCTURE

The website for Global Audiology (www.globalaudiology.org) provides up-to-date information about audiology education and practice in the regions across the world. The content of the website is managed by a web developer and the editors. This will ensure that the information presented in the website is peer-reviewed by those who have knowledge of audiology and audiology practice within a region.

BUILDING A TEAM

To make the work manageable, the world has been divided into five regions and subregions based on the United Nations classification (see FIGURE 1). The five regions include Africa, Americas, Asia, Europe, and Oceania. The project will work with the following editorial structure:

- Co-founders and senior editors (SEs)
- Regional resource editors (RREs)
- Subregional resource editors (SRREs)
- Subregional contributors (SRCs)

The overall responsibility of SEs is to ensure that GRAIN meets the stated goals and objectives, which involve providing the following:

1. A description of audiology practice around the world.
2. Opportunity for information exchange and networking for stakeholders in ear and hearing health care.

RREs will be invited to represent the five regions referred to earlier. They will be chosen based on their familiarity with audiology activities and resources that are available within their regions. Each RRE will invite the

SRREs to represent defined world subregions based on the United Nations classification.

There will be 22 SRREs, who will be chosen based on their familiarity with audiology activities and resources that are available within the subregions. The SRREs will then find and invite suitable SRCs to represent a particular country and provide necessary information about the country.

There will be one SRC for each country, who will be chosen based on familiarity with audiology activities and resources that are available within the country.

CREATING AN OPPORTUNITY FOR NETWORKING ACTIVITIES

The Global Audiology team will organize activities to promote networking among various stakeholders of hearing health care around the world. These activities can be either face-to-face meetings during professional conferences and/or virtual meetings. These meetings will help foster discussion, make specific action plans to develop audiology knowledge across the globe, and help develop audiology services for underserved populations.

Potential Implications

The hope is that Global Audiology will be of interest to various stakeholders including audiologists, hearing scientists, otologists/otolaryngologists, people with hearing loss, related health-care professionals, and hearing instrument manufacturers/specialists, and various governmental and nongovernmental organizations. While the potential impacts of such an initiative can be hard to anticipate, we believe and hope that this initiative will have the following implications:

- Generate accurate and reliable information about the audiology profession from each country to help redefine audiology education and practice around the world.
- Promote a network of stakeholders within and across the countries to help the exchange of ideas, particularly in promoting good practice.
- Promote a network of stakeholders to help stimulate humanitarian activities and further help promote access to hearing care for underserved populations.

The professional network that is created through this initiative can be used for conducting multicenter cooperative studies that will help to better understand the crosscultural differences and similarities in various aspects of ear and hearing health care.

The professional network that is developing through this initiative can be helpful when mobilizing and coordinating advocacy activities related to deafness and hearing loss prevention program, as initiated by the World Health Organization.

The Future

GRAIN is a new initiative that is attempting to have an impact on audiology around the world by providing an opportunity for audiologists and all those interested in hearing, hearing health and hearing loss prevention to network through an active website. The website (www.globalaudiology.org) is now available; several of the key editors have volunteered to represent geographic regions, and more are being recruited. There are completed webpages available for 11 countries. We hope that the future of GRAIN will be a positive impact on all aspects of audiology and audiology health care worldwide. We believe that this unique model can inspire health professionals in other health fields to build global network to promote access to care and good practice around the world. 

Vinaya Manchaiah AuD, is a Jo Mayo-Endorsed professor in the Department of Speech and Hearing Sciences at Lamar University in Beaumont, Texas.

Ross Roeser, PhD, is a professor at, and Rebecca Rogers, AuD, is a graduate of the School of Behavioral and Brain Sciences, University of Texas at Dallas/Callier Center for Communication Disorders, Dallas, Texas.

References

- American Speech-Language-Hearing Association. (2015) 2014 Audiology Survey Report: Private Practice. www.asha.org (accessed on September 23, 2016).
- Manchaiah V. (2016) Hearing healthcare in India. *ENT Audiol News* 25(1):73–74.
- World Health Organization. (2004) *Guidelines for Hearing Aids and Services for Developing Countries* (2nd ed.). Geneva, Switzerland: World Health Organization.
- World Health Organization. (2012) Global Estimates on Prevalence of Hearing Loss. www.who.int/pbd/deafness/WHO_GE_HL.pdf (accessed on September 23, 2016).

enchantTM

Simply streaming.

Even more wireless options with Enchant

Smartphone users, rejoice!

Wirelessly transmit stereo sound from all Bluetooth®
2.1 smartphones and devices to Enchant.*

Now patients with any modern smartphone can enjoy even more wireless convenience. Enchant's Dual-Radio System delivers fast ear-to-ear connection, and its 2.4 GHz Bluetooth technology allows direct wireless streaming from iPhones.® With the new SoundClip-A, add the wow of extra capabilities, such as:

- Stereo streaming from Android phones
- Wireless, remote/partner microphone
- Hands-free calling
- Remote volume control, program changes, and call pickup

Introduce your patients to Enchant and SoundClip-A. And help their everyday devices add to how Everyday Sounds Better. www.sonici.com/connectivity



*Stereo-streaming audio available for all Bluetooth 2.1 enabled smartphones and devices. Using Enchant for direct audio streaming with Android smartphones requires the SoundClip-A accessory. For compatibility details, visit www.sonici.com/global/compatibility. Apple, the Apple logo, iPhone, iPad, iPod touch, and Apple Watch are trademarks of Apple Inc., registered in the U.S. and other countries. App Store is a service mark of Apple Inc. Android, Google Play, and the Google Play logo are trademarks of Google Inc. Bluetooth is a registered trademark owned by Bluetooth SIG, Inc. USA.



ARC18 GENETICS AND HEARING LOSS

APRIL 18 | NASHVILLE, TN | THE FIRST DAY OF AAA 2018

BY KATHLEEN ARNOS

The Academy Research Conference (ARC) 2018 provided an overview of progress in the field of genetics and hearing loss from both research and clinical perspectives. As chair of ARC 2018, I was joined by several knowledgeable individuals on the organizing committee, including Dr. Zarin Mehta from A.T. Sill University, Dr. Wendy Hanks from Pacific University, and Dr. Jonathan Whitton from Decibel Therapeutics. My thanks to them for their expert guidance. I would also like to thank Jennifer Shinn, University of Kentucky, as well as Joan Haller, director of meetings with the Academy and Heather Finney, meetings manager with the Academy, all of whom were instrumental in organizing this conference.

The organizing committee chose speakers who were exceptionally qualified to address recent developments in gene discovery, testing, and therapeutics, based on their clinical and research expertise. The technological advances in the field of genetics and hearing loss over the past 35 years has been nothing short of amazing.

In the 1980s, the tools of the trade for evaluating a genetic cause of hearing loss in a client consisted almost entirely of pedigree analysis and physical examinations looking for features that indicated a syndromic cause of hearing loss. This approach allowed geneticists to sometimes identify a specific syndrome, and sometimes identify nonsyndromic hearing loss inherited in a specific pattern. At that time, however, the molecular tools to identify causative genes did not exist.

Beginning in the 1990s, significant progress was made in mapping and cloning of genes related to hearing loss, including the discovery in 1997 of a major contributor to genetic hearing loss, the *GJB2* gene (Connexin 26). Since that time, progress in identifying genes related to hearing loss has been explosive and has expanded to include not only single genes inherited in Mendelian patterns that are common causes of congenital and early-onset hearing loss, but genes that contribute to multifactorial conditions such as balance disorders, and noise-induced or age-related hearing loss.

In the past decade, next generation DNA sequencing made its appearance, allowing the rapid sequencing of specific genes or the entire genome in individuals. In the past year or two, a new age in therapeutics has been heralded in the progress made in gene-editing technologies, including one in particular called CRISPR-Cas9. Soon, we may begin to see this technique applied to patients with hereditary forms of hearing loss.

These innovations and more were addressed by the ARC 2018 speakers. These five speakers included otolaryngologists, medical geneticists, and a pediatric clinical geneticist who have devoted their careers to the clinical and molecular characterization of genetic forms of hearing loss and bringing new developments from the research bench to clinical practice. Together with eight poster presentations by clinicians, researchers, and students, ARC 2018 speakers masterfully conveyed the most recent discoveries in this field to the attendees. The following abstracts from each of the speakers summarize their presentations.

The Basics of Genetics for the Clinician

Marci Lesperance, MD, FACS, Professor and Division Chief, Pediatric Otolaryngology, University of Michigan Health System, Ann Arbor, Michigan

Approximately 50 percent of childhood sensorineural hearing loss (SNHL) is genetic in origin, and about 80 percent of genetic cases are inherited as autosomal recessive traits (Marazita et al, 1993). Autosomal dominant inheritance is estimated at 18 percent of cases, and the remainder have X-linked or mitochondrial inheritance. It is anticipated that the proportion of genetic cases will increase in the future, as medical treatments are developed that help prevent hearing loss due to environmental or acquired factors. The evaluation of the patient with sensorineural hearing loss should include review of the family history as well as any potential risk indicators for environmental hearing loss.

Both computed tomography (CT) and magnetic resonance imaging (MRI) play a role in evaluation of temporal bone anatomy. CT provides excellent bony detail, does not require IV contrast, and is less likely to require sedation. MRI is preferable for evaluation of auditory nerve hypoplasia and aplasia, particularly in the setting of unilateral profound loss. However, MRI is more likely to require IV contrast and sedation and is typically more expensive.

The most common gene underlying recessive non-syndromic SNHL is *GJB2*, which encodes the Connexin 26 protein (Estivill et al, 1998). The most common mutation in *GJB2* (35delG) is associated with profound congenital SNHL, but it is important to recognize that patients with *GJB2* mutations may present with mild or moderate hearing loss and even normal hearing, and that modifier genes exist (Hilgert et al, 2009).

Enlarged vestibular aqueduct (EVA) syndrome is a common cause of SNHL identified in children who pass the newborn hearing screen. Approximately 25 percent

of patients with bilateral EVA have biallelic mutations in the *SLC26A4* gene, whereas 50 percent have monoallelic mutations without identifying a second mutation (Choi et al, 2009). A recent study identified a Caucasian EVA haplotype, which may explain the “missing” second mutation (Chattaraj et al, 2017). When this haplotype is found in trans with a pathological *SLC26A4* allele, the penetrance of hearing loss is 85 percent.

Congenital human cytomegalovirus (HCMV) infection is the most important acquired cause of childhood SNHL in the U.S. population. HCMV infection must be diagnosed in the first three weeks of life to confirm congenital exposure. Congenital HCMV infection is diagnosed based on maternal antibody conversion during pregnancy or by identifying virus in infant saliva, blood, or urine. Some states and centers have implemented HCMV screening for all newborns who refer on newborn hearing screening. Clinical trials are underway to assess the benefit of drug treatment (oral valgancyclovir) to prevent development or progression of SNHL in children with congenital HCMV infection.

The potential benefits of genetic evaluation and genetic testing include ascertaining the etiology of hearing loss, estimating recurrence risk, assessing prognosis for progression of hearing loss, and recognizing possible syndromes. Our focus group study found that patients are not always given sufficient information to make an informed decision (Lesperance et al, 2017). The audiologist is an important member of the health-care team to help elicit patient preferences and identify patients who are candidates for genetic evaluation.



References

- Marazita ML, Ploughman LM, Rawlings B, Remington E, Arnos KS, Nance WE. (1993) Genetic epidemiological studies of early-onset deafness in the U.S. school-age population. *Am J Med Genet* 46(5):486–491.
- Estivill X, Fortina P, Surrey S, Rabionet R, Melchionda S, D'Agruma L, Mansfield E, Rappaport E, Govea N, Milà M, Zelante L, Gasparini P. (1998) Connexin-26 mutations in sporadic and inherited sensorineural deafness. *Lancet* 351(9100):394–398.
- Hilgert N, Huentelman MJ, Thorburn AQ, et al. (2009) Phenotypic variability of patients homozygous for the GJB2 mutation 35delG cannot be explained by the influence of one major modifier gene. *Eur J Hum Genet* (17):517–524.
- Choi BY, Stewart AK, Madeo AC, et al. (2009) Hypo-functional SLC26A4 variants associated with non-syndromic hearing loss and enlargement of the vestibular aqueduct: genotype-phenotype correlation or coincidental polymorphisms? *Hum Mutat* 30(4):599–608.
- Chattaraj P, Munjal T, Honda K, Rendtorff ND, Ratay JS, Muskett JA, Risso DS, Roux I, Gertz EM, Schäffer AA, Friedman TB, Morell RJ, Tranebjærg L, Griffith AJ. (2017) A common SLC26A4-linked haplotype underlying non-syndromic hearing loss with enlargement of the vestibular aqueduct. *J Med Genet* 54(10):665–673.
- Lesperance MM, Winkler E, Melendez TL, Yashar BM. (2017) “My plate is full”: reasons for declining a genetic evaluation of hearing loss. *J Genet Couns* October 4:1–11.



“JUNO® has everything we need in a single unit. It’s installation-free, offers outstanding sound quality and coverage, provides easy integration with PFM systems, and — most important to us — enables easy lesson capture.”

— Stephanie Childers, AuD., CCC-A
Mississippi Bend (Iowa) Area Education Agency Leadership Committee

FrontRow JUNO has all the portability, sound quality, and PFM transparency you expect in any classroom sound system. But it’s much more.

Digital feedback suppression is built in.

It’s a media hub, so students can benefit from audio from voice, media, and even emergency announcements.

And it makes lesson capture — MP4 videos of lesson content shown in class plus audio from mics and media — completely painless. For students with special learning needs, that ability to review material can be critical.

For a free trial or just a chat about how we can help, visit **gofrontrow.com**.

gofrontrow.com/at-juno



Genetic Testing and Counseling for Hearing Loss in Era of Precision Medicine

Arti Pandya, MD, MBA, Associate Professor and Division Chief, Division of Genetics and Metabolism, Department of Pediatrics, University of North Carolina School of Medicine, Chapel Hill, North Carolina

Hearing loss is one of the most common neurosensory deficit affecting one in 500 children, with profound hearing loss identified in one in 1,000 newborns (Morton and Nance, 2006). In the past two decades, we have witnessed remarkable progress in our ability to diagnose and evaluate individuals with hearing loss due to the explosion in knowledge and availability of newer technology.

Our understanding of the genetic basis for congenital hearing loss has increased exponentially with the implementation of the Human Genome Project and completion of sequencing the human genome. There also has been simultaneous progress in early detection of hearing loss through the universal audiological newborn screening and in identifying a genetic etiology for a large proportion of children with profound loss.

Currently there are more than 250 genes identified that are important in both non-syndromic and syndromic forms of hearing loss. With the availability of technology

to examine the entire coding region of the human genome and the recent initiative for precision medicine, there are definite opportunities to tailor the care and management of children and adults with hearing loss.

The first gene implicated in non-syndromic human deafness, *GJB2*, was identified in 1997 (Kelsell et al, 1997). Sequence changes in *GJB2*, a gap junction beta 2 gene that codes for the protein Connexin 26 (Cx26), accounts for 50 percent to 80 percent of all profound recessive hearing loss. A single sequence change involving a deletion of a guanine nucleotide in a series of six Gs known as 35delG accounts for 70 percent of the pathologic alleles.

Interestingly in at least 20 percent of individuals with a *GJB2* related hearing loss, immediate family history is often negative and a detailed pedigree may help identify the genetic nature. Testing for mutations in *GJB2* is available through several diagnostic laboratories and offered as part of the initial work up of all children diagnosed with hearing loss. A positive result helps in accurate counseling and avoids more expensive and invasive testing.

Today, more than 130 genes are associated with nonsyndromic hearing loss. In addition, more than 600 clinical syndromes include deafness and several of these have a gene identified as its cause; in many, deafness is the first presenting clinical feature. A thorough evaluation of the infant by a clinical geneticist helps rule out the more common syndromic forms of deafness such as Waardenburg syndrome, Branchio-Oto-Renal syndrome, etc.

This recent explosion in gene discovery for hearing loss is attributed to technological advances in massively parallel sequencing (MPS) also referred to as Next Generation Sequencing (NGS). Between 1995–2010, nearly 75 percent of the genes



were identified using the more traditional methods such as linkage and homozygosity mapping, however since 2010, an additional 25 percent of genes have been identified in the short span, emphasizing the impact of these newer technologies in enhancing gene discovery (Atik et al, 2015).

A history of deafness segregating through maternal relatives should raise suspicion about mitochondrial inheritance and mutations in the *MT-RNR1* (12SrRNA) mitochondrial gene predisposing to aminoglycoside ototoxicity. Molecular screening for mutations in the mitochondrial gene is offered, especially to infants from high-risk ethnic groups. A prior knowledge of this mutation in an infant or pregnant mother would allow prevention of hearing loss by avoiding nonjudicious use of aminoglycoside antibiotics.

The extreme genetic heterogeneity for hearing loss has precluded comprehensive genetic testing that is cost effective and easily accessible. Until a few years ago, testing was limited to the more common genetic forms of HL including the *GJB2*, *GJB6*, and select mitochondrial genes. This no doubt was helpful in those families where a pathogenic mutation was identified, and it helped stop the diagnostic odyssey, offer precise genetic counseling and recurrence risks, and prevent onset of HL if a mitochondrial A1555G change was detected prior to administration of aminoglycoside antibiotics (Pandya and Arnos, 2006).

With the advent and availability of technology using massively parallel DNA sequencing, it is now possible to interrogate most genes identified for syndromic and non-syndromic hearing loss using large gene panels (Shearer et al, 2011). Such platforms and panels are offered through a few laboratories in the United States; however, there remains variability in the number and types of genes included on these panels (Jasper et al, 2015). In addition, prospective studies and literature review to assess the sensitivity of panels using MPS suggest an overall diagnostic rate of 42 percent, with higher yield if an individual has bilateral AR NSHL vs milder forms of HL (Shearer et al, 2013; Shearer and Smith, 2015).

No doubt, the current platforms of gene panels have facilitated dramatic improvements in the diagnostic yield, but there remains the need for diagnostic panels that are more comprehensive and include genes implicated in both syndromic and nonsyndromic hearing loss. Although one can consider using whole exome sequencing (WES) in lieu of using targeted gene panels for hearing loss, considerations favoring the latter approach include the high cost, and the identification of secondary findings unrelated to the presenting phenotype with WES (Shearer et al, 2013). Not only does having an etiologic diagnosis for

HL provide knowledge about the natural history, progression of HL, associated organ system involvement and precise recurrence risk, but in the near future it will form the basis for novel gene- or mutation-specific treatment options to ameliorate or treat genetic HL.

References

- Atik T, Bademci G, Diaz-Horta O, Blanton SH, Tekin M. (2015) Whole-exome sequencing and its impact in hereditary hearing loss. *Genetics Res* 97:8.
- Jasper KM, Jamshidi A, Reilly BK. (2015) Pediatric otolaryngology, molecular diagnosis of hereditary hearing loss: next-generation sequencing approach. *Curr Opin Otolaryngol Head Neck Sur* 23(6):480–484.
- Kelsell DP, Dunlop J, Stevens HP, et al. (1997) Connexin 26 mutations in hereditary non-syndromic sensorineural deafness. *Nature* 387(6628):80–83.
- Morton CC, Nance WE. (2006) Newborn hearing screening—a silent revolution. *New Eng J Med* 354(20):2151–2164.
- Pandya A, Arnos KS. (2006) Genetic evaluation and counseling in the context of early hearing detection and intervention. *Sem Hear* 27(3):205–212.
- Shearer AE, Smith RJ. (2015) Massively parallel sequencing for genetic diagnosis of hearing loss: the new standard of care. *Otolaryngol Head Neck Surg* 153(2):175–182.
- Shearer AE, Black-Ziegelbein EA, Hildebrand MS, Eppsteiner RW, Ravi H, Joshi S, Guiffre AC, Sloan CM, Happe S, Howard SD, Novak B, Deluca AP, Taylor KR, Scheetz TE, Braun TA, Casavant TL, Kimberling WJ, Leproust EM, Smith RJ. (2013) Advancing genetic testing for deafness with genomic technology. *J Med Gen* 50(9):627–634.
- Shearer AE, Hildebrand MS, Sloan CM, Smith RJ. (2011) Deafness in the genomics era. *Hear Res* 282(1):1–9.

Age-Related Hearing Loss and Noise-Induced Hearing Loss—Old Problems and New Paradigms

Lawrence R. Lustig, MD, and Howard W. Smith, Professor and Chair, Department of Otolaryngology–Head and Neck Surgery, Columbia University Vagelos College of Physicians and Surgeons, NewYork-Presbyterian/Columbia University Irving Medical Center

Presbycusis, or age-related hearing loss (ARHL), is a well-known phenomenon that will affect nearly every one of us. Forty percent of the hearing impaired are older than 65, and with our population aging every year, the number of people with ARHL will continue to increase. Studies in animal models, such as the C57 mouse, clearly have identified genetic factors associated with age-related hearing loss, where animals show loss of spiral ganglion neurons, hair cells, and other cellular structures within the cochlea. At least within the C57 mouse, the culprit seems to be a protein associated with the hair cell transduction channel, called cadherin 23. In contrast, large genome-wide associated studies have implicated proteins associated with spiral ganglion neurons as a possible cause of ARHL. Last, aging changes in mitochondria associated with specific genetic markers also have been associated with ARHL due to effects on the electron transport chain that lead to oxidative damage.

A seemingly different problem is noise-induced hearing loss (NIHL). Sounds exceeding 85 dB are potentially injurious to the cochlea, especially with prolonged exposure. Noise damage results in a number of injuries to the cochlea, including hair cells, while susceptibility to noise-induced hearing loss has been linked strongly to the efferent neuronal system within the cochlea. While it traditionally has been believed that hearing loss due to noise exposure does not progress once the exposure is

discontinued, an accumulating body of research strongly suggests that early noise exposure predisposes to more accelerated age-related hearing loss and that even isolated “reversible” noise exposure can lead to significant neural damage. The increased prevalence of personal music systems and their ability to cause noise-induced hearing loss underscores the importance of this problem in society today.

Despite the growing body of evidence that noise-induced hearing loss accelerates age-related hearing loss, our treatments are still limited to hearing aids for mild to severe losses and cochlear implants for severe to profound losses. Newer technologies such as hybrid or electroacoustic stimulation that combine acoustic and electrical hearing are an additional option for some but are still limited by cochlear implant technology. However, with an improved understanding of the neurotrophic factors that allow spiral ganglion neuron regeneration and facilitate hair cell synapse formation, it is hoped that this can be exploited into new therapies to reverse the damage that is done by both noise exposure and age-related hearing loss. The current multicenter human gene therapy trial that is evaluating hair cell regeneration using the *atoh 1* gene is the first step towards this goal of ultimately regenerating normal inner ear function.

Consulted References for ARC Presentation

Ciorba A, Hatzopoulos S, Bianchini C, Aimoni C, Skarzynski H, Skarzynski PH. (2015) Genetics of presbycusis and presbystasis. *Intl J Immunopathol Pharmacol* 28:29–35.

Department of Labor, OSHA (1981). Occupational noise exposure: hearing conservation amendment. *Fed Reg* 46:4078–4180.

Dillon CF, Gu Q, Hoffman HJ, Ko CW. (2010) Vision, hearing, balance, and sensory impairment in Americans aged 70 years and over: United States, 1999–2006. *NCHS Data Brief*:1–8.

Fernandez KA, Jeffers PW, Lall K, Liberman MC, Kujawa SG. (2015) Aging after noise exposure: acceleration of cochlear synaptopathy in recovered ears. *J Neuroscience* 35:7509–20.



Gates GA, Cooper JC, Kannel WB, Miller NJ. (1990) Hearing in the elderly: the Framingham cohort, 1983–1985. Part I. Basic audiometric test results. *Ear Hear* 11:247–56.

Goman AM, Lin FR. (2016) Prevalence of hearing loss by severity in the United States. *Am J Public Health* 106:1820–1822.

Havlik R. (1986) Aging in the eighties: impaired senses for sound and light in persons age 65 years and over. Preliminary data from the supplement on aging to the National Health Interview Survey: United States, January–June 1984. Advance data from vital and health statistics, #125. Hyattsville, MD: National Center for Health Statistics, Publication no. DHHS (PHS) 86–1250.

Izumikawa M, Minoda R, Kawamoto K, Abrashkin KA, Swiderski DL, Dolan DF, Brough DE, Raphael Y. (2005) Auditory hair cell replacement and hearing improvement by Atoh1 gene therapy in deaf mammals. *Nature Med* 11:271–276.

Kujawa SG, Liberman MC. (2015) Synaptopathy in the noise-exposed and aging cochlea: primary neural degeneration in acquired sensorineural hearing loss. *Hear Res* 330:191–199.

Liberman MC. (2017) Noise-induced and age-related hearing loss: new perspectives and potential therapies. *F1000Research* 6, 927.

Liberman MC, Kujawa SG. (2017) Cochlear synaptopathy in acquired sensorineural hearing loss: Manifestations and mechanisms. *Hear Res* 349:138–147.

Lin FR, Yaffe K, Xia J, Xue QL, Harris TB, Purchase-Helzner E, Satterfield S, Ayonayon HN, Ferrucci L, Simonsick EM, Health ABCSG. (2013) Hearing loss and cognitive decline in older adults. *JAMA Intern Med* 173:293–299.

Sakat MS, Kilic K, Bercin S. (2016) Pharmacological agents used for treatment and prevention in noise-induced hearing loss. *Eur Arch Otorhinolaryngol* 273:4089–4101.

Sliwinska-Kowalska M, Zaborowski K. (2017) WHO Environmental Noise Guidelines for the European Region: A Systematic Review on Environmental Noise and Permanent Hearing Loss and Tinnitus. *Int J Environ Res Pub Health* 14.

Sulkowski W, Owczarek K, Olszewski J. (2017) Contemporary noise-induced hearing loss (NIHL) prevention. *Otolaryngol Pol* 71:1–7.

AUDITORY RECORDINGS FOR

Word Recognition & SRT

Processing Disorders

Training/Therapy

And More!



AUDITEC, INC.

PHONE (800) 669-9065

WEBSITE www.auditec.com

EMAIL auditecinfo@auditec.com

- ✓ **Constraint-Induced Auditory Therapy**
- ✓ **Auditory Continuous Performance Test**
- ✓ **Spanish Word Recognition & SRT**

FOR EXCESSIVE EAR WAX BUILD UP...

Debrox[®]

Carbamide Peroxide 6.5% Non USP*

EARWAX Removal Aid



use as directed

***Safely and gently removes
excessive ear wax with
microfoam action***

***Easy for patients
to use at home***

**MORE
MICROFOAM
ACTION!**
coming
Summer
2018

#1 Doctor & Pharmacist RECOMMENDED

***To order samples for
your office, visit
Debrox.com/Professionals***

** pH differs from USP specifications*



Genetic Associations with Vestibular Disorders and Unilateral Hearing Loss

Kelley Dodson, MD, FACS, Associate Professor, Residency Program Director, Pediatric Otolaryngology, Congenital and Genetic Hearing Loss, Otolaryngology, and General Otolaryngology, Virginia Commonwealth University, Richmond, Virginia

The genetics of vestibular dysfunction and unilateral hearing loss are an emerging area of active investigation. Embryologic development of the ear is complex and closely regulated by a number of genes. Defects in any of these processes may lead to hearing loss, vestibular dysfunction, or both. Outer and middle-ear development arises from the first and second branchial arches, while the inner ear arises from neuroepithelium from the otic placode. The vestibular portion of the inner ear is subdivided into the endolymphatic duct and sac, the vestibule (utricle and saccule), and the semicircular canals.

Dizziness is one of the most common symptoms of aging and may be peripheral or central. Hereditary or familial vestibular disorders are often classified into those with and those without hearing loss; alternatively, they may be grouped into those which are episodic versus progressive. Those without hearing loss include familial vestibular migraine, familial episodic ataxias, and familial CANVAS. Those with hearing loss include familial Meniere's disease, and genetic syndromic and non-syndromic hearing loss disorders associated with vestibular dysfunction including enlarged vestibular aqueduct syndrome, Usher syndrome, DNFA 9, DNFA 11 and DNFA 15. The most common form of autosomal recessive deafness, DFNB1, caused by mutations in Connexin 26, also may have vestibular components.

Unilateral hearing loss affects up to 5 percent of school-aged children and can result in significant social, educational, and behavioral consequences. Longitudinal studies of children with unilateral hearing loss over time show continued areas of academic weakness and poor school performance. Up to 30 percent of infants with congenital unilateral hearing loss have a Joint Committee on Infant Hearing risk factor and co-occurring birth defects are not uncommon. The most common risk factors were craniofacial anomalies, family history of hearing loss, and stigmata of syndromes associated with hearing loss. Genetic studies of unilateral hearing loss have demonstrated sequence variants in common deafness genes, suggesting a possible gene-environmental interaction for this condition. In summary, both familial vestibular disorders and unilateral hearing loss are both areas of active investigation to study risk factors, genetic contributions, and potential treatment options.

Consulted References for ARC Presentation

- Appelbaum EN, Howell JB, Chapman D, Pandya A, Dodson KM. (2018) Analysis of risk factors associated with unilateral hearing loss in children who initially passed newborn hearing screening. *Int J Ped Otorhinolaryngol* March.
- Bisdorff A, Bosser G, Gueguen R, Perrin P. (2013) The epidemiology of vertigo, dizziness, and unsteadiness and its links to co-morbidities. *Front Neurol* 22(4):29.
- Dodson KM, Georgiolos A, Barr N, Nguyen B, Sismanis A, Arnos KS, Norris VW, Chapman D, Nance WE, Pandya A. (2012) Etiology of unilateral hearing loss in a national hereditary deafness repository. *Am J Otolaryngol* 33(5):590–594.
- Lieu JE, Tye-Murray N, Karzon RK, Piccirillo JF. (2010) Unilateral hearing loss is associated with worse speech-language scores in children. *Peds* 125(6):e1348–1355
- Lieu JE, Tye-Murray N, Fu Q. (2012) Longitudinal study of children with unilateral hearing loss. *Laryngoscope* 122(9):2088–2095.
- Requena T, Espinosa-Sanchez JM, Lopez-Escamez JA. (2014) Genetics of dizziness: cerebellar and vestibular disorders. *Curr Opin Neurol* 27(1):98–104.
- Roman-Naranjo P, Gallego-Martinez A, Lopez Escamez JA. (2018) Genetics of vestibular syndromes. *Curr Opin Neurol* 31(1):105–110.
- Yelverton JC, Dominguez LM, Chapman DA, Wang S, Pandya A, Dodson KM. (2013) Risk factors associated with unilateral hearing loss. *JAMA Otolaryngol Head Neck Surg* 139(1):59–63.

From Etiologic Diagnoses to Personalized Therapies for Hearing Loss

Cynthia Casson Morton, PhD, William Lambert Richardson Professor of Obstetrics, Gynecology and Reproductive Biology and Professor of Pathology, Harvard Medical School, Boston, MA; Kenneth J. Ryan MD Distinguished Chair in Obstetrics and Gynecology and Director of Cytogenetics, Brigham and Women's Hospital, Boston, MA; Chair in Auditory Genetics, Division of Evolution and Genomic Science, University of Manchester, Manchester Academic Health Science Centre, Manchester, England

Implementation of universal newborn hearing screening (UNHS) began in the United States in the 1990s (JCIH, 1994) with a goal of identifying all newborns with moderate-to-profound deafness through physiologic evaluations of auditory function in response to sound. The astonishing spread of universal programs to screen newborns for hearing throughout the world has truly been a revolution in health care. Early detection and habilitation of deafness through UNHS is notable for enormous personal, societal and economic benefit. Better hearing for persons of all nations is an achievable, important goal, given that a disabling hearing impairment affects about 4 percent of the world's population, with two-thirds of such persons living in developing countries.

Etiologies for congenital deafness are heterogeneous and include genetic and environmental causes (e.g., infectious,

hypoxia, trauma, ototoxic medications), but genetic causes are the major contributor in developed countries (Morton and Nance, 2006). The prevalence of deafness is known to increase in childhood and has been attributed largely to an increasing percentage of environmental causes. For every 10 infants with permanent hearing loss at birth (1–2 per thousand), similar losses develop in another 5 to 9 children before the age of nine years. A portion of this increase represents children lost to follow up after not passing UNHS, and newborns with mild-to-moderate deafness. Clearly, certain limitations exist in current UNHS, among which is an etiologic diagnosis to empower personalized therapies.

Impressive improvements in molecular technologies in concert with expansion of genetic diagnoses and genetics-informed therapies have led to initiatives to address implementation of genomic sequencing into newborn screening. Application in UNHS for genetic deafness is of especial interest given the unparalleled genetic heterogeneity (>600 clinical syndromes with deafness) and lack of an etiologic focus in UNHS, which compromises optimal habilitation. In particular, early diagnosis of a syndromic form of deafness that appears as a form of congenital nonsyndromic deafness (e.g., Usher, Jervell, and Lange Nielsen) would be of great value.

Due to its diagnostic rate, genetic testing is the first line test in evaluation of a child with bilateral sensorineural deafness. To address incorporating genetic screening into UNHS, several



©ChameleonsEye / Shutterstock.com

groups have studied the utility of limited panels of genes or variants to augment UNHS in large cohorts (Wu et al, 2017). In addition, the studies have variously included cytomegalovirus testing and follow up. A consistent finding is identification of a delayed onset of deafness in newborns who passed UNHS and who also have well-known pathogenic variants, accounting for a portion of the missing etiologies of childhood deafness. Although whole genome sequencing (WGS) (Shen and Morton, 2016) is an attractive future platform for facilitating diagnoses of congenital disorders including structural variants, a near term goal for implementation of genetic testing into UNHS for a specific population is likely to be a limited screen on a single platform with the most frequently encountered pathogenic variants.

SEQaBOO (Sequencing a Baby for an Optimal Outcome) Boston and SEQaBOO Manchester are sister pilot demonstration projects of implementing WGS in UNHS. Both projects will survey knowledge and attitudes about genetics and genomics in parents of newborns who did not pass UNHS, and will follow families with annual surveys to assess evolving parental knowledge and attitudes and the child's health (hearing status and speech and language development). A goal of SEQaBOO Boston is to provide otologists genomic results at the one-month diagnostic audiology test for assessment of desired changes in medical management with genetic results at the initial encounter, while delivering standard-of-care management. SEQaBOO Manchester will inform families of potential eligibility to enroll in the 100K Genomes Project for WGS in the rare disease category.

References

- Joint Committee on Infant Hearing. Position Statement. (1994) Accessed at www.jcih.org/JCIH1994.pdf.
- Morton CC, Nance WE. (2006) Newborn hearing screening—a silent revolution. *N Engl J Med* 354:2151–2164.
- Shen J, Morton CC. (2016) Next-generation newborn hearing screening. In: Vona B, Haaf T, eds. *Monographs in Human Genetics: Genetics of Deafness*, pp. 30–39.
- Wu CC, Tsai CH, Hung CC, et al. (2017) Newborn genetic screening for hearing impairment: a population-based longitudinal study. *Genet Med* 19:6–12.

Conclusion

The theme of next year's Academy Research Conference will be advances in amplification, focusing on the latest advances in the selection and fitting of hearing aids as well as evidence-based research as it relates to best practices and improvement in quality of life for all individuals living with hearing loss. ARC 2019 will be held on March 27 in Columbus, Ohio. 

Kathleen Arnos, PhD, is a professor of biology and chair of the Department of Science, Technology, and Mathematics, Gallaudet University, Washington, DC. She was also the program chair for the 2018 Academy Research Conference.

Vanderbilt Bill Wilkerson Center
Department of Hearing and Speech Sciences
Vanderbilt University Medical Center

OPEN POSTDOCTORAL POSITION

A NIH-funded postdoctoral position is available in the Department of Hearing and Speech Sciences at the Vanderbilt University Medical Center, Nashville, TN, to study the effects of noise-induced hearing loss in nonhuman primates. This is part of a larger study that investigates the signatures and effects of noise-induced hearing loss in both humans and nonhuman primates. The position involves performing behavioral measurements, non-invasive electrophysiological characterization (ABRs, DPOAEs, MEMRs), and single unit neurophysiological measurements. Participation in studies of therapeutic interventions is also possible. The position begins in August 2018.

The candidate would have a doctoral degree (PhD) in Neuroscience, Biomedical Engineering, or Hearing and Speech Sciences/Audiology. Experience with two of the three measurement modalities is strongly recommended. Experience working with animals is a huge plus. MATLAB or Python programming ability is also desired. The ability to work independently and in a group setting is preferred.

Compensation will be provided at the NIH salary scale for postdoctoral fellows, based on years of postdoctoral experience.

Vanderbilt's audiology training program is ranked first in the country and the School of Medicine and Medical Center are both ranked in the top twenty. Vanderbilt's hometown of Nashville is a vibrant, engaging city offering world-class dining, museums, parks, and performing arts.

Interested candidates should send a CV and the names of three references to ramnarayan.ramachandran@vanderbilt.edu. All information sent by candidates and references will be kept strictly confidential. Women and minorities are encouraged to apply.

VANDERBILT  UNIVERSITY
MEDICAL CENTER

Vanderbilt is an equal opportunity, affirmative action employer.



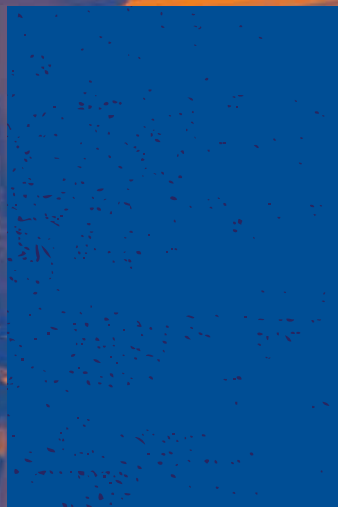
NEW NAME SAME VALUE

AT 30TH ANNUAL CONFERENCE

AAA 2018, the annual conference of the American Academy of Audiology, welcomed more than 6,000 participants to Nashville, Tennessee, on April 18–21. Attendees participated in four days of innovative educational sessions, learned about the latest technologies, and shared their knowledge with colleagues from around the world. Conference participants also had the opportunity to enjoy what makes Nashville one of the most highly rated destinations in the country.

BY EILEEN RALL





COMPREHENSIVE HEARING HEALTHCARE: YOUR ADVANTAGE

Providing excellent care for your patients is likely the reason you joined the hearing health care profession. But with the coming over-the-counter solutions, audiologists must fight the “no professional needed” perception of drugstore hearing instruments. The key to competing is contrasting practices by providing full-service care that builds long-term relationships with patients.

As you know, total patient care extends well beyond the device itself, and requires a holistic approach that uniquely addresses each patient’s everyday hearing challenges. This care is central to reversing the natural isolation that can occur from untreated hearing loss.

For many patients, isolation starts on phone calls, a part of life that was once second nature that becomes increasingly difficult over time, eroding important relationships with friends and loved ones. Addressing this simple reality is one area where your practice can stand out on the competitive landscape, and it’s one of the most direct ways to foster the social engagement patients need.

Amplified phones offer one option; however, the progressive nature of hearing loss suggests a more comprehensive solution could lead to longer-term patient satisfaction. A captioned telephone from Sprint CapTel pairs amplification with real-time captions, enabling patients to hear what they can on phone calls and — via captions displayed on the phone’s built-in screen — also read what they miss. There’s no cost for a Sprint CapTel phone and service, and audiologists can certify patients using a simple form.

Providing comprehensive hearing healthcare and a range of treatment options can not only set your practice apart, but also deliver fantastic outcomes for your patients, wherever they are on their hearing loss journey.

Find out how Sprint CapTel can deliver this no-hassle program to you today. Visit <http://professionals.sprintcaptel.com> to get started.



1-877-805-5845
audiologist@sprint.com
professionals.sprintcaptel.com

Individuals with hearing loss must complete & submit a Third Party Certification of Eligibility signed by hearing health professional to be eligible for free Internet-based CapTel phone. Although CapTel can be used for emergency calling, such emergency calling may not function the same as traditional 911/E911 svc. By using CapTel for emergency calling you agree that Sprint is not responsible for any damages resulting from errors, defects, malfunctions, interruptions or failures in accessing or attempting to access emergency svc. through CapTel whether caused by the negligence of Sprint or otherwise. Free CapTel Phone Offer: See www.captel.com/thirdparty.php for details. CapTel Captioning Svc. funded through FCC provisions. CapTel callers are responsible for their own long distance call charges. CapTel is intended for use by people with hearing loss. Sprint reserves the right to modify, extend or cancel offers at any time. See sprintcaptel.com for details. Guarantee: 90-Day refund or exchange through manufacturer. The item must be in the original carton & in “like new” condition to receive a refund. See www.weitbrecht.com/terms.htm for details. Other Terms: Offer/coverage not avail. everywhere or for all devices/networks. Restrictions apply. See store or sprintrelaystore.com for details. © 2018 Sprint. Sprint & logo are trademarks of Sprint. CapTel is a reg. trademark of Ultratec, Inc. Other marks are property of their respective owners.



WEDNESDAY

This year's meeting kicked off with the 10th annual Academy Research Conference (ARC), which focused on genetics and hearing loss. More than 175 registrants participated in this one-day translational conference chaired by Kathleen Arnos, PhD. Dr. Arnos assembled a world-renowned line-up of leading researchers who shared their work on topics that included a primer on genetics for the clinician; genetic testing and counseling; genetic association with vestibular disorders and unilateral hearing loss; age-related hearing loss and noise-induced hearing loss; and therapies for hearing loss. See page 52 of this issue for the summaries of the ARC presentations.

Sold-out learning labs on Wednesday morning featured hands-on training for everyone and included topics from cerumen management to cochlear implant programming, and hearing aid verification. About 30 attendees spent the morning learning to promote our profession through the Public Relations Media Training workshop. In addition to ARC and learning labs, new professionals had their own miniconference, supported by Phonak, LLC, and other attendees participated in an Advocacy Workshop.

The First-Time Attendee Orientation was packed and provided "newbies" with helpful information to make the most out of their experience. The afternoon continued with well-attended learning modules and featured sessions. This year, the Academy collaborated with Vanderbilt University to bring the annual Judith Gravel Memorial Lecture to AAA 2018 attendees. Music for Deaf Ears: Cochlear Implant Mediated Perception of Music was presented by Dr. Charles Limb. Grand rounds this year were divided into four presentations and vestibular grand rounds was featured Wednesday afternoon.

Celebrate Audiology (sponsored in part by Hamilton CapTel) kicked off the evening's social events in the exhibit hall, where everyone gathered to enjoy food, drink, and entertainment while meeting with exhibitors and reconnecting with colleagues. Several universities hosted gatherings for their students, faculty, staff, and alumni during the event. Immediately after Celebrate Audiology, many AAA Foundation supporters gathered at the Omni Hotel for the annual AAA Foundation Happy Hour Benefit (philanthropic support provided in part by Phonak, LLC). Party-goers enjoyed a very competitive silent auction of donated high-end handbags with proceeds supporting the Foundation.



THURSDAY

Thursday morning, Academy president Jackie Clark, PhD, and Nashville Vice Mayor and local audiologist Sheri Weiner, AuD, welcomed attendees to the General Assembly, which was attended by more than 3,000 participants. On the occasion of the Academy's 30th anniversary, the program chairs for the first and 30th annual conferences were welcomed to the stage, Fred Bess and Eileen Rall, AuD, respectively. Dr. Clark and Academy president-elect Lisa Christensen, AuD, also made remarks.

The Assembly (sponsored in part by Amplifon) concluded with keynote speaker Jeff Goldsmith, PhD, one of the nation's premier health-care futurists. Dr. Goldsmith discussed how the current medical environment directly impacts the profession of audiology. Immediately following the General Assembly, current Board of Directors member Sarah Sydlowski, AuD, PhD, moderated a diverse panel of experts discussing current trends in audiology.

The afternoon was packed with educational opportunities, including poster sessions, industry updates, exhibitor courses, research podium presentations, and learning modules. The AAA Foundation sponsored Dr. Tacy M. Byham's inspirational featured session Lead Like a Girl. Thursday afternoon also featured Perspectives on Hidden Hearing Loss/Beyond the Pure-Tone



Audiogram and Bases for Auditory and Vestibular Features of mTBI as well as Grand Rounds-Adults. The American Board of Audiology Speed Updating gave attendees an opportunity to learn more about ABA Board Certification directly from board-certified audiologists.

Thursday evening closed with several social events, including the ABA Certificant Mixer, the International Reception (sponsored in part by Hearing Industries Association) and the annual Honors and Awards Banquet (sponsored in part by Phonak, LLC) for those receiving the honors of the Academy. Many attendees also participated in a successful and entertaining fundraiser for the Political Action Committee (PAC) by "Pedaling for the PAC" in downtown Nashville.



The #1 Most Profitable Ancillary Service for Private Practice Audiologists



This system-driven, ancillary balance treatment program will help you generate more revenue from balance and dizzy patients than you can from hearing care, while ALSO increasing your hearing aid sales!

Request information now at:
www.AuDBalance.com





FRIDAY

As the sun rose, so did those attendees who participated in the 6:00 am sunrise yoga class. Participating in 7:30 am learning modules was also a way many chose to start their Friday morning bright and early. The AAA Foundation raised funds with Coffee for a Cause just before the annual Marion Downs Lecture in Pediatrics (sponsored in part by the Oticon Foundation). Dr. Dana Suskind was this year's invited speaker and she shared her innovative program, The Thirty Million Word Project, promoting early language learning. After a morning of learning in classes as well as in the exhibit hall, the State Fair (sponsored in part by Sprint CapTel) gave many state organizations a chance to promote activities from across the country. The learning continued throughout the afternoon with multiple diverse educational offerings including the always-popular and entertaining Hearing Aids in Review with Drs. Catherine Palmer, Gus Mueller, and Bob Turner.

One of the final sessions on Friday was the most well-attended. More than 600 attendees gathered for Grand Rounds—Pediatrics, where they learned about seven diverse and challenging cases.

In the evening, nearly 500 attendees put on their dancing shoes—actually boots—and celebrated audiology at the iconic Wildhorse Saloon (sponsored in part by Amplifon). The Academy took over the venue's second and third tiers and partied until the wee hours of the morning with games and line dancing. It was the most-attended Friday night social event in the Academy's history.

Product Theater



Experience the Oticon Opn™ Evolution

Explore the entire extended Opn family including rechargeable Opn and the new ConnectClip that doubles as a high-quality wireless headset for hands-free calls from modern mobile phones and as a remote/partner mic.

Oticon Government Services provides a close-up look at the newest Oticon hearing solutions available to Veterans Affairs audiologists. The Oticon Pediatrics Team features Opn for teens and ConnectClip for students. Details: www.oticon.com.



Signia: Pure Charge&Go Nx

Signia is featuring the new Pure® Charge&Go—the first and only hearing aid on the market to combine inductive lithium-ion rechargeability along with our signature Own Voice Processing (OVP™), and Bluetooth® streaming direct from iPhone. Wearers can also stream from Android or other smartphones using our new StreamLine Mic. The result? Pure Charge&Go is the hearing aid that does it all including 19-hour battery run-time on a single charge and a superior hearing experience in any situation.

Pure Charge&Go checks all the boxes that today's consumers are looking to fill—greater convenience through rechargeability, discretion via its tiny size, and crystal-clear sound they've come to expect from Signia. Details: www.signia-pro.com.



Sprint CapTel: Captioned Telephone

Hearing on the phone—with or without a hearing instrument—is a challenge for people with hearing loss. Sprint CapTel reconnects your patients by displaying phone conversations right on their phone screen, enabling them to hear what they can, and read what they miss.

With Sprint's easy-to-use program, you can provide a no-cost CapTel captioned telephone to your patients. Plus, Sprint's program is flexible! Certify patients with your practice's software or, if you prefer, use our paper form. The program offers four phone models to meet the needs of more of your patients.

We'll send you a complete kit for your office and provide no-cost training for you and your staff. When a patient needs a CapTel, you just certify their need, and we'll handle the rest—from delivery/installation to training and customer service!

Learn how to grow your practice with Sprint's hearing health-care program. Details: sprintcaptel.com.



The ZPower Rechargeable System for Hearing Aids

The only rechargeable battery solution that provides all-day power and the flexibility to interchange ZPower batteries with disposables. Now nearly every major hearing aid manufacture offers select products with ZPower rechargeable silver-zinc batteries built-in. Visit ZPower to view the many hearing aids brands compatible with ZPower batteries. Details: zpowerbattery.com.



SATURDAY

After three solid days of learning, those with any energy left enjoyed an invigorating morning of Zumba to launch their last day of the annual conference. Featured sessions included a Tier 1 Ethics session led by members of the Academy's Ethical Practices Committee and the session Over-the-Counter Hearing Devices and the Hearing Health Care Needs of Older Adults, by Larry Humes. For those wanting to know the latest in audiology education, ACAE and CAPCSD co-hosted the third annual Clinical Education Forum. In addition, AAA 2018 also featured an informative three-hour workshop for office staff.

After the conference concluded, many attendees chose to extend their time in Music City and enjoyed the sites, sounds and flavors of Nashville.



STUDENTS

More than 1,255 students joined us in Nashville for the annual conference, the largest number to date. Forty-nine students were invited to start off their experience at the Student Leadership in Audiology Conference (SLAC). Throughout the three days of educational sessions, students could choose to attend one of the general educational sessions or from several offerings designed just for students to meet their learning objectives. In addition to educational sessions, the SAA Scavenger Hunt made exploration of the exhibit hall informative, competitive, and rewarding with several great prizes.

The AuD Toolbox session on Thursday gave students the opportunity to participate in 10 roundtable discussions, two of which were designed to answer questions by undergraduates about the graduate school application process and benefits of undergraduate SAA associate membership.

Saturday concluded with the SAA Conference, which featured educational as well as networking opportunities with leaders in our profession. Educational sessions were not the only offering for students. From the SAA Mix and Mingle (sponsored in part by Starkey Hearing Industries) to the creative and competitive SAA T-Shirt Contest and the annual SAA fundraiser Cheers for Ears (sponsored by Phonak, LLC), the 30th annual conference of the American Academy of Audiology provided information as well as opportunities to develop relationships among students from across the country. 

Eileen Rall, AuD, was the program chair for AAA 2018.

More Hearing Testing, in More Ways, for Better Hearing Health Care for All

By Nicholas S. Reed and Renée Lefrançois

SHOEBOX
AUDIOMETRY

Change is coming to hearing health care. The passage

of the Over-the-Counter Hearing Aid Act coupled with recommendations from the National Academies' report published in June 2016 will drive more consumers than ever to pursue hearing testing and treatment options.

In an ideal world, everyone would have access to a diagnostic hearing evaluation by an audiologist in a double-walled sound booth. In reality, a lack of audiologists and poor access to care contribute to estimates that less than half of North Americans with disabling hearing loss ever receive formal testing.

To address this, self-testing options outside of the clinic are emerging. Providing access to high-quality, clinically valid assessment options—from screening and automated threshold testing to full manual audiometry—on new technology platforms including mobile devices help to enable these emerging testing options.

Further, clinical value is added with speech-in-noise testing, novel counselling tools, and data integration with other electronic health records. We are dedicated to be a part of this expansion and are working with key partners to ensure that reliable testing with ambient-noise monitoring remains a high priority throughout this evolution.

We look forward to forging forward together with you, our valued hearing health-care specialists, into this new chapter. Learn more about Shoebox Audiometry at www.shoebox.md.

CONTENT PROVIDED BY SHOEBOX AUDIOMETRY, A DIVISION OF CLEARWATER CLINICAL

Nicholas S. Reed, AuD, PhD candidate, is a Scientific Advisory Board member for SHOEBOX Audiometry and an instructor at the Center on Aging and Health—Johns Hopkins University School of Medicine, in Baltimore, Maryland.

Renée Lefrançois, MHSc, Reg. CASLPO, is the director of audiology with SHOEBOX Audiometry, in Ottawa, Ontario, Canada.



The Rise of the Hearing Bud

By David Cannington

Hearing aids fitted by a qualified audiologist serve a valuable purpose in helping people with severe hearing loss. But a majority of people fit into the mild-to-moderate hearing category, estimated to be 45 million people by 2020.

People are now turning to hearing buds to augment their hearing. More commonly known as “hearables,” hearing buds are now starting to incorporate capabilities that were once the domain of hearing aids.

The most recently launched IQbuds™ BOOST with Ear ID incorporates a clinically validated hearing assessment coupled with the industry recognized prescription formula NL2 to allow automatic configuration to the user's hearing profile. IQbuds™ BOOST is the first hearable product to incorporate the NL2 prescription formula and is paving the way for other products to deliver a professional functionality set in a consumer ready product.

Hearing buds take earbuds to another level of hearing sophistication by allowing the consumer to control how they hear the world around them in different environments with features such as dynamic noise control, speech to noise controls, EQ frequency that is all customizable.

For audiologists, this opens up a new market opportunity by offering a contemporary hearing solution to those consumers who are not quite ready for a hearing aid. By offering a great situational hearing experience with a product like IQbuds™ BOOST, there is a high probability that the consumer will return to an audiologist when he or she is ready for a hearing aid. For more information about Nuheara, visit www.nuheara.com.

CONTENT PROVIDED BY NUHEARA.

David Cannington is the co-founder and executive SVP sales and marketing with Nuheara, in San Rafael, California.

The Language of Hearing

By Margaret Glenny



There is nothing more powerful than someone who is articulate and who can think and speak. It's power. And I mean it's power of the best sort...it's authority and influence and respectability and competence...you come to university to craft your highest skill, which is to be found in articulated speech.

— Jordan Peterson, psychology professor and author

How do we learn to speak?

It was my fascination with that question that brought me to my specific studies in higher education and to my occupation.

First of all, we're not born speaking. The newborn, however, is acutely aware of its surroundings with all five senses: hearing, seeing, touching or feeling, smelling, and tasting. And, I happen to think that hearing might be the most important in that line up for us homo sapiens. It is likely one of the reasons I became an audiologist.

What is critical for normal speech and language development?

Hearing.

Hearing is essential, so much so that Marion Downs, who I like to call the mother of audiology, was largely responsible for the fact that today, in the United States, ALL babies have their hearing screened before they leave the hospital.

Audiology is a young profession, only realizing a clinical role largely

after World War II. Before that, we were largely hearing scientists and psycho-acousticians confined to the laboratory, busy accumulating normative data, developing tests of auditory function, and doing research to better understand the auditory system. and, we've made a lot of headway.

However, in the present, we are now struggling with hearing issues that bear a multitude of labels—central auditory processing disorders, auditory neuropathy, and hyperacusis, just to name a few that are floating in our sphere. At the same time, labels potentially identifying hearing and listening issues and “sensory” processing problems have burgeoned in other related professions and other fields of study—attention deficit disorder (ADD), attention deficit hyperactivity disorder (ADHD), autism “on the spectrum” (including Aspergers), sensory processing disorders (SPD), pervasive developmental disorders (PDD), learning disabilities, language

disorders, apraxia, reading disorders, and the list keeps growing.

One of the newest on the scene is social communication disorder (SCD). What is going on? What if all of these issues, or the vast majority of them, have something to do with compromised hearing?

My own experience in these matters started with my grandson, Luke. A strapping, healthy nine-pound, six-ounce boy (at birth) who wasn't talking much at one year. Trying not to be alarmed because of my background, I took a wait-and-see approach for a while, but then it seemed reasonable for him to have a repeat hearing test, even though he passed his newborn screening. Mistakes happen, equipment sometimes malfunctions—especially with all the pass/fail automation.

Luke passed his hearing test. And another one. And then, at about age two and a half, he was diagnosed as autistic.

I went to graduate school at the University of Connecticut in the early 1980s, at a time when ADD was just being bandied about with a bit of frequency, and the autism rate was approximately one in 2,000. Today, the rate is now estimated at one out of 34, of which 28 are male. Some would say we are just better at diagnosing, but the reality is that cannot possibly explain that amount of increase over time. Neither can genetics. Yes, the waters are muddied with differences in terminology. After all, there isn't a definitive "test" for a lot of these conditions.

We are generally talking about a constellation of unusual or abnormal symptoms, not the least of which very often include a child not speaking. In addition, many of these children spin, but do NOT get dizzy (like my grandson used to do). So, it didn't seem a ridiculous idea for me to question whether there was something wrong with his vestibular/cochlear function. In addition, Luke began to exhibit symptoms of hyperacusis—just confirming my suspicion that something or many things—were not working as they should in his auditory system, and that would explain why he wasn't talking. Some people are calling this "invisible" hearing loss.

So, I started re-reading the classic Marion Downs book, *Hearing in Children*. And, I learned a lot. I started doing a ton of research and I learned even more. I started to read James Hall's *Handbook of Auditory-Evoked Responses*. I even re-read some of Ira Hirsh's *The Measurement of Hearing*.

Children with autism may have reduced OAEs at 1 KHz (Bennetto et al, 2017). In addition, children with APD have been found to have different P3 responses (Jirsa, 1992). Fluctuating, negative middle-ear pressure greater than normal characterizes both autistic and learning-disabled children with negative middle-ear pressure greater in autistic children than learning-disabled children with the condition typically being bilateral for autistic children (Smith et al, 2008).

In the present, we are now struggling with hearing issues that bear a multitude of labels—central auditory processing disorders, auditory neuropathy, and hyperacusis, just to name a few.

In other words, a lot of the children with the alphabet soup of diagnostic labels—autism, ADD, ADHD, central auditory processing disorder (CAPD)—have *hearing* problems. Because I am an audiologist, and probably more so because I have been affected personally by this, I believe that audiologists should become aware of this and take their rightful place in the

“developmental delay” world we find ourselves in.

One in six children in the United States are now diagnosed with some kind of developmental disability, with ADD being the most frequent diagnosis (Boyle et al, 2011). People in our field are calling this a special education epidemic (Focus for Health, 2017). I believe it is an obligation of our profession and a tribute to our heritage that audiologists commit themselves to helping these children and their families.

The first chapter in Marion Downs’ *Hearing in Children* makes a compelling case for the normative range of hearing to be -10 to 15 dB. She speaks very effectively regarding the problem of recurrent ear infections in young children, as well as the concomitant decreases and fluctuations in hearing with chronic middle-ear effusion, and the long term adverse ramifications of these conditions on education and literacy of the affected individuals. Autistic kids have 10 times more ear infection in the first three years of life than neurotypical children (Epidemic Answers, 2017).

We have a lot of work to do—which is a good thing. Although all of these labels appear that they may have a multitude of contributing factors, we are the profession that understands the critical importance of normal hearing in early childhood development. Who, other than our profession, will advocate for 15 dB being the limit of “normal hearing” for our youth? How many times in my work have I had misgivings about the child that had 15–25 dB hearing thresholds, as opposed to the one that sat up there at 0 and 5 dB HL across all frequencies?

As we struggle with our most recent growing pains as a profession, I would like to present a great hope. These are our children. They are our future. They need us and maybe we need them.

I recently sat in on a C&P exam with a colleague at a Veteran Affairs (VA) hospital where I do some fee basis/contract work. She is a recent graduate who came out of her clinical doctorate program being well versed in CAPD testing, electrocochleography (EcoG) testing, and lots of vestibular testing. Back in the day, I was doing lots of auditory brainstem response (ABRs) and electronystagmography (ENGs), and I certainly was exposed to CAPD testing in my program with Toni Maxon, a great pediatric audiologist. However, at the VA, equipment funding is always challenging, and our diagnostic testing is rather limited. At one point, my colleague stated, with a bit of frustration because of our equipment issues “Peggy, I didn’t go to school to be a hearing aid dealer.” I had to really smile to myself. When I was just becoming interested in audiology, which was also due to a magnificent mentor and teacher, Bob Jirsa, the controversy of the day was whether audiologists should dispense hearing aids, with precisely her statement as the argument against.

Although I don’t think I hold that position, I do want to encourage my profession, not only for the health and well-being of our children, but also because of the great work of the people that came before us, to spread our wings, do our research, and help these children and their families. They need us just as much (if not more) than the children with “visible” hearing loss. The words that we use matter.

We, more than a lot of people, are aware of that fact, and, just because we can’t pinpoint exactly what the problem is, it doesn’t mean there isn’t a problem. These children, including my grandson, have hearing problems, and, who better than us to pay attention and research and help? We are in the profession that is most able to speak the language of hearing. 

This is an excerpt from the forward of the book *The Language of Hearing* by Margaret Glenney.

Margaret Glenney is a developmental audiologist and sole proprietor of The Sensory Centre in Roanoke, Virginia.

References

- Bennetto L, Keith JM, Allen PD, Luebke AE. (2017) Children with autism spectrum disorder have reduced otoacoustic emissions at the 1 kHz mid frequency region. *Autism Res* 10: 337–345.
- Boyle CA, Boulet S, Schieve LA, Cohen RA, Blumberg SJ, Yeargin-Allsopp M, Kogan MD. (2011) Trends in the prevalence of developmental disabilities in US children, 1997–2008. *Peds* 127(6):1034–1042.
- Jirsa RE. (1992) The Clinical Utility of the P3 AERP in Children With Auditory Processing Disorders. *J Sp Lang Hear* 35(4):903.
- Smith DE, Miller SD, Stewart M, Walter TL, McConnell JV. (1988). Conductive hearing loss in autistic, learning-disabled, and normal children. *J Autism Devel Dis* 18(1):53–65.
- The Special Ed Epidemic: What is Happening to our Children? www.focusforhealth.org/special-ed (accessed May 2, 2018).
- Ear Infections and Autism. <https://epidemicanswers.org/ear-infections-and-autism> (accessed July 21, 2017).



audiology solutions network

Search, Find, and Connect with the Products and Services Your Practice Needs.



Partner with suppliers who understand the needs of Academy members.



Browse research, case studies, and white papers from leading suppliers and industry experts.

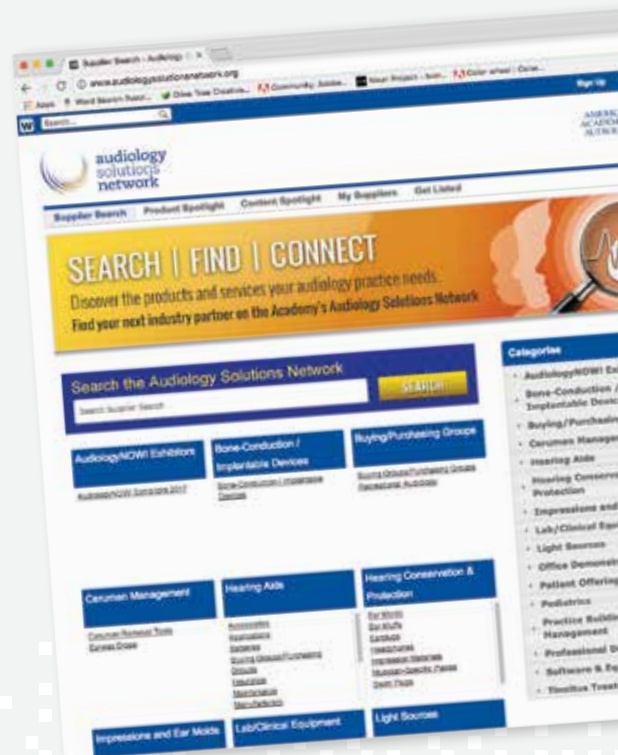


Save time with easy-to-use supplier evaluation information.



Explore AAA Annual Conference exhibitors before, during, and after the conference.

For more information about getting your products listed, contact the ASN Manager **Samantha Leland** at samantha.leland@mci-group.com or call 410-316-9851.



www.audiologysolutionsnetwork.org

WELCOME BACK to an ongoing series that challenges the audiologist to identify a diagnosis for a case study based on a listing and explanation of the nonaudiology and audiology test battery. It is important to recognize that a hearing loss or a vestibular issue may be a manifestation of a systemic illness. Being part of the diagnostic and treatment “team” is a crucial role of the audiologist. Securing the definitive diagnosis is rewarding for the audiologist and enhances patient hearing and balance health care and, often, quality of life.



Middle-Ear Function Analysis for Patulous Eustachian Tube Dysfunction

By Shreemanti Chakrabarty

This case study is regarding the diagnostic audiology findings for a patient diagnosed with patulous eustachian tube (ET) dysfunction. A 22-year-old patient complaining of ears stopped up was diagnosed by an ENT physician with patulous ET dysfunction, based on her history of significant weight loss of more than 102 lbs in a year. Diagnostic audiometry as well as tympanometry was conducted to see if the tympanometry pattern coincides with the respiratory cycle. Patient was found to have normal hearing in both ears. Tympanometry patterns was consistent with respiration for a total of 30-second time window.

Patulous ET is described as a nonclosing ET causing nonequalized pressure in the middle ear. The symptoms include aural fullness or plugged/blocked ear, phenomenon of autophony or hearing own voice louder, excessive pressure changes in the middle ear transmitted to inner

ear through ossicular chain, hearing loss or vestibular symptoms. Hearing loss mostly occurs as a perception, due to the masking effect of sounds transmitted through the ET to the middle ear. The causes of patulous ET are sudden weight loss, hormonal changes, stress, fatigue, inappropriate use of decongestants, TMJ syndrome, and certain cases have unknown prevalence.

It is typically diagnosed by ear, nose, and throat (ENT) physician using a combination of history and otoscopic examination of tympanic membrane. It has been found that the tympanic membrane movements occur synchronously with inspiration and expiration in such cases.

Case Presentation

A 22-year-old female patient complaining of ears stopped up was seen by our ENT physician and was diagnosed with patulous eustachian tube disorder, based on her history of sudden weight loss. Diagnostic

audiometry including tympanometry was conducted on the patient. The patient has normal hearing in both ears, and her tympanometry pattern was found to be consistent with respiration for a 30-second time window (sawtooth pattern).

Post-treatment tympanogram on the patient revealed a smooth curve and sawtooth pattern was not observed.

Management/Outcome

Patulous ET is typically transient in nature. When the condition causing them resolves (weight loss, hormonal changes), the symptoms are gradually diminished. ENT physicians also use insufflation, injection (teflon), cauterization, myringotomy treatment options, depending on the patient.

Discussion

Audiology-based intervention for pre- and post-treatment patulous ET has a big role to play in deciding the treatment and prognosis of patulous ET in patients. 🎓

Shreemanti Chakrabarty, AuD, Board Certified in Audiology, is an audiologist with Southside Regional Medical Centre in Colonial Heights, Virginia.

Consulted Resource

DiBartolomeo J, Henry D. (1993) Patulous eustachian tube identification using tympanometry. *J Amer Acad Audiol* 4:53–57.

Recent Grads!

Maximize your membership benefits and Fellow Up!

Become a New Professional and Fellow Up! Enjoy Fellow member benefits for the rest of the year at no additional cost when you upgrade your student membership after graduation.

To learn more, visit www.audiology.org. Search keyword **UPGRADE**.



AMERICAN ACADEMY OF AUDIOLOGY 

Speak Up! Help Establish the Value of Your Professional Services

By Paul Pessis and Kate Thomas

Each November, the Centers for Medicare and Medicaid Services (CMS) publishes the Medicare Physician Fee Schedule (MPFS) final rule that lists the payment rates for all Current Procedural Terminology (CPT)[®] codes across specialties for the upcoming year. The MPFS not only impacts reimbursement from Medicare, but it also can be used as the model for establishing payment across many private payers.

Audiologists want to ensure they receive fair and appropriate payment for their services, especially under the Medicare program. Do you know that you can (and need to) take an active role in determining how audiology codes and services are valued under this system?

Now for the specifics...

The annual updates to work values made in the MPFS final rule are determined based on recommendations from the American Medical Association's Relative Value Scale Update Committee (RUC). The AMA works with specialty societies, like the American Academy of Audiology (the Academy), to develop and propose recommendations for valuation to CMS for new or revised CPT codes. Code revisions come as a result of periodic review from both CMS and the RUC.

The Academy takes an active role in both the development of CPT codes and the valuation of those codes through the AMA CPT Editorial Panel and RUC processes, with the help of Academy assigned

representatives. These representatives, better known as advisers, use the information supplied by you, the practitioner, to advocate for a fair value of each CPT code performed within our scope of practice. Simply, the system is designed to engage you in the process and we encourage every Academy member to participate.

How Can You Help?

To properly determine valuation for codes, the AMA RUC partners with specialty societies to conduct surveys from providers who regularly provide the services under review. Beginning this summer and extending through 2019, you may receive an e-mail asking you to participate in a survey that relates directly to a new or revised CPT code used in your daily practice. Participating in this survey gives you a voice. It is your opportunity to communicate and quantify the value of professional work.

Audiology RUC advisers report the survey results and related recommendations directly to the AMA RUC, and the information from your survey contributes to and impacts the Medicare payment rates for services surveyed. Your participation in the survey/process is crucial and should be considered a professional privilege and obligation.

The Academy is working with the American Speech–Language–Hearing Association (ASHA) to disseminate these AMA RUC surveys as they

relate to new and revised CPT codes for audiology services. If you receive an e-mail from the Academy or ASHA requesting your participation in a survey, we strongly urge you to review the survey carefully and participate assuming you meet the requirements for taking the survey.

To participate, you must be a practicing audiologist who is familiar with and regularly performs the procedure described by the CPT code. You can participate even if you don't currently bill Medicare or other third-party payers.

Remember—this is your chance to describe the professional work for the services you perform and to shape the valuation of those services. Audiologists are best qualified to communicate the value of our professional skills, cognition, and clinical judgment performed in providing the service under review. The survey

process is the platform that allows your input to be shared with key decision makers assigned by the RUC.

What Should You Look For?

As mentioned, check your e-mail inbox for the AMA RUC surveys mentioned earlier from the Academy and ASHA, and tell your colleagues to be on the lookout for the surveys, as well. The surveys are meant to assess key elements of the service you provide including the time, intensity, and complexity of the work performed.

For more information on the survey process, view this educational video from the AMA at www.youtube.com/watch?v=kaw6-OhwbaM.

We hope you will take the opportunity this summer (and anytime a survey comes to you) to give your profession a voice in the valuation process! 📺

Kate Thomas is the senior director of advocacy and reimbursement for the American Academy of Audiology, and Paul Pessis, AuD, is owner of North Shore Audio-Vestibular Lab in Highland Park, Illinois. He is also a past president of the Academy.

Overview of the RUC Survey Process

- The Academy will send an e-mail invitation for you to participate in the survey. The e-mail will contain an embedded link to an RUC survey for a specific service. If you provide this service, we strongly encourage you to participate in taking the survey.
- Keep in mind that the surveys should be completed based on your “typical” case. We are collecting information based on the patient you see most frequently and not one that is the exception.
- Survey results are compiled and discussed by the Academy, ASHA, and other stakeholders to determine appropriate recommendations for valuation. Recommendations are then presented to the RUC.
- At the RUC meeting, the Academy’s RUC adviser Paul Pessis, AuD, works with ASHA’s RUC adviser Leisha Eiten, AuD, to present the survey results of work, time, intensity, and complexity.
- The RUC reviews and discusses the survey results and recommendations prepared by the audiology community. The RUC then determines the final relative value unit (RVU) and practice expense (PE) recommendations to take to CMS.
- CMS can either accept the RUC’s recommendations or modify the recommendations based on their own internal review process. CMS publishes their approved values in the Medicare Physician Fee Schedule (MPFS) proposed rule published annually in July. They seek public comments on their proposals. Final values are published in the MPFS final rule in November.

July 4 Is a Good Time to Educate on Hearing Health

By Jamie Bogle and Karlee Howard

July 4, 1777, just one year after the Declaration of Independence had been approved and read publicly, our young nation paraded the streets and celebrated our independence by lighting bonfires, chiming bells, and setting off fireworks. Since then, fireworks have become the hallmark of our modern Fourth of July festivities. Whether you are an active participant or simply a bystander, fireworks explode throughout every town in the United States on this celebratory day. You might be able to run from them, but you definitely cannot hide, as the sound they produce can be heard from miles away. Fireworks can reach between 150 and 175 dB pSPL. This noise level could be compared to the sound level of firearms or a jet plane takeoff. In other words, the sound level of fireworks is painfully loud and can lead to temporary or even permanent noise-induced hearing loss (Boys Town Hospital; American Speech-Language-Hearing Association, 2017; Ryan et al, 2016).

Fireworks are just one noise source that can lead to significant hearing loss. About 40 million American adults have hearing loss

due to noise exposure (NIDCD, 2017). Children are also at risk, with up to 12 percent of children between 6 and 19 years of age demonstrating hearing loss attributed to noise (Niskar et al, 2001). As audiologists, we have the tools and knowledge to provide appropriate information and preventative measures before noise exposure, as well as evaluation and management options for those with noise-induced hearing loss. This is the perfect time for audiologists to provide hearing health information and care to patients, families, and community members who might be at risk, especially during the summer holiday season.

The American Academy of Audiology has tools and resources available to gain visibility and media coverage. Public relations can be daunting, but the Public Relations Tool Kit is a good place to learn about how to work with the media. When you're ready, you can download a Press Release Template—not only does this provide a public service over the July 4 holiday, but also provides visibility to you as a local hearing health-care professional. The Public Awareness area on the

Academy's website provides numerous resources for you to provide to your patients and neighbors. Visit www.audiology.org/get-involved/public-awareness for the information you need to get started on your own local initiative to reduce the risk for noise-induced hearing loss this summer. ^{AT}

Jamie Bogle, AuD, PhD, is an associate professor of audiology at the Mayo Clinic College of Medicine in Scottsdale, Arizona.

Karlee Howard, BA, is a third-year audiology doctoral student at The University of Oklahoma Health Sciences Center in Oklahoma City, Oklahoma.

References

- American Speech-Language-Hearing Association. (2017) Loud Noise Dangers. www.asha.org/public/hearing/Loud-Noise-Dangers (accessed April 26, 2018).
- Boys Town Hospital. (2017) Fireworks Can Lead to Hearing Loss. www.boystownhospital.org/knowledgecenter/articles/hearing/pages/fireworks.aspx (accessed April 26, 2018).

National Institute on Deafness and Other Communication Disorders (NIDCD) www.nidcd.nih.gov/health/noise-induced-hearing-loss (accessed April 29, 2018).

Niskar AS, Kieszak SM, Holmes AE, Esteban E, Rubin C, Brody DJ. (2001) Estimated prevalence of noise-induced threshold shifts among children 6 to 19 years of age: the third National Health and Nutrition Survey, 1998-1994, United States. *Pediatrics* 108:40-43.

Ryan AF, Kujawa SG, Hammill T, Prell CL, Kil J. (2016). Temporary and permanent noise-induced threshold shifts. *Otol Neurotol* 37(8); e27 1-5.

Noise-Induced Hearing Loss Public Awareness

- Create a press release to send to your local media.
- Update your website with noise-induced hearing loss prevention information.
- Provide fact sheets on noise-induced hearing loss in your waiting room and at noisy events.
- Distribute hearing protection devices at noisy events; include information on the importance of protecting your hearing and your business information.
- Consider visiting your local schools to help educate children about noise and how to protect their hearing. For ideas, go to www.audiology.org/get-involved/public-awareness

THE 31ST ANNUAL CONFERENCE OF THE AMERICAN ACADEMY OF AUDIOLOGY

CALL FOR PRESENTATIONS

Share cutting-edge research and clinical best practices **with your colleagues.**



Call for presentation proposals opens on **August 27.**

www.AAAConference.org



**March
27-30**

#AAAConf19



Come Together...

PUBLIC AWARENESS WEEK

October 1-5, 2018



Time to...

1 Educate
consumers.

2 Recruit
for the profession.

3 Inform
the media.

4 Share
our successes.



Together, **WE** can make a difference.

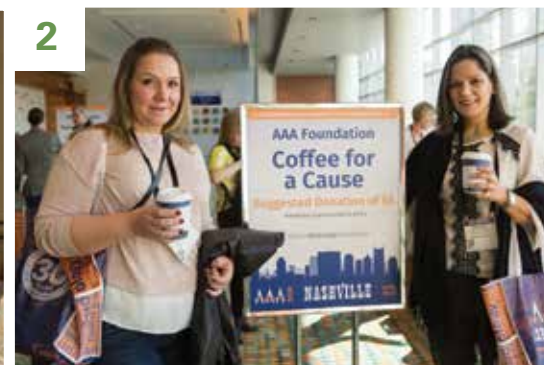
Use the Academy's Public Awareness
resources to promote audiology.

www.audiology.org

AAA 2018: Foundation Events in Nashville



1



2



3



4



5



6



7



8



9



10

1. Foundation trustee Georgine Ray and student guest perused the handbags at the AAAF Annual Happy Hour Benefit.
2. Donors paused for a quick photo during Coffee for a Cause.
3. Auction bidders helped fund the Foundation's mission to promote research, education, and public awareness in audiology.
4. Jessica Lewis (center) accepted her Student Research Forum Award from Foundation trustees (left to right) Mindy Brudereck, Georgine Ray, and Laura Ann Wilber, and Plural Publishing Senior Marketing Manager Kristin Banach.
5. Foundation trustees Laura Ann Wilber (far left), Eileen Rall (second from right), and Richard Roberts acknowledged Tacy Byham (center) for her featured lecture Lead Like a Girl.
6. Foundation trustees Eileen Rall (far left), Georgine Ray (second to left), and Kristtina Huckabay (far right) joined Oticon's Vice President of Audiology and Professional Relations Don Schum, to recognize Dana Suskind (center) for her Marion Downs Lecture in Pediatric Audiology.
7. Students posed on the rooftop of Rock Bottom Brewery for the annual SAA Cheers for Ears Benefit.
8. Auction 4 Audiology was the Foundation's biggest fundraiser of the year!
9. Georgine Ray and Hillary Snapp presented Jillian Roberts with the James and Susan Jerger Award for Excellence in Student Research.
10. Oticon President Gary Rosenblum (far right) presented the Foundation with a check in the amount of \$25,000 to support five Empowering Students Scholarships.

The SAA Blog

A New Hub for Information

By Hannah Famili and Sueanne Phan

The Student Academy of Audiology (SAA) is launching its own blog and we're excited to introduce it to you.

Millennials and younger generations are known to get a lot of their information from online and social media sources. Social media websites can be used to gain insight into the audiology profession by searching terms such as "audiology blog" or "life as an audiology student," in an effort to find a raw idea of what it is really like to study audiology and learn more about everything the profession offers.

In the past, there has been a lack of personal resources of which students could take advantage. To fill this gap, SAA volunteers have been working hard to create an outlet that reaches students and

allows them to provide their own voice for what it means to be a part of this community full of diverse opportunities.

Facebook, Twitter, and Instagram are easy-to-use, accessible, social media sites that are becoming increasingly popular as audiology information outlets. Not everyone, however, uses these outlets, and many people do not want to mix social and academic life together.

The SAA Blog will provide a space where we are able to communicate what we do as audiologists to a larger audience. After all, we've all had to answer the question "What's an audiologist?" when telling someone what you are studying. Instead of pointing to your ear and offering a brief answer, maybe you would consider referring them to the blog.

Many professionals and students are calling for more focus on educating the general public and other health-care professionals on audiology, hearing health care, and the impact of hearing loss on quality of life.

The SAA Blog

can be used as a tool to facilitate inter-professional communication, as well as finding a place as a resource for people who have hearing loss and are curious to learn more about our profession.

Development of the SAA Blog

The SAA Blog has incorporated insight and development from the SAA Media Committee and the SAA Communications Committee over the past two years. The SAA Media Committee worked hard to develop the idea of the blog, as well as research and generate many of the logistical and legal backing. This project was then passed down to the SAA Communications Committee who have been working on taking these materials and turning them into the blog. The blog has been the product of many student and professionals' input and hard work, and we are excited to present this as a new resource!

Benefits of the SAA Blog

There are many benefits that the SAA Blog can provide for audiology students. Among the blog content is gaining insight into different areas of the profession, making connections with other students, providing opportunities to discuss and learn about current issues, sharing tips for graduate school, and many other items. We can learn a lot from our peers, and the blog platform more easily will help facilitate this peer-to-peer communication. If you enjoy



learning from the experiences of other students, then this is the place for you. Students are also able to share their perspective on audiology-related topics. If there is a topic you're eager to talk about, feel free to reach out to the SAA Blog!

Make Your Audiology Voice Heard

The SAA Blog is also an opportunity to share your voice as an SAA member, even if you do not currently volunteer on a committee. If you're interested in volunteering or getting involved in the audiology community, this is a great place to start! Bloggers have the opportunity to choose if they want to be a one-time guest blogger or have a regular appearance on the blog for a set amount of time.

Potential blog post topics could include updates about students in their externships, student research, guest blogs from professionals in the fields we may work closely with, and more. Our goal is to create an environment where there is a consistent, accessible, and regular stream of knowledge, as well as ideas for students to learn about and stay informed regarding current issues in the profession.

Want to Become an SAA Blogger?

It's simple! And it's not restricted to students. We want to hear from a variety of perspectives—including audiologists, students and professionals from other health-care professions, and individuals with hearing loss.

Please send an e-mail to the SAA Communications Committee at communicationscommittee.saa@gmail.com with the following information.

- Your name, school, and school year
- Blog post topic suggestions
- Reason why you want to become an SAA blogger
- Reason why you find audiology ear-resistible

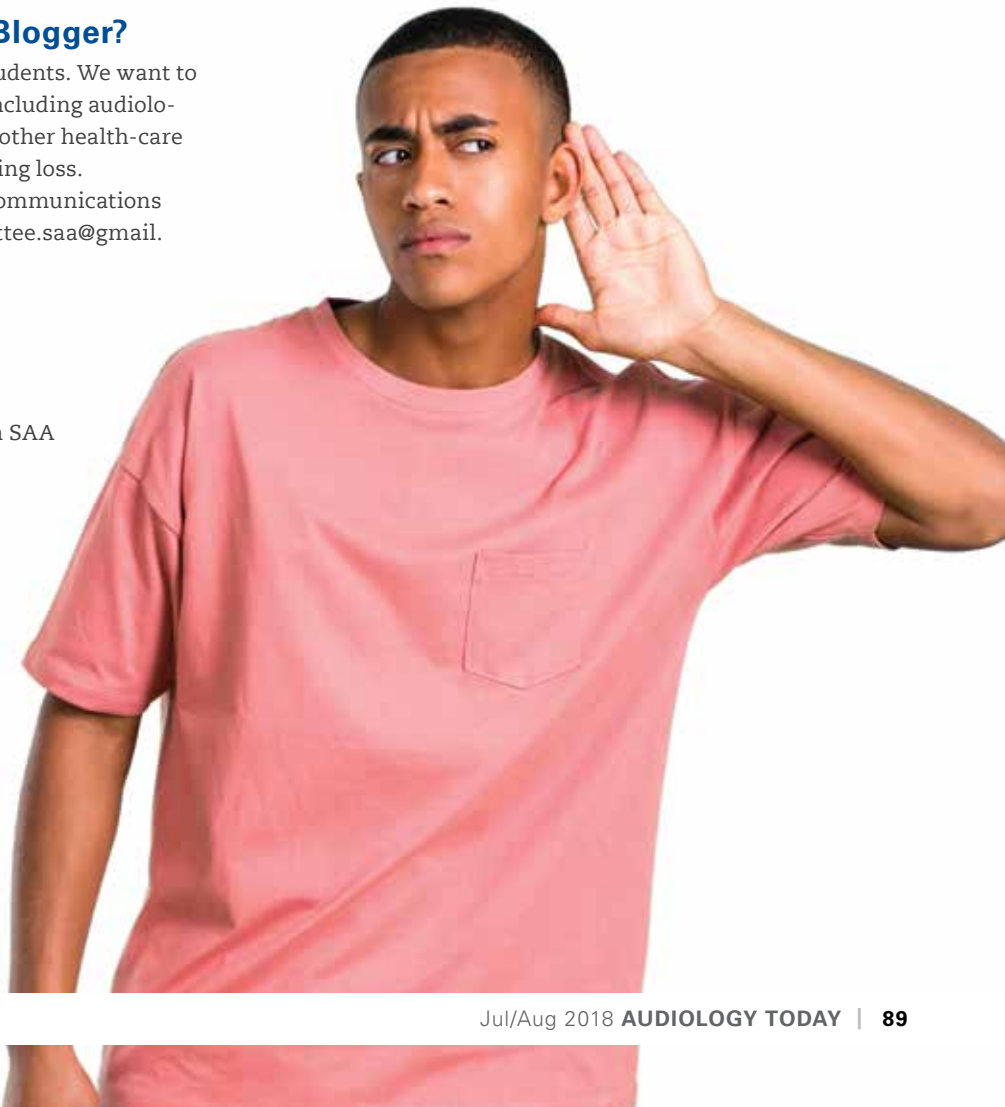
We're open to all ideas and perspectives and can't wait to hear from you! 🗣️

Hannah Famili will be a first-year AuD student at the University of Pittsburgh in the fall. She is a member of the Communications Committee. Her interests include interventional and research audiology as well as working with pediatric populations.

Sueanne Phan is a first-year MBA student at Saint Mary's. She is a member of the SAA Communications Committee. Her audiology interests include cognitive hearing science, musicians and hearing loss, and teleaudiology.

Acknowledgments

We would like to thank all of the people who have had an integral role in the development of the SAA Blog: Bridget Shanahan, Samantha Ramirez, Andrea Green, Rachael Sifuentes, Emily Lundberg, Lori Zitelli, Hannah Famili, Stephanie Berry, Sueanne Phan, and Jessica Minnick.





New Members of the Student Academy of Audiology

Ariel Arista

Hannah Belke

Alyssa Bhat

Emily Bryan

Beau Campa

Gabriela Colon Kaiser

Savannah Covert

Joseph Engelmeier

Brenna Fair

Nancy Flores

Olivia Freeland

Mackenzie Gomes

Katie Gross

Victoria Hager

Olivia Hahn

Jade Hammerly

Jamie Hawkins

Dayton Hendricks

Aoi Hunsaker

Devin Inabinet

Jessica James

Jordan Jenkins

Victoria Johnson

Candace Johnson

Shandanesha Johnson

Kelsey Kitchens

Brandon Levine

Adriana Martineau

Kenneth Meinke

Olivia Mitchell

Troy-Ann Mott

Emily Nightengale

Anna Norwood

Kristen Panzarella

Megan Raffle

Teresa Reato

Jeremy Schwartz

Gwen Sheehy

Hallie Sparks

Tiffani Takeshita

Kelsey Thompson

Emilee Tucker

Pajkub Vahchuama

Shawna Venable

Ciara Wappes

Sally Ware

Kendra Wasik

Alyssa Wciorka

Chelsey Wenner

Kristyn Wethington

Sarah Whittaker

Hannah Wright

Cheng Zeng

Pediatric Audiology Specialty Certification

It's NOT Child's Play!

By Shelley R. Moats

I have been practicing audiology since 1996 and started out as a jack of all trades—seeing patients of all ages, providing a variety of diagnostic services, and fitting hearing aids to patients of all ages. Early in my career, I developed a strong interest in working with children with hearing loss and their families. While I had some opportunities to provide this service initially, I did not begin to exclusively see children until a job change in 2005 led me to an exclusively pediatric position. I was excited for this change as my desire to become a pediatric audiologist had blossomed significantly, and my caseload had shifted in this direction naturally over time along with my interests.

Pediatrics

In 2005, I took a position in a university setting where I was not only providing pediatric audiology services but teaching doctor of audiology (AuD) students to provide best practice services and interventions. It became clear that pediatric audiology meant different things to different providers. We worked hard as a faculty to impart the need to adhere to guidelines published by our professional organizations, but our students reported that procedures were not consistent across their clinical placements and fourth-year sites. In addition, we had the task of teaching our students that good pediatric audiology was not strictly about audiology. We function as case managers, make referrals to other health-care

providers, help parents deal with their emotions when their child is diagnosed, advocate for educational services for our patients, help families find funding for devices...the list is endless.

The scope of knowledge that is required to care for kids with hearing loss is immense. As I branched out and started a nonprofit pediatric audiology practice on my own, and then successfully merged this practice with another pediatric nonprofit organization, the need for quality audiology services for children remained apparent. Children are not little adults, and the skill set required to take care of their hearing needs is completely different. Until recently, there was no mechanism in place to ensure that providers have the knowledge to take care of this population.

Certification

In 2011, the American Board of Audiology (ABA) introduced the Pediatric Audiology Specialty Certification, or the PASC. I was pleased that a group of experts in pediatric audiology had come together to develop a standard for what pediatric audiologists need to know and contemplated taking the

exam for a couple of years. I wanted a way to measure my own knowledge and take a look at areas where I could improve. I finally decided to apply and sat for the examination in 2013.

The PASC, like other ABA credentials, is voluntary. To apply and sit for the exam, you must be a licensed audiologist with a minimum of two years of postdegree professional experience. Of that work experience,



550 hours must be in pediatric audiology, with another 50 hours in pediatric case management. I completed the PASC application, downloaded the list of suggested study materials, and got to work.

The content areas evaluated by the PASC examination include the following:

- Laws and Regulations
- General Knowledge of Audiology
- Child Development
- Screening and Assessment Procedures
- Counseling

- Communication Enhancement Technologies
- Habilitation/Rehabilitation and Educational Supports

I spent a reasonable amount of time preparing for the exam, focusing primarily on areas that I didn't use frequently in day-to-day patient care. For example, as a clinic-based audiologist, I needed to review some educational audiology concepts that I don't use as frequently, such as how to complete a classroom survey.

Exam day came and I was surprised by the comprehensive and rigorous nature of the exam. The ABA partners with subject matter experts in pediatric audiology and with HUMRRO, a leading psychometric

organization, to create and validate test items. The result is a comprehensive, statistically valid examination that allows demonstration of knowledge and expertise in the area of pediatric audiology. When I received notification that I passed the exam, I also received a breakdown of how I scored in each of the areas described above. This was a useful tool to identify areas of relative weakness and allowed me to focus on improving my knowledge in these areas through continuing education opportunities and independent reading.

In addition, ongoing continuing education is required to maintain the PASC that is well beyond what is required for a state license; there is also a minimum number of hours

CH-TM™ Certificate Holder— Tinnitus Management

With **10-15 percent** of U.S. adults experiencing chronic tinnitus, it is crucial that health-care professionals learn and understand more about **evidence and intervention techniques** for treating patients with tinnitus.

Available through eAudiology.org.

CH-TM Development-Level
Underwriter:

PHONAK
life is on

PART 1: FOUNDATIONS OF TINNITUS MANAGEMENT

MODULES 1-3
Now available. (0.6 CEUs)

PART 2: TINNITUS MANAGEMENT PRINCIPLES IN PRACTICE

MODULES 4-7
Now available. (0.8 CEUs)

CH-TM Module-Level Supporter:
Plural Publishing


www.boardofaudiology.org

that must be obtained in pediatrics, a Tier 1 requirement, and an ethics requirement.

Benefits

I took the exam initially as a yardstick to measure my own performance. However, I have been surprised at how well the PASC has been received in the medical community and among families of children needing services. When I received the certification, my practice notified all local pediatric providers to share information about the credential. We received positive feedback from many referral sources and gained some new ones in the process. Simply put, pediatricians and other referring providers want to ensure

that their patients are receiving the best possible care from the most qualified professional.

Other health-care providers have a clear understanding of the rigor that is required to prepare for and pass a specialty certification exam and having this certification has had an impact on referral patterns. Our families were excited as well—some reported that they saw our PASC announcement posted at other health-care offices! They were happy to know that their child is receiving services from a provider that has taken that extra step to demonstrate their knowledge and is committed to ongoing education. 

Shelley R. Moats, AuD, PASC, is the director of audiology with Little Ears Hearing Center at Open Arms Children's Health in Louisville, Kentucky. She is the only holder of the PASC (Pediatric Audiology Specialty Certification) in the state of Kentucky.

EARN UP TO 0.6 CEUs THROUGH A FACE-TO-FACE PEER MENTORSHIP EXPERIENCE!



AMERICAN
ACADEMY OF
AUDIOLOGY 

Peer-to-Peer MENTORING PROGRAM

Connect with a seasoned audiologist and gain the knowledge and skills needed to advance in your career.

VISIT: www.audiology.org

KEYWORD: **Peer-to-Peer Mentoring**

SIGN UP TODAY!

PURCHASE
WITH YOUR AAA MEMBERSHIP
RENEWAL FOR ONLY

\$99

2019 Webinar Package

— EARN CEUs AT YOUR CONVENIENCE —

- **More than 28 CEUs available** (280 hours)
in a variety of subjects, including:
 - 1.3 Ethics CEUs (13 hours)
 - 6.9 Tier 1 CEUs (69 hours)
- More than 10.0 CEUs from past AAA Annual Conferences (100+ hours)
- **LIVE and/or ON-DEMAND webinars**—continuing education that fits into **YOUR** schedule

Purchase the package with your renewal to receive a limited time discount and be granted exclusive early access to the 2019 CEU Package beginning **October 1, 2018!**

VISIT eAUDIOLOGY.ORG TO LEARN MORE.

Third Annual Clinical Education Forum

Outcomes and Action Plan

By James W. Hall

The Accreditation Commission for Audiology Education (ACAE), in collaboration with the Council of Academic Programs in Communication Sciences and Disorders (CAPCSD), offered the third annual Clinical Education Forum in conjunction with AAA 2018. ACAE organizes the forum to highlight the innovations, opportunities, and challenges for audiology clinical education, as well as to offer educators the opportunity to strategize on how to address challenges.

The Clinical Education Forum this year focused on the theme “Readying AuD Students for Clinical Practice.” Invited speakers and participants identified several high priority challenges that must be addressed as soon as possible.

The forum began with brief reviews of topics covered in three previous related conferences. Lisa Hunter, former chair of the ACAE board, summarized the discussions at the 2017 forum. Ann Eddins, representing CAPCSD, presented a recap of the first Clinical Education Forum in 2016. Neil DiSarno provided an update on the progress of the working groups formed as an outgrowth of the Education Summit hosted recently by ASHA.

Panel Group Discussions

One of the main features of the Clinical Education Forum was a panel



discussion offering varied perspectives on AuD student readiness for clinical practice. Panel members represented different roles in student education, including on-campus faculty members and program directors, on-campus preceptors, off-campus preceptors, and third- and fourth-year AuD students.

Rupa Balachandran of the University of the Pacific described building a new three-year AuD program that emphasizes competency-documentation of progress in student clinical education. Hannah Sibert of the University of North Carolina–Chapel Hill discussed her program’s use of formative and summative simulation for clinical preparation.

Preceptor presentations followed. Gail Whitelaw of Ohio State University and Nancy Nelson of Indiana University represented the

Panelists participating in the Third Annual Clinical Education Forum hosted by ACAE and CAPCSD on April 21, 2018, at the American Academy of Audiology Annual Conference. From left to right: James W. Hall III (speaking), Rupa Balachandran, Hannah Sibert, Nancy Nelson, Ann Eddins (standing), Gail Whitelaw, Tracy Swanson, David Zapala, Riley DeBacker, and Hanna Sawher.



on-campus perspective. Gail offered considerations for a competence-ladder model, pointing out that students may enter clinical experiences with “conscious competence” while aspiring to achieve “unconscious competence.”

Off-campus preceptors Tracy Swanson, who coordinates the clinics at a Charlotte Ear, Nose, and Throat Associates in North Carolina, and Dave Zapala, of the Mayo Clinic Jacksonville, provided a real-world perspective on AuD student readiness for clinical practice. Tracy gave recommendations for how students can stand out in the interview process, and Dr. Zapala identified three important components of student readiness:

- Understanding nonverbal communication by patients, recognizing that audiology is just as personal as it is technical
- Communicating concisely
- Acknowledging risk

Panel presentations concluded with student perspectives on the practical challenges of making the transition from clinical learning to clinical practice. Riley DeBacker, a

third-year AuD/PhD student at Ohio State, listed the limited opportunities for students to practice specialized clinical skills and to access specialty practice experiences. He also commented on the lack of standardization in supervision, gaps in education, and the difficulty in differentiating oneself from another student in the externship application process. Hannah Sawher of the University of Wisconsin noted that AuD students may lack the confidence necessary to practice independently at graduation.

Working Group Discussions

Next, all audiologists attending the Clinical Education Forum engaged in roundtable discussions focusing on one or more topics related to AuD student readiness for clinical practice. The five themes and a selection of the main points discussed are as follows:

1. Educational challenges in readying students for clinical practice

- Need for consistency of competency-based assessment

- Balancing academic freedom with consistency across programs
- Use of simulation and on-site clinics versus off-site clinical rotations
- Perception of in-house clinic education versus off-site clinic rotations

2. Critical review of student readiness for different clinical services

- Problem with externship supervisors not grading appropriately to be “nice”
- Need for distinct check points for competency assessment to allow time for remediation
- Consistent feedback to offer encouragement and growth is lacking
- Lack of clarity about the role of the research capstone supplement to build on clinical skills

3. Role of university in readying students for clinical practice

- Accreditation can drive accountability in programs
- Academic programs have let go control of the externship
- More precise definition is needed of expectations for programs to prepare students for clinical experiences

4. Role of off-campus sites in readying students for clinical practice

- Insufficient communication by programs of expectations for clinical placements
- Lack of consistency in supervision skills of preceptors

- Inconsistency in AuD student evaluations

5. Solutions for improving student readiness for clinical practice

- Instill in students the ability to think about the patients' perspective
- Use standardized patient clinical practicum
- Offer case-based exams and internal clinical experience to assess readiness
- Provide supervisor training to increase comfort in the evaluation role and to help standardize student assessment

Call to Action

At the 2018 Clinical Education Forum in Nashville, we clearly identified or refocused on specific problems

in AuD clinical education. Actually, some of these problems have been discussed repeatedly over the years. There is general consensus among those involved in AuD student education that we don't need more discussion...we need action.

Conclusion

ACAE will again co-sponsor the Clinical Education Forum at AAA 2019 in Columbus, Ohio. The main focus there, building on the outcome of the most recent forum, will be practical strategies to address specific weaknesses or challenges in clinical education of AuD students. The scope of challenges and limitations in AuD student clinical education may seem insurmountable, yet we must start somewhere. Step by step, strategy by strategy, we can make a difference.

In collaboration with CAPCSD, ACAE has started planning for the Clinical Education Forum next year.

We will use this column in the months ahead to share our plans with the audiology community. In the meantime, we encourage anyone involved in the education of doctor of audiology students to offer suggestions and to participate in the fourth annual Clinical Education Forum. 

James W. Hall III, PhD, Board Certified in Audiology, is the chair of ACAE Board of Directors. He has 40 years of experience in audiology as a clinician, administrator, teacher, and researcher. Dr. Hall is a professor of audiology at Salus University in Elkins Park, Pennsylvania, and at the University of Hawaii in Honolulu, Hawaii.



AuD ADVOCATE

Grassroots Advocacy Is Critical During August Recess

By Adam Finkel

Every August, members of Congress decamp from Washington, DC, to return to their home districts to meet with constituents and attend local events.

During election years, such as 2018, this August recess presents an important opportunity for members of Congress to interact with their constituents before the November election. This opens up the door for audiologists to engage in grassroots advocacy and meet with congressional representatives. In fact, directly lobbying your members of Congress either through in-person visits to their offices, phone calls, letters, or e-mails is proven to be the best way to advance legislative priorities.

Comprehensive advocacy programs require a multipronged approach to effectively impact members of Congress. Targeted political contributions from the Academy's Political Action Committee (PAC) and in-person visits from the Academy's on-staff lobbyists play a key role in helping to manage advocacy

relationships and in advancing key policies. However, in-person contacts, both in Washington, DC, and in their home district, are an incredibly effective way to ensure that your member of Congress connects with you to understand the issues that are important and impactful to hearing health care and audiology.

A study of congressional staff compiled by the Congressional Management Foundation reinforced the importance of constituent communications. Ninety-seven percent of congressional staffers responded that an in-person visit from a constituent exerted positive influence on a member's decision on whether to support legislation. Individual e-mails and letters also were incredibly influential as members of Congress make a decision.

There are many different ways you can get involved in an advocacy campaign. If you are interested in meeting with your legislator while he or she is home in district, you can call the district office and ask

to schedule a meeting. The district office information will be available on the member of Congress' website. Similarly, if you are planning to visit Washington DC, you can contact the Academy directly, and the Academy's on-staff lobbyists can schedule meetings for you and help coordinate a day on Capitol Hill.

The Academy is advocating for a number of important issues that you can work on with your members of Congress. Specifically, the Academy is concerned by several of the changes proposed in the PROSPER Act (H.R. 4508), legislation that would reauthorize the Higher Education Act. This broad and sweeping legislation significantly would impact higher education policy. The Academy specifically has identified two provisions in the legislation that are highly problematic.

First, the legislation would eliminate the Public Service Loan Forgiveness program. Many professionals, including audiologists, use this program to help pay off their

student loans by pursuing various public service and nonprofit employment opportunities.

The PROSPER Act also would cap the amount of government-backed student loans that a student in a graduate program can take out to \$28,500 per year. While student loan debt is spiraling out of control, there are concerns that this provision would force many current and future audiology students to the private sector for loans where there may be fewer protections, or make audiology programs cost-prohibitive for many audiologists. So far, members of Congress and congressional staffers have been receptive to the Academy's concerns, though we need to remain engaged on the topic to ensure that these problematic provisions do not make it into any higher education reauthorization language that is passed by Congress.

The Academy also is pursuing H.R. 2042, the Access to Frontline Health Care Act. This legislation would help offset working audiologists' student loans by incentivizing them to work in federally defined "frontline" areas where there is a shortage of health-care professionals. Typically, frontline areas would be more rural areas, but there are urban areas as well where medical professionals are necessary. Audiologists are mentioned specifically by the legislation, as are speech-language pathologists, optometrists, chiropractors, and a

number of other health-care professionals. If passed, the legislation would authorize the Department of Health and Human Services to create a federal program where medical professionals would start to have their student loans paid off after they began to work in a specific frontline area for two years.

If an in-person meeting with your legislator, or one of his or her staffers does not seem appealing, then the Academy has resources to help quickly and easily contact your members of Congress on issues that are important. The Academy encourages you to use the Legislative Action Center, which can be found on the Advocacy section of the Academy website. This helpful tool allows you to contact your member of Congress and two senators without much difficulty. You can see what legislation the Academy is tracking, as well as timely alerts.

The Academy also provides a platform to stay engaged. Receive monthly legislative and political updates, as well as urgent action alerts, by signing up for the Academy's Grassroots Advocacy Network. To register, go to the Advocacy homepage on the Academy's website and click Grassroots Advocacy Network on the left-hand side of the page. You can register on the Grassroots Advocacy Network homepage.

Coordinated legislative campaigns where audiologists work with their legislators back home allow the Academy's advocacy staff to supplement those efforts in Washington, DC. We have seen excellent examples of local advocacy in 2018 with members in Michigan and California attending local PAC events for legislators who are supportive of Academy efforts. We need to continue to build upon those efforts to ensure that legislators are considering audiologists as they look to policy changes in health care.

With a strong grassroots presence, the Academy will be well-positioned for the remainder of the 115th Congress. If you have any additional questions about the Grassroots Advocacy Network or on lobbying your elected officials, contact me directly at afinkel@audiology.org. 

Adam Finkel is the director of government relations for the American Academy of Audiology.

2018–2019 BOARD OF DIRECTORS

Election Results

The American Academy of Audiology is pleased to announce the results of the election for president-elect and three member-at-large positions. Please help us congratulate the following Academy members on their election to the Board of Directors. Their term of office will begin on October 1, 2018.

PRESIDENT-ELECT

Catherine Palmer, PhD
Associate Professor, University of Pittsburgh

BS: Communication Sciences and Disorders/Education, University of Massachusetts, 1984

MS: Audiology and Hearing Impairment, Northwestern University, 1985

PhD: Audiology and Hearing Impairment, Northwestern University, 1991

I have dedicated my professional life to serving individuals with communication challenges related to hearing loss. I have been fortunate to do this through direct clinical care, educating future audiologists, providing continuing education, providing professional service, and adding to our knowledge base through research. Patients with hearing loss and balance disorders deserve to have access to experts in communication and balance; those experts are audiologists.

I believe that being involved in national leadership will provide me with an opportunity to use my skill set to not only help our profession position itself for changes that are coming but to make sure we chart our own course, keeping what is best for individuals with hearing loss and balance disorders at the forefront of our decision-making. The Academy Board provides the leadership for the profession of audiology and is the voice of audiology to a myriad of stakeholders. I welcome the opportunity to be part of this leadership and to work with the board and the entire membership to move towards our preferred future of accessible, affordable, best-practice based hearing and balance care.

Given the opportunity to provide leadership as an AAA Board Member, I will work tirelessly to ensure that audiologists are viewed as leaders in the prevention, assessment, and treatment of hearing and balance disorders.

MEMBER-AT-LARGE

Samuel Bittel, AuD
Audiologist, Hearing and Balance Specialists of Kansas City

BS: Psychology, Fort Hays State University, 2001

BA: Sociology, Fort Hays State University, 2002

AuD: Audiology, Nova Southeastern University, 2008

Audiology needs people who are passionate about keeping our profession viable and forward-moving through active involvement in our professional organizations. It is imperative that the Academy engage young private practitioners who are highly motivated to drive audiology forward. This is vital as we consider the challenges that our profession will face in the forthcoming years (from OTC hearing aids and third-party reimbursement to direct access and professional organization unification). Those of us with a lot of skin in the game and a vision for the future of our profession must actively be involved.

I feel that I fit the mold of what our profession and the board need. I am highly motivated to help steer audiology in a direction that benefits audiologists and the patients we serve first. The time to rest on our laurels has passed. We have settled for low salaries and reimbursement, physician referral requirements, fragmentation amongst our professional organizations, questionable educational standards, and an underappreciation/misunderstanding of our services from the medical community and the public for long enough. The Academy needs a passionate board now, as our profession often seems reactionary and not proactive. It is time to aim high, and I am ready for the responsibility.

I have done all that I can through state-level involvement and want to dedicate my energies to audiology at the national level. Audiology is my passion and I want to do all that I can to better our profession.

MEMBER-AT-LARGE

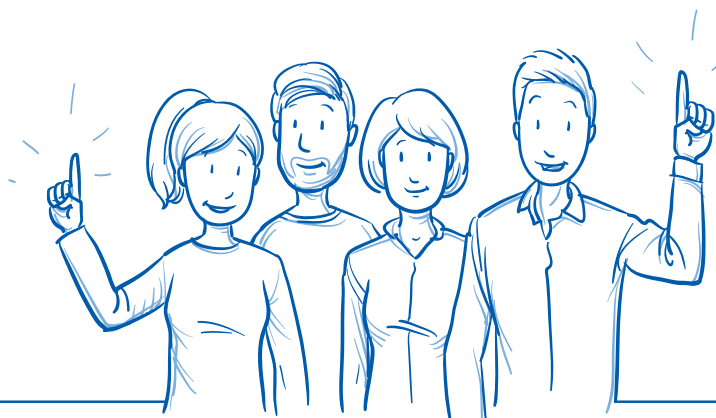
**Kari Morgenstein, AuD***Director, University of Miami Children's Hearing Program***BS:** Speech and Hearing Sciences,
Indiana University, 2009**AuD:** Audiology, University of Florida, 2013

Like many other health-care professions, audiology has many challenges facing us. With teamwork and collaboration, we can turn these challenges into opportunities. As a collective unit, audiology can continue to move in the right direction. We must start by doing a better job of engaging all of our members, including new professionals. While it is cliché, the reality is that these new professionals are the future of audiology. We need to invest in new professionals early in their careers and capitalize on their passion, enthusiasm, and unique perspectives. As a past president of the Student Academy of Audiology, a member of the New Professionals Subcommittee, and of the New Professional Audiology Conference Steering Committee, I have been fortunate to see firsthand the dedication that this group of professionals has and their unwavering desire to elevate the profession. As a 2013 graduate, I am interested in serving on the Academy Board so that I can be the voice of new professionals on the national level. I have several innovative ideas on how we can cultivate and engage all members, including new professionals. While this may not be an easy task, it is one I am ready to conquer through hard work and perseverance.

**Angela Shoup, PhD***Professor, Otolaryngology; Chief, Communicative and Vestibular Disorders, UT Southwestern Medical Center***BS:** Speech Pathology and Audiology,
University of Texas at Dallas, 1989**MS:** Communication Disorders,
University of Texas at Dallas, 1992**PhD:** Human Development and Communication Sciences,
University of Texas at Dallas, 1994

As an active and engaged audiologist, I appreciate the shared responsibility of contributing time and effort to the betterment of our profession. I have been a member of the American Academy of Audiology for many years and have had the opportunity to serve in multiple capacities. Through these experiences, I have recognized the multifaceted contributions of the Academy to the professional life of members and to the quality of services we provide to our stakeholders. These stakeholders include patients who come to us for support with hearing, tinnitus or balance difficulties, and also their families, the public, students, and scientists. The Academy serves to elevate our profession by providing an aspirational code of ethics, scope of practice, and guidelines for professional comportment.

The Academy provides tools to achieve these aspirations through web-based continuing education, publications, practice management tools and educational offerings at conferences, including but not limited to the Academy's annual meeting. Further, the Academy seeks to educate other stakeholders through legislative efforts and public relations outreach. The Academy promotes educational excellence for audiologists and for students entering the profession, and supports research and innovation in hearing and balance. All of these are crucial for the profession to remain viable—and all require not only financial support, but also time and talents of volunteers. My personal and professional philosophies align with the dedicated vision of the Academy. As I have benefited from the efforts of my colleagues, I am interested in contributing through service on the Board of Directors. 

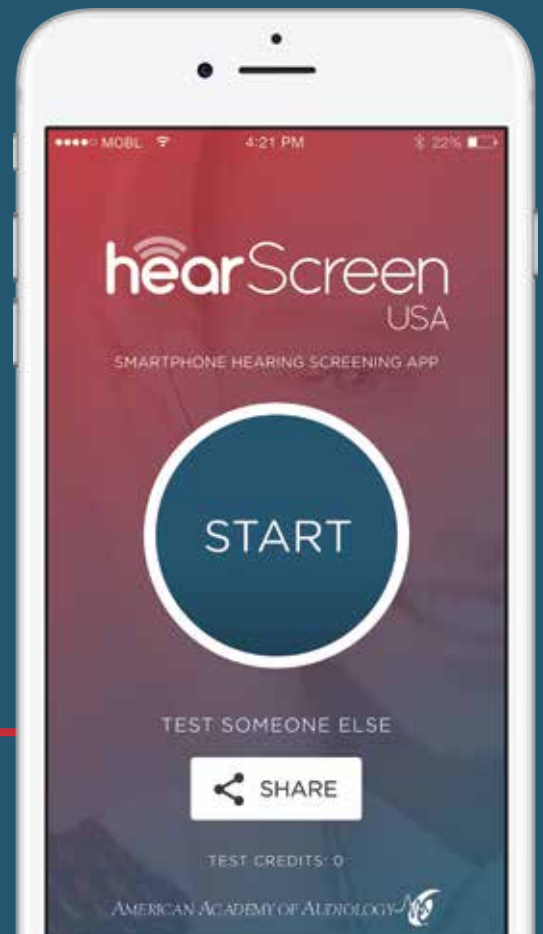




SMARTPHONE HEARING SCREENING APP

IN COLLABORATION WITH
AMERICAN ACADEMY OF AUDIOLOGY 

LAUNCHING FALL 2018



WHAT IS HEARSCREEN USA?



Clinically valid, digits-in-noise, smartphone hearing screening in under 3 minutes

GET YOUR PRACTICE AHEAD BY SIGNING UP AS A REFERRAL AUDIOLOGIST

Sign up as a pre-launch referral partner for hearScreen USA and receive \$200 off your premium subscription (Academy members only pay \$299)

- Get referrals to your practice
- Manage referrals on secure cloud portal
- Academy Members can sign up for a FREE basic subscription

Be part of this revolutionary hearing health application

To sign up as a referral audiologist, visit www.hearScreenUSA.com.



FREE for end users via both the iOS and Android app stores



Referrals to closest audiologist using geolocation

info@hearScreenUSA.com |
+1 415 212 5500 |

@hearScreenUSA



@hearScreenUSA



CALL FOR NOMINATIONS

2018 Call for Honors

Get Your Nominations in Now!

The Academy Honors Committee is excited to announce the opening of nominations for the 2019 Honors. There are several categories available to nominate your colleagues. Please enjoy reading about the categories and nominate someone who should be recognized for his or her work. All nominations should be received by October 5, 2018.

Nomination Process

To nominate an individual, a nomination packet should be submitted by October 5, 2018. Self-nominations will not be accepted. The nomination packet should include:

- A one- to two-page nomination letter addressed to the committee chair (Patricia Gaffney, AuD) in which you describe why the nominee should be selected for the award. Focus on the nominee's achievements that are directly applicable to the award for which he or she is being nominated.
- The nominee's full curriculum vitae.
- Nominees achievements will only be considered for the category of

award for which they have been nominated.

- Nominees for the Clinical Excellence in Audiology Award, the Jerger Career Award for Research in Audiology, the Outstanding Educator Award, the Marion Downs Pediatric Audiology Award, and the Early-Career Audiologist Award must be members of the American Academy of Audiology at the time they are nominated.

These items should be submitted to
Ed Dalere at edalere@audiology.org.

With the exception of Honors of the Academy, one award in each category will be awarded each year.

Selection of Honorees

The committee will consider all valid nominations. Awards will be made to qualified candidates who receive a majority vote of the voting members of the Honors Committee pending final approval of the Academy Board of Directors. An award may not be made in a particular year if there are no suitable nominations. Selected

recipients will be presented with their awards at AAA 2019.

Award Categories and Updates

Clinical Excellence in Audiology Award

Awarded to a clinical audiologist whose dedication and clinical excellence have resulted in improved quality of life for numerous individuals with hearing or vestibular dysfunction, who has distinguished herself or himself through innovation in service provision, superior clinical education, and/or effective efforts to educate and inform the public about hearing loss, prevention, and intervention.

Early-Career Audiologist Award

Awarded to an individual who has been providing clinical services in the field of audiology for approximately fewer than 10 years, who has made outstanding contributions to the profession. The recipient shall have made notable contributions in one or more of the following areas: outstanding clinical practice and/or



New Members of the American Academy of Audiology

Julitta Adu-Amponsah, MPH

Hyo Chang Arnold, AuD

Kelli Bogue, AuD

Reanna Campbell

Decia DeMaio, AuD

Elissa Jodon, AuD

Emily Jones, AuD

Shih-Yao David Lin

Aimee Murdock, AuD

Nancy Napolitano, MS

Kerry Witherell, AuD

patient care; teaching or mentoring; advocacy; research; and exceptional service to the profession of audiology.

Honors of the Academy

Awarded to one audiologist and one nonaudiologist for their exceptional support of the field of audiology and/or the patients we serve by focusing on issues that directly affect the profession and/or consumers with hearing loss and balance disorders.

Humanitarian Award

Awarded to an individual who has made significant voluntary and/or philanthropic contributions to under-resourced communities through provision of audiology or ear and hearing services, philanthropic development of educational programs, and/or other service-oriented activities. Work that is done in conjunction with the nominee's employment is usually not considered as being relevant for this award.

International Award for Hearing

Awarded to an audiologist and/or hearing scientist who lives and works outside of the United States who has provided outstanding contributions to the profession of audiology in a clinical, academic, research, or professional capacity.

Jerger Career Award for Research in Audiology

Awarded to an individual for research contributions in the field of audiology/hearing science, whose work has had major impacts on the field and/or practice of audiology.

Marion Downs Pediatric Audiology Award

Awarded to an audiologist for exceptional contributions in pediatric audiology either as an educator, clinician, or scientist.

Outstanding Educator Award

Awarded to an individual who has made significant contributions to audiology through his or her dedication and skill to the education of students. The individual may be a clinical or academic educator but should be a faculty or adjunct faculty member of a credentialed AuD program in the United States.

Samuel F. Lybarger Industry Award

Awarded to an individual who has made important contributions to research or engineering achievements within the field of audiology. He or she should have been, or should be, employed by a company or corporation in the hearing health-care field but must have made contributions that extend beyond their service to the company. 

2017 Case Summaries and New Guidelines for Submitting Complaints and Inquiries

To aid in the understanding of how the Academy's Code of Ethics (COE) is applied and interpreted, the Ethical Practices Committee (EPC) periodically publishes a summary of cases. Following is a summary of cases reviewed by the EPC from January to December 2017. Identifying information has been removed. In addition to the cases below, the EPC also reviewed and responded to numerous general inquiries by members during this time period.

14-02 (CLOSED): A consumer complaint by parents was filed against a member, questioning accuracy and thoroughness of pediatric test results, hearing aid selection and verification, intervention, and follow-up recommendations. The EPC communicated with the respondent for additional information regarding potential noncompliance with the Academy's COE, and the EPC provided a final decision with educational

recommendations. The member appealed the EPC final decision, and the Academy Board of Directors (BOD) accepted the appeal on the grounds that the respondent was placed in an unfair position in recognition of the ongoing legal proceedings. The complainant was notified by the BOD of this decision, and no further action was taken.

14-04 (CLOSED): A member requested an opinion regarding the potential conflicts between the Academy's COE and contractual requirements of a specific buying group and its contracted members, including those who might be members of the Academy. Because this case did not name a specific member and, given the more global issues of this case and the inability of the EPC to sanction nonmembers of the Academy (including individuals and organizations), the 2016 restructured EPC, with BOD input, closed the case in 2017. The complainant was advised to address concerns to the appropriate legal and regulatory agencies.

15-01 (OPEN): A complaint was filed against a member regarding reported use of ethnically offensive language during testing. The member denied the details of the accusation and has filed suit against the complainant, who had also posted a negative review on social media. The case is still open, pending outcome of legal action filed by the member, with anticipated resolution in 2018.

15-03 (CLOSED): A complaint was filed alleging discriminatory, abusive, demeaning and insulting behavior of a member, noting that the member refused to see patient for testing and hearing aid adjustment because his hearing aids were purchased from an internet company (unknown by the providing office at the time of appointment booking). The complainant subsequently billed the member for travel time to the office, wait time in the office, mileage, and late payment penalty. The complainant also posted derogatory remarks on the web regarding the member. After review of communications and input from the BOD, given the nature of the complaints and the jurisdiction of the EPC, it was determined that the EPC is unable to respond further without resolution with the appropriate local governing board, and the case has been closed.

New Complaint Submission Guidelines

Available at www.audiology.org/about-us/membership/ethics

Complaint Form

The EPC has developed a formal complaint form to aid Academy Staff and EPC members in obtaining the necessary details to adequately address a complaint.

THANK YOU TO OUR CORPORATE PARTNERS

PLATINUM



GOLD



SILVER



AMERICAN
ACADEMY OF
AUDIOLOGY



Ethics Inquiry and Complaint Guidelines

The EPC has developed new guidelines with definitions, procedures, and response timelines for Inquiries and Complaints.

Common inquiries include the following:

- Are inquiries and/or complaints confidential?
- Can the EPC become involved if I suspect a manufacturer or buying group does not appear to be in compliance with the Academy COE?
- Am I bound to report unethical behaviors of other Academy members?
- How should I introduce myself as an audiologist if I have an AuD degree?
- Is it ethical to offer patients incentives for referring other patients to my practice?
- Is it ethical to market services by an audiologist when some of the offices in a practice with multiple offices are staffed by hearing aid specialists exclusively?
- Is it appropriate to limit the hearing aid options in my practice to one manufacturer?
- Can an insurance company dictate my hearing aid options?
- Can members accept an invitation to a manufacturer-sponsored CE event?
- Do we have a responsibility to ensure our AuD students are eligible for ASHA CCCs?
- What is my responsibility in ensuring my AuD students have clinical rotations that meet best practices?
- And more....

For more information about the Ethical Practices Committee, contact the committee at ethics@audiology.org. 

A special discount for Academy members

American Academy of Audiology members could save even more on **GEICO** car insurance with *a special discount*.

GEICO® **#MemberDiscount**
geico.com/med/aaa | 1-800-368-2734



Some discounts, coverages, payment plans and features are not available in all states or all GEICO companies. GEICO contracts with various membership entities and other organizations, but these entities do not underwrite the offered insurance products. Discount amount varies in some states. One group discount applicable per policy. Coverage is individual. In New York a premium reduction may be available. GEICO may not be involved in a formal relationship with each organization; however, you still may qualify for a special discount based on your membership, employment or affiliation with these organizations. GEICO is a registered service mark of Government Employees Insurance Company, Washington, D.C. 20076; a Berkshire Hathaway Inc. subsidiary. GEICO Gecko image © 1999-2017 © 2017 GEICO

ACADEMY PARTICIPANTS SUPPORT OUR PROFESSION

The Academy's Loyalty Media Programs offer organizations the opportunity to connect with Academy members and the audiology community.

You can find participants featured here in *Audiology Today* magazine, on our Web site (www.audiology.org), and at Academy events. Consider supporting the companies that support your association.

Current Loyalty Media Program companies include:



For more information about the program, contact Samantha Leland at sleland@mci-group.com.

Advertiser Index

Alpaca Audiology www.tscp.com	42
Army USAAC www.healthcare.goarmy.com/ha88	33
Auditec, Inc. www.auditec.com	59
CaptionCall, LLC www.captioncall.com/provider	C2, 1
Eosera Inc. www.earcaremd.com	22, 23
FrontRow Calypso LLC www.gofrontrow.com/at-juno	55
FYZICAL Therapy & Balance Centers www.AuDBalance.com	69
Hamilton CapTel www.HamiltonCapTel.com/AT718	7
Nupur Technologies www.nupurtech.com	9
Oticon, Inc. www.oticon.com/research	109
Otometrics/Audiology Systems www.otometrics.us/fitting	18
On-Trend: Shoebox Audiometry/Nuheara www.nuheara.com/ www.shoobox.md	73
Prestige Brands, Inc. www.debrox.com	60
Sennheiser electronic GmbH & Co. KG www.sennheiser.com/set880	12
Signia Pro.signia.com	C4
Sonic www.sonici.com	51
Sprint CapTel Professionals.sprintcaptel.com	2, 66
Vanderbilt University Medical Center www.vanderbilt.edu	63
Widex USA, Inc www.widexPRO.com	5
ZPower, LLC www.ZPowerhearing.com/ask-the-expert	45

Academy Products and Services

AAA 2019 Call for Presentations www.AAAConference.org	83
Audiology Solutions Network www.audiologysolutionsnetwork.org	77
Certificate Holder-Tinnitus Management www.eAudiology.org	92
Corporate Partners www.audiology.org	106
eAudiology Web Seminar Package www.eAudiology.org	94
Geico www.geico.com/med/aaa	107
hearScreen USA www.hearScreenUSA.com	Insert, 102
Membership—Student Upgrade www.audiology.org	79
Public Awareness Week 2018 www.audiology.org	84, 85
Peer-to-Peer Mentoring Program www.audiology.org	93
Research Grants www.audiology.org	44

The evolution continues



1,000,000

Oticon Opn™ hearing aids sold

Closing another gap to normal hearing

The Opn evolution continues with newly released research that proves Oticon Opn is closing yet another gap to normal hearing.

By improving speech understanding in noise, while significantly reducing listening effort, Opn empowers people with hearing loss to participate actively in the same environments as people with normal hearing.* But the real proof that Oticon Opn brings life-changing benefits is the more than 1,000,000 hearing aids sold, empowering users to **open up to the world.**

Join the evolution. Learn more at www.oticon.com/research

Replicating nature.

Signia Nx for a natural hearing experience with highest discretion.



Silk Nx: Practically invisible with the natural sound of Signia Nx.

A practically invisible solution

The new Silk™ Nx, ready-to-wear hearing aids are redesigned to be 20 percent smaller than previous models. They also feature darker faceplate colors to blend into the ear canal and decrease visibility.

Better sound quality

Built upon Signia's Nx technology platform, the new Silk provides wearers with a natural hearing experience. Silk Nx hearing aids also enable natural directionality and wireless streaming between both ears to make sure wearers hear what's most important.

Ready-to-wear design

Silk hearing aids offer a secure fit for almost every ear due to their super-soft and flexible silicone Click Sleeves. Their design allows for an immediate, hassle-free fit, without the wait times typical of other custom-fit hearing aids.

More innovative features

Silk Nx also includes new features like TwinPhone, enabling wearers to put a phone up to one ear and hear the call through both hearing aids. The new CROS Silk Nx is the world's first CIC solution for unaidable hearing loss in one ear. CROS Silk Nx hearing aids include wireless CROS/BiCROS

transmitters that transfer sound from the unaidable ear to the better ear, enabling the wearer to hear from both sides.

Visit signiausa.com/silknx or contact your Signia sales representative at (800) 766-4500 for more information.



Silk Nx