Minnesota Academy of Audiology
Newsletter
September 2020

Message from the President

Moving Forward

Kristi Gravel, Au.D.
2020 MAA President

The past three months have been hard. In late May, the murder of George Floyd ignited a response in Minneapolis, and subsequently the nation, which was a call for acknowledgment and action. The MAA Board of Directors released a statement with a commitment to increasing diversity and inclusion within our organization. Later in this newsletter, there is more information about the newly formed MAA Diversity and Inclusion Task Force, a first step for our organization to make positive changes.

We remain in the clutches of the COVID-19 pandemic. Our offices have adapted and resumed patient care. For many of us, wearing a mask and a face shield or goggles is de rigueur. With the governor's face covering mandate in late July, the general public is experiencing the challenges associated with reduced visual cues during communication. The importance of utilizing strategies to improve communication - our area of expertise – is a topic discussed by most people as they interact when using a face covering. People who may have been in denial about seeking hearing healthcare in the past, those who were able to get by using visual cues, now need our services more than ever. Are we prepared to meet this demand?

Annual events are being canceled or altered due to safety precautions. In these times of disappointment with the loss of tradition, there is also the hope and potential of finding a new opportunity. The Audiology Awareness Committee is organizing MAA's first virtual 5K Run, Walk, and Roll in October. UMAC is going virtual in early 2021. Our committees have risen to the challenge of adapting in 2020, and I anticipate that we will use these opportunities to come together in ways we hadn't even imagined in the past.

My term as MAA President is over halfway complete. When I entered this role in January 2020, I had no idea what this year would hold, yet I had the gut feeling that it would be an exciting, fulfilling experience because I was part of a great team. As I reflect on the past eight months, I have been blown away by the unparalleled dedication I have observed from our board members, committee chairs, committee members, and administrator. We know that helping people achieve their full communication potential can transform lives, and our profession is vital to meeting this potential. To achieve these ends, audiologists in Minnesota need to be supported and advocated for, and the public needs to be made aware of what we do.

MAA is not merely a professional organization. After our members take off their masks and face shields after a long day in the clinic, lab, or office, we gather virtually for board meetings, committee meetings, and informational sessions because we know that audiology in Minnesota needs to exist, and Minnesota audiologists require adequate resources to do our best work, now and for the future.

cont.

In This Issue

Featured Article

Get Prepared: It's Time for A(nother) Culture Audit

Karen Beverly-Ducker, MA, CCC-A, CAE

There is nothing quite like the sense of relief once an audit has been completed. Ideally, the findings reveal that everything is in order and that any recommendations or areas of concern are manageable and easily addressed.

You may have completed a culture audit, made some changes, and then crossed it off your To-Do List. So, why is this 2014 article being re-printed? Why now? Mainly, it is because audits- of any type- are not and should not be "one-and-done" activities. Hopefully, you routinely conduct culture audits because culture is dynamic, complex and constantly evolving. Take a look at the many cultural shifts that have taken place in just the past 6 months. Things are different. People are different. Expectations are different. Needs are different. Options are different. Responsibilities are different. Awareness is different. Responsiveness is different. The 2014 article served to initiate action but changes made then may no longer be appropriate or be enough. The 2020 reprint is meant to stimulate a reminder- "Get Prepared: It's Time for a(nother) Culture Audit!"

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There are many different types of audit, some more familiar than others. An income tax audit involves an Internal Revenue Service review of reported income and the determination that all credits, deductions, and exemptions taken were appropriate. A financial audit involves a review of accounting records, internal controls, policies, cash holdings, and the other financial areas of a company or business. A Medicare recovery audit is conducted to uncover and prevent Medicare fraud, waste, and abuse. A patient care audit is often used as part of a quality improvement initiative and includes a review of medical records to measure the quality of patient care. The ASHA certification maintenance audit is a random evaluation of an individual's records and is used to verify compliance with the standards for certification maintenance.

Independent of the type of audit being conducted, there is often a level of anxiety associated with the activity. However, performing your own audit in advance can help to identify areas needing focus and to prepare for reviews that may be conducted by others.

Culture Audit

The cultural values and preferences of all individuals involved as well as those of the setting or environment can impact all aspects of a "business." For example, a consumer information initiative, marketing strategy, training program, advertising campaign, or personnel policy that is highly successful in one culture may be wholly ineffective in a different culture and have wide-reaching impact on outcome, compliance, and overall goodwill.

A culture audit involves the review of the cultural values and preferences of the overall setting, organization, or business. In the professional service delivery setting, this includes both how the professional service provider and the client/patient respond to, for example, clinical services, strategies, products, practices, policies, communications, and recommendations in light of cultural influences. The culture audit is designed to define work behaviors and approaches to service delivery, identify problems with the system, and remove barriers to professional service delivery.

A culture audit also involves the overall review of the cultural values and preferences of the professional service provider as well as the client/patient. This includes an examination of the wide array of differences as well as similarities across cultural variables from the two perspectives.

For the professional service provider, this process is also referred to as *cultural competence*. "Developing cultural competence is a dynamic and complex process requiring ongoing self-assessment and continuous expansion of one's cultural knowledge. It evolves over

cont.

President, *cont.*

Thank you to everyone who has been working on MAA initiatives behind-the-scenes. We have achieved so much this year, and I anticipate that we will surprise ourselves with what we accomplish in the coming months. Stay safe and healthy, everyone!

Culture Audit, *cont.*

time, beginning with an understanding of one's own culture, continuing through interactions with individuals from various cultures, and extending through one's own expansion of knowledge. Professional competence requires that audiologists and speech-language pathologists practice in a manner that considers each client's/patient's/caregiver's cultural and linguistic characteristics and unique values so that the most effective assessment and intervention services can be provided." (ASHA, n.d.)

Performing A Culture Audit

A formal, customized culture audit typically consists of five phases—needs awareness, diagnosis, planning, action, and evaluation—and provides action plans based on results. The audit may be conducted by an external, independent consultant or completed internally by an advisory team consisting of staff members and patients/clients. During the diagnosis phase, the advisory team identifies how the data will be gathered; collects, reviews, and analyzes the data; and then outlines the desired culture. During the planning phase, the advisory team develops the plans for intervention and change. During the action phase, the culture begins to move toward its desired or envisioned future. This phase often requires change in the organization's systems—technology, structure, decision making, budgeting, and managing. During the evaluation phase, the organization assesses the impact of its culture on its performance.

In preparation for (or in the absence of) a formal customized culture audit, valuable information can be gathered and considered. In general, focus may be directed to three major areas—policies, procedures, and processes; service providers; and clients/patients served—to assess the current cultural state. Each area should be reviewed with consideration given to how the area may be impacted by cultural variables, such as race, ethnicity, culture, language, dialect, national origin, gender, gender identity or expression, sexual orientation, age, religion, socioeconomic status, and/or ability.

Questions for Guidance

Policies, Procedures, and Processes

- Does the professional setting have a vision statement, a mission statement, and strategic goals that reflect inclusiveness and a commitment to culturally competent care?

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Culture Audit, *cont.*

- Do current policies, procedures, and processes hinder or support the vision, mission, and strategic goals?
- Do current policies, procedures, and processes support efforts to accomplish work or do they impede progress?
- Is written information provided in languages in addition to English?
- Is the facility accessible by individuals with different needs and levels of ability?
- Are the professional services accessible in terms of language(s) used? Does this extend to the first point of contact-for example, when scheduling?
- Are there scheduling options, such as evening and weekend hours?
- Are materials and resources available that are appropriate for working and communicating with individuals who do not use spoken English?
- Are financial resources available to support the acquisition of materials, assessment tools, etc. that meet diverse cultural and linguistic needs?
- Is a teamwork approach used to deliver services, and does that approach include and acknowledge the valuable role of different team members (e.g., the audiologist, audiology assistants, interpreters, etc.)?
- Are human resources dedicated to meeting the needs of diverse populations?

Service Providers

- Are professional service providers prepared to provide services to diverse populations?
- How do individual service providers describe the culture of the professional setting?
- How do individual service providers display and share their cultural identities?
- Are there opportunities for individual service providers to assess, understand, share, and celebrate their respective cultures?
- Are there specific strategies for recruiting and retaining diverse staff members?
- Do the knowledge and skill sets of staff members mirror the needs of the patient/client population?
- Is there funding specifically dedicated for professional education in the area of cultural and linguistic diversity?
- Are professional service providers aware of the regulatory requirements, mandates, and national standards regarding the provision of language services?
- Do staff members know how to access needed resources (i.e., interpreter services, telephone or video language services) for individuals who do not use spoken English?
- Do service providers have the needed skills to explore client/patient perspectives and cultural and religious beliefs related to health, illness, and treatment?
- Does the staff "photo" reflect diversity? Is this diversity reflected across all positions?

Clients/Patients

- What is the typical profile of the patients/clients seen?
- Does the typical patient/client profile reflect that of the community?
- How often is community-level demographic data collected?
- How is information gathered about the client/patient perspective?
- Do clients/patients have the opportunity to share their individual cultural influences, practices, and preferences?
- Is consumer satisfaction data gathered related to cultural and linguistic services?
- What are the physical signs of the culture in the professional setting?
- Do photos, artwork, brochures, etc. reflect a variety of people and family groupings so that clients/patients "see themselves"?

The objective of the culture audit is to help gain an understanding of the current culture. As with all audits, a culture audit represents that moment in time.

- Does signage convey information in a variety of forms?

The Value of A Culture Audit

The objective of the culture audit is to help gain an understanding of the current culture. As with all audits, a culture audit represents that moment in time. Culture is dynamic and should be periodically reviewed. The results from the culture audit will either confirm the efficacy of the current culture or help to identify areas in need of change. All information gathered-both the positive aspects and the more challenging aspects-are needed for the creation and maintenance of the desired culture and to ensure appropriate service delivery for diverse populations.

Karen Beverly-Ducker serves as the director, Multicultural Practices, at the American Speech-Language-Hearing Association (ASHA) and as the ex officio to ASHA's Multicultural Issues Board. Her area of focus is the influence of cultural and linguistic factors on the many aspects of professional service delivery. Contact her at kbeverlyducker@asha.org.

- American Speech-Language-Hearing Association. (n.d.). Cultural competence [Practice Portal]. Retrieved February 18, 2014.
- ASHA Multicultural Affairs and Resources
- Special Interest Group (SIG) 14, Cultural and Linguistic Diversity
- Special Interest Group (SIG) 17, Global Issues in Communication Sciences and Related Disorders

Better Speech and Queering:

Welcoming LGBTQ Patients and Colleagues into Your Practice

Riley DeBacker

"Remember that audiology is a conservative profession."
That message was one of the first sentiments shared by my professor in our resume-writing and interviewing course. She shared this as a warning so that we could be careful in censoring volunteer experiences from our resumes as we were seeking externships. I'm sure that some of you are nodding now as it makes sense to remove anything that *might* be the reason you don't get the job. However, my "controversial" volunteer experiences were with LGBTQ organizations and I was also engaged to another man. Suddenly, I had to evaluate whether I wanted to work somewhere LGBTQ volunteers wouldn't be welcome, because I wasn't sure that my now-husband and I would be welcome there.

Fast forward a few months to interviews; I got my first one! I had to request an alternate time, however, as I would be on my honeymoon. When the interviewer emailed back well wishes for my husband and I, I froze. This kind sentiment propelled me to re-read our correspondence as far back as my application materials to find anywhere that I had mentioned being gay, but I couldn't find anything. I emailed my references to see if for some reason they had mentioned it. Then I remembered that my social media was full of photos from my recent wedding. I have no reason to hide my sexuality, but in that moment all I could think of was the semester I had spent with a preceptor who made homophobic jokes and all the well-meaning faculty who had worried about challenges I might face in this "conservative field." Those nerves stayed with me throughout my honeymoon and into the, otherwise entirely pleasant, interview.

The time came for my final externship interview. As I checked in, I noticed a flyer on the desk highlighting services for LGBT patients. When I was called back, I noticed a small rainbow flag outside an office and felt myself relax. The interview went well and during my time there, a colleague actually distributed those same rainbow flags to other audiologists so that a small symbol was in every booth. That audiologist, another resident, and I presented locally and at the Joint VA-Defense Audiology Conference (JDVAC) on creating more LGBT-inclusive audiology clinics. My experience wasn't just supportive, it was affirming. After our presentation, audiologists shared that they'd not thought that "these things" were important to patients until they made an effort and showed their support. After that, patients began opening up and sharing their thanks along with their complete case histories and stories.

"Sounds like it all turned out well!"
If you're thinking that this story had a pretty happy ending, so am I! I'd also point out that the happy ending involved moving more than 1000 miles away to work at a clinic that I loved and learned a lot from. I was very fortunate to be able to do that and to have resources available to support me in that move. Many students and audiologists may not have the opportunity to find a setting that is actively welcoming. It's important for us all to ensure that all audiology clinics are open to qualified candidates and that all audiologists and students can feel comfortable coming to work and learn each day.

This also isn't exclusively about our colleagues. As audiologists, we seek to help our patients safely navigate the world by improving their access to hearing and balance, but remember that patient-centered care means looking at our patients as complete people. In a 2011 survey by Kelly and Robinson, 79% of LGBT individuals with hearing loss felt that their identity was a barrier to receiving services and only 4% of respondents disclosed their identity to their provider. For comparison, 57% of respondents indicated that their LGBT identity was a barrier to speech-language services and 43% of individuals disclosed their identity to their SLP.

While this survey is nearly a decade old and I sincerely hope that these numbers would look different today, I know that each of us can play a role in ensuring that our patients feel comfortable in our care and actively remove barriers currently in place that may prevent that. For any of you interested in expanding your clinic to be more inclusive of LGBTQ patients and colleagues, here are some first steps and resources to learn more:

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Queering, *cont.*

Strategies to make your clinic more LGBTQ-welcoming:

1. Show your support (This tip is first because I think that it is the easiest way to actively show your openness without requiring active, ongoing work .)
   - By including a small symbol like a pride sticker, flag, or pamphlet in your booth, office, hallway, and/or waiting room, you can signal to patients that you welcome them in your clinic. This is one of my favorite strategies as it is something that will be seen and understood by those in the LGBTQ community and is often an open signal to them that they should be comfortable coming out to you in ways that are important to the appointment.
   - If you'd like to signal that you specifically are open to these patients or can't advertise in a booth or office, consider including a small sticker or pin on your name badge or lab coat. I've often heard from concerned audiologists that they're worried this is co-opting a symbol or suggests that they themselves are LGBTQ. It's important to say that you should only do things that you are comfortable with, but that if you are uncomfortable with what those around you may assume in these instances it may be healthy to interrogate why that is and work on understanding how that may impact your patient care.
   - Including your pronouns in your email signature, biography, name badge, and business cards is another symbol of support. Incorporating these can signal to others that you welcome the same. Again, I have heard that some are worried that by including pronouns you may be signaling that you are trans. It is important for cisgender (see Glossary reference below) allies to include their pronouns so that this is not a valid assumption and may even provide the opportunity for you to educate briefly on why you've included them so that you can help dispel that harmful stereotype.

If you don't know the relationship between a patient and their companion, consider neutrally asking about that relationship. Until the patient has defined that relationship, use neutral terms like "companion" that don't assume a relationship.

2. Use welcoming language
   - Patient interactions begin as early as your waiting area. For all of the tips included here, remember that you may want to discuss the choices you make for your clinic with your entire staff, including front desk staff and other providers.
   - If you don't know the relationship between a patient and their companion, consider neutrally asking about that relationship. Until the patient has defined that relationship, use neutral terms like "companion" that don't assume a relationship.
   - While common in polite conversations, gendered honorifics like Mr. and Ms. can put patients in an uncomfortable place if the wrong one is used. Consider how your case history or intake forms include this kind of language and ways that your patients can indicate their preference. If you're looking for a non-gendered alternative when calling back patients, consider simply calling their name and allowing them to indicate how they'd prefer to be called.
   - Since legal names used for insurance or legal purposes may not match up with a patient's chosen name, consider having a way for patients to indicate their chosen/preferred name and pronouns. This can help to avoid putting the onus on a patient to correct you and can help you start building your relationship with them right away. This is also handy for patients that go by a nickname or middle name!

3. Avoid assumptions
   - Not all opposite-gendered pairs are in a romantic relationship, not all same-gendered pairs are friends or neighbors, and not all young and old pairs are family. As mentioned above, prompting a patient for their relationship with a companion can help avoid awkward interactions for you, the patient, and their companion!
   - Not all patients who indicate that they are partnered or who wear a wedding ring have an opposite-gender partner. Rather than asking a male patient about his wife, consider using a more neutral term like spouse or partner. This allows a patient to identify their relationship with that partner using the terms that are most comfortable to them.

cont.

A publication of the Minnesota Academy of Audiology, distributed to MAA members with information pertinent to the field of audiology. Information contained in this publication is obtained from sources considered to be reliable; however accuracy and completeness cannot be guaranteed.

Address all questions and comments to the editors:
Rachel E. Allgor, Au.D., FAAA
Eric Robert Barrett, Au.D., ABAC
Katie Awoyinka, Au.D., CCC-A, CH-TM

Queering, *cont.*

- Unless a patient has specified their gender, be careful not to assume it based upon name or presentation alone. There are many reasons why a patient might not present in a way that aligns with your expectation of their gender. Similarly, not all individuals have access to the legal process for name changes.

4. Educate yourself
   - As professionals that work with all people, it's likely that at some point we will run into a patient with an experience we don't understand. As tempting as it may be to ask that patient to help us better understand them and their needs, it is important to remember that just like we have online resources to educate us when we encounter unfamiliar medications, symptoms, and situations, there are online resources that we can consult before asking a patient to do the work required to educate us.
   - At the bottom of this article, I've included some resources to become better acquainted with LGBTQ patients of all ages and races. It's important to note that the way that LGBTQ identity intersects with other marginalized identities can have a synergistic impact and so in order to best support LGBTQ patients of color, it is important to understand their multiple identities and the ways that those interact.
   - When encountering a new situation, it may be tempting to reach out to individuals who are more "in the know" than you are. This can be a great resource! First, however, be sure that you've done some research of your own to understand what you can from the tools available to you. If that is not enough, be sure to ask friends or colleagues if they have the bandwidth to help support and educate you before asking them to do so. And remember that if you're going to ask, you should be prepared for them to say "no" and ready to move on to another resource if they do.

5. Remember to show your colleagues the same consideration you show patients
   - Until June of this year, there were no federal protections to prevent LGBTQ employees from being fired for their identity. While the recent Supreme Court ruling broadens the Civil Rights Act of 1964 to include these individuals as protected classes under the law, this legal action alone does not ensure the protection of these workers.
   - Consider the ways that you interact with your colleagues. Protecting and creating spaces for our patients is essential, but so is ensuring that our workplaces are comfortable places for our coworkers. In the same way that you extend the above considerations to your patients, I encourage you to evaluate the way that you interact with your colleagues and coworkers. Before assuming things about a new coworker, remember that you may be creating a situation where they have to actively choose to come out to you and the ways that can impact their comfort in the workplace.

Resources to Learn More

For you:

- LGBTQ Glossary
- The Gender Unicorn (A visual primer explaining some common LGBTQ concepts)
- Resources to Support LGBTQ Students
- Kelly, R. J. & Robinson, G. C. (2011). Disclosure of Membership in the Lesbian, Gay, Bisexual, and Transgender Community by Individuals with Communication Impairments: A Preliminary Web-Based Survey. American Journal of Speech-Language Pathology 20(2), 86-94. https://doi.org/10.1044/1058-0360(2011/10-0060)

For your patients:

- Gay, Lesbian & Straight Education Network (GLSEN)
- National Resource Center for LGBT Aging
- American Veterans for Equal Rights
- National Center for Transgender Equality

Riley DeBacker is an AuD/PhD candidate at The Ohio State University working on his dissertation on the ototoxic effects of antiretroviral drugs. He is a past-president of the national Student Academy of Audiology and recently completed his externship at the James A. Haley Veterans' Hospital in Tampa, FL. Riley is also a part of CAPCSD's AUD Externship Working Group and the International Ototoxicity Management Guidelines Working Group.

Welcome New Members

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Sarah Almquist, Au.D.
Alexandra Borders, Au.D.
Julia Omtvedt, Au.D.

Students

Randi Rankl
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Member Spotlight

Carly Kempton, Au.D., CCC-A

Clinical Audiologist at M Health Fairview

How did you first become interested in the field of audiology?

I had a friend introduce me to the profession. I was originally a psych major but after taking a few intro classes in communication disorders I realized that I found audiology more tangible and interesting so I decided to take this route instead.

What do you find the most rewarding part of working in a clinical setting?

The relationships I build with my patients. My coworkers often tell me I get too chatty with patients and run behind in my schedule, but I wouldn't have it any other way. I also like that our field isn't stagnant. To be in audiology you need to be a life learner because things are constantly changing. When I first started, I never imagined having to learn about Bluetooth and things like that. It's so fun to see how our field progresses.

You do a lot of practicum student and extern supervision. How does supervising students fit into your practice?

It's a large part of my practice. One of my biggest passions is teaching. At one point in undergrad I thought about being a teacher but doing lesson planning turned me off. I find it rewarding to see students grow in their skills. I also feel like I learn a lot from them, it keeps my skills fresher when I hear about what they are learning about and what's new in the field. It also keeps me accountable, I do better clinical work because I am doing my best to set an example.

Why do you feel being a member of MAA is important?

MAA does a significant amount for our field and the community of audiology. For someone such as myself who was a long-term member and stopped for a while, after rejoining I definitely see the benefit of keeping my membership active and encourage others to as well. They have done a good job of keeping members engaged during COVID-19 and committees such as the government relations do a lot more behind the scenes for our field than I ever realized.

What do you do for fun outside of work?

I spend a lot of time with family and friends. Not a big surprise to people who know me, but I am very social. I go camping during the summer and winter is filled with hockey and other kids' activities which is also my social time since I have gotten to know other parents. I also enjoy quiet time and reading as well.

Sponsored Article

Where is eAudiology Heading Since COVID-19?

Michael Blackburn, Au.D.

Before COVID-19, telehealth technology and its use did not have widespread adoption among health care personnel and patients. That all changed once the pandemic created social and policy changes. According to CivicScience data, the number of U.S. adults who reported intent to use telemedicine rose from 10% to 30% from February to March 2020.

As hearing care providers have begun to re-open their practices, many are looking for a balance between in-practice appointments, providing quality hearing healthcare to their patients and accommodating social distancing requirements.

eAudiology and the Patient's Hearing Journey

The Phonak eAudiology initiative includes a suite of eSolutions which are designed to support a digital hearing care journey. This includes the following:

- **eScreener (online hearing screener)**: An eScreener is an initial assessment tool to screen the patient's hearing and inform them if a consult with a hearing care provider would be beneficial to them. The results of the eScreener can provide the hearing care professional a general outline of the patient's hearing loss and the ability to be fully prepared for the appointment beforehand.
- **Phonak Remote Support**: Remote Support offers connectivity (audio

cont.

eAudiology, *cont.*

and video) to patients in real-time and with the ability to adjust nearly all settings available in an in-person Phonak Target session. After the initial evaluation and hearing aid fitting, Phonak Remote Support becomes a powerful follow-up tool, allowing convenient follow-up for both the patient and provider. Once a patient is enrolled, initiating a session is simple and should be scheduled using existing clinic processes.

- **myPhonak app**: This app, for any hearing aid and smartphone user, allows quick adjustments to volume and custom program settings, as well as the activation of accessory devices (TV Connector, Roger, etc.). Phonak Remote Support is also integrated into the myPhonak app, so patients do not need to use yet another app if they are already a myPhonak user.

Who is 'Right' for Remote Support?

Any patient meeting technical requirements for Remote Support may be considered as a candidate for this technology. Patients with a smartphone that's compatible with Phonak Marvel™ or Audéo B-Direct hearing aids meet these technical requirements.

In the past, hearing care providers may have only considered their more tech-savvy patients for Remote Support. However, a 2019 AARP survey revealed that nearly 30% of Baby Boomers already use smartphones to manage and receive medical care, and that 53% would prefer their medical needs to be managed by a combination of healthcare professionals and technology.[1]

Additionally, due to current social distancing requirements, many hearing care providers are exploring new ways of providing hearing care to their patients, including those less comfortable with technology.

This not only applies to rural areas where patients can avoid the inconvenience of travelling long distances, but also to urban areas, especially for patients who may have mobility issues or challenges with transportation. eAudiology allows a simpler, more efficient, yet customized delivery of hearing healthcare, removing many barriers patients face that keep them from treating their hearing loss.

For patients who are less comfortable operating smartphones and apps, consider including family members (and their devices) to facilitate a Remote Support appointment. Consider reaching out through an initial phone call to see how they are doing and then offer follow-up through Phonak Remote Support.

AudiogramDirect: Now Available Via Phonak Remote Support

AudiogramDirect is a form of in-situ hearing assessment using Phonak hearing aids. With the latest release of Phonak Target 6.2.8, AudiogramDirect is now available via Remote Support.

Phonak Field Study News provides evidence of AudiogramDirect reliability with "Audiogram and AudiogramDirect: comparison of in-clinic assessments." This important validation of Audiogram-Direct instills confidence in the results you obtain to verify your patient's hearing thresholds, which includes:

- Retrospective analyses of 167,772 in-clinic assessments compared to AudiogramDirect measurements.2
- High level of correlation between standard audiometry and in-situ audiometry (AudiogramDirect), suggesting a high level of agreement between the methods. 95% of examined thresholds fell within a range ± 15 dB HL with the average difference between AudiogramDirect and standard audiometry less than 1 dB HL.[2]

These findings were further supported by a follow-up Field Study News of AudiogramDirect while using Phonak Remote Support. Learn more here.

When a patient or the audiologist is concerned hearing may have changed, AudiogramDirect allows the provider to do a fast and accurate check of pure-tone audiometry thresholds. This can determine if further evaluation is required. In the meantime, the provider can use this new data to configure the hearing aid gain settings to the patient's current hearing status.

During the COVID-19 pandemic, providers have been able to utilize AudiogramDirect as a safe alternative to an in-person hearing test. It should be noted that AudiogramDirect does not replace an in-person test, and it is expected that a full audiologic evaluation be conducted as soon as possible.

eAudiology is an effective model and has been demonstrated to provide advantages for patients and providers[3]. eAudiology should not replace in-person patient care, and that is not the intention. It may not be suitable for every patient, but can open opportunities for hearing care professionals to reach patients and offer services that they may not have been able to offer before.

Patients are relying on their hearing health to stay connected—hearing their families and medical professionals, talking on the phone, listening to news and television. Offering them an eAudiology solution balanced with in-person appointments might be the key.

[1] "Older Adults Keep Pace on Tech Usage," aarp.com

[2] Phonak Field Study News | Audiogram and AudiogramDirect: comparison of in-clinic assessments.

[3] Phonak Field Study News | Benefits and technical feasibility of providing remote hearing aid support for follow-up appointments.

2020 Gloria Gross Scholarship Winners

The Gloria Gross Scholarship is an award given out each year by the Minnesota Academy of Audiology (MAA). The scholarship is awarded to high school seniors who have hearing loss. Applicants are nominated by MAA members and winner(s) are selected by the Audiology Awareness Committee.

The scholarships are traditionally funded by money raised during the silent auction at the Upper Midwest Audiology Conference and the Minnesota State Fair Hearing Screenings. Thank you to those who helped support the silent auction this year as well as those who submitted applications and nominations. The committee received ten applications this year which made the selection process difficult. A total of $4500 in scholarships were awarded and the scholarship recipients' essays are included here.

Faith Borgerding

nominated by Charles Stone, AuD

Please tell us about your hopes and dreams for the future.

My hopes and dreams have impacted my decisions in my studies. In the future, I hope to have my bachelor's degree in business and I have dreamt about starting my own business after I obtain it. I hope to finish my associate's degree by the end of next summer while majoring in business, and then continue my education at the University of Minnesota and finish my bachelor's degree there. I hope to finish my studies thoroughly and as quickly as possible because I hope to get started on my career to be able to start to work towards my dream.

My longest dream is about opening a business that is an environmentally friendly clothing store and the items would be made out of recycled materials. This is my dream because we waste many materials on clothes and most of those materials can be used again in other items of clothing, and that's what I hope to achieve in starting this business. Another part of this dream is to use the money being brought in by consumers, and then use it for donating money into the environment or other organizations that are collecting money for humanitarian causes.

How would you convince someone with a hearing impairment to see an audiologist and follow hearing aid recommendations?

Personally, how I would convince someone with a hearing impairment to see an audiologist and follow the hearing aid recommendations can vary depending on the person. If someone is scared about going to the audiologist and doesn't feel comfortable with going alone, I would offer to help and go with them. This way is the best to show that they aren't alone and that they can ease into trusting the audiologist and listen to their recommendations.

On the other hand, if you recommend to someone that they should see an audiologist and follow the recommendations for hearing aids that are convinced they have perfect hearing, there is a different way to approach them. Try to properly ask them if they would want to go get a hearing test to see if their hearing is a problem. At this time if the testing is showing results of a hearing loss, give them support, and get them to an audiologist. Go with them to help ease them into the process of getting hearing aids and getting to know their audiologist.

Travis Riddering

nominated by Sarah Kahley, AuD

Please tell us about your hopes and dreams for the future.

Hello my name is Travis Riddering, I am deaf/hard of hearing and have cochlear implants.

I am a senior at Prior Lake High School. My plan is to go to college in the fall of 2020. The program I picked is Automotive Technician at Dakota County Technical College. I am very enthusiastic about it because it is what I want to do with my life and career. My hopes and dreams are to work on automotives and open up a shop one day with my family. These dreams are being quickly realized since I am going to college this fall to get a degree as an auto technician and my parents are building a shop.

Since I am deaf/hard of hearing, I've had many people in my life tell me that I couldn't do it. They doubted me as deaf person. Telling me I can't work on cars and that it is a hearing person's job. People also thought it was absurd to try to hear the car problems. I did not let any of that stop me. It has only made me more determined to achieve my dreams of becoming a mechanic. Any hearing problems that come with the cars I can use my other senses like I have done already to help determine where the noise is coming from. If I do need assistance I usually use my hands to feel for vibrations and to touch to see if anything is unusually hot, my eyes to see anything out of place, my hearing if the

cont.

Scholarships, *cont.*

problem is loud enough for me to hear, and finally use my sense of smell to see if I can detect burning oil or liquid leaking. Once I go to college next fall, I'll be able to prove that deaf people can reach their hopes and dreams too.

How would you convince someone with a hearing impairment to see an audiologist and follow hearing aid recommendations?

I would convince someone with a hearing impairment to see an audiologist by telling them my own story. When I was 22 months I was finally diagnosed with a profound hearing loss. At the age of 13 I lost what little hearing I had. I had the option of being deaf or getting cochlear implants. My parents were there standing behind whatever I decided. I had the surgery. After the surgery I went to go see an audiologist to have them turn on my implants so I could finally hear again. I was terrified to go because I came up with a bunch of what-if situations through my head. My biggest question was what if they try to make me be able to hear again and it doesn't work? All of that would've been for nothing then.

Once we got to my audiologist, she kindly introduced herself to my family and I. The audiologist's name was Barb, and she happily helped explain how cochlear implants work via sign language interpreter. I felt much more comfortable about my own hearing. We turned on my implants through a program on her computer, then I was able to hear again! It was a moment of my life I will never forget because after so much time, I was able to hear again. I remember hearing all new voices around me. My mom, dad, the audiologist Barb, and the sign language interpreter. Barb then decided to change the volume of my Implants so I could hear even more things.

I don't regret ever going back to the audiologist then, because I know every time now Barb will be able to improve my hearing ability a little bit better every single time. It made me who I am today. I am a proud deaf/hard of hearing teen who enjoys advocating for people with hearing loss. I will be a deaf/hard of hearing mechanic. I will be anything I choose because hearing loss is just part of life for many. You just have to be strong and adapt.

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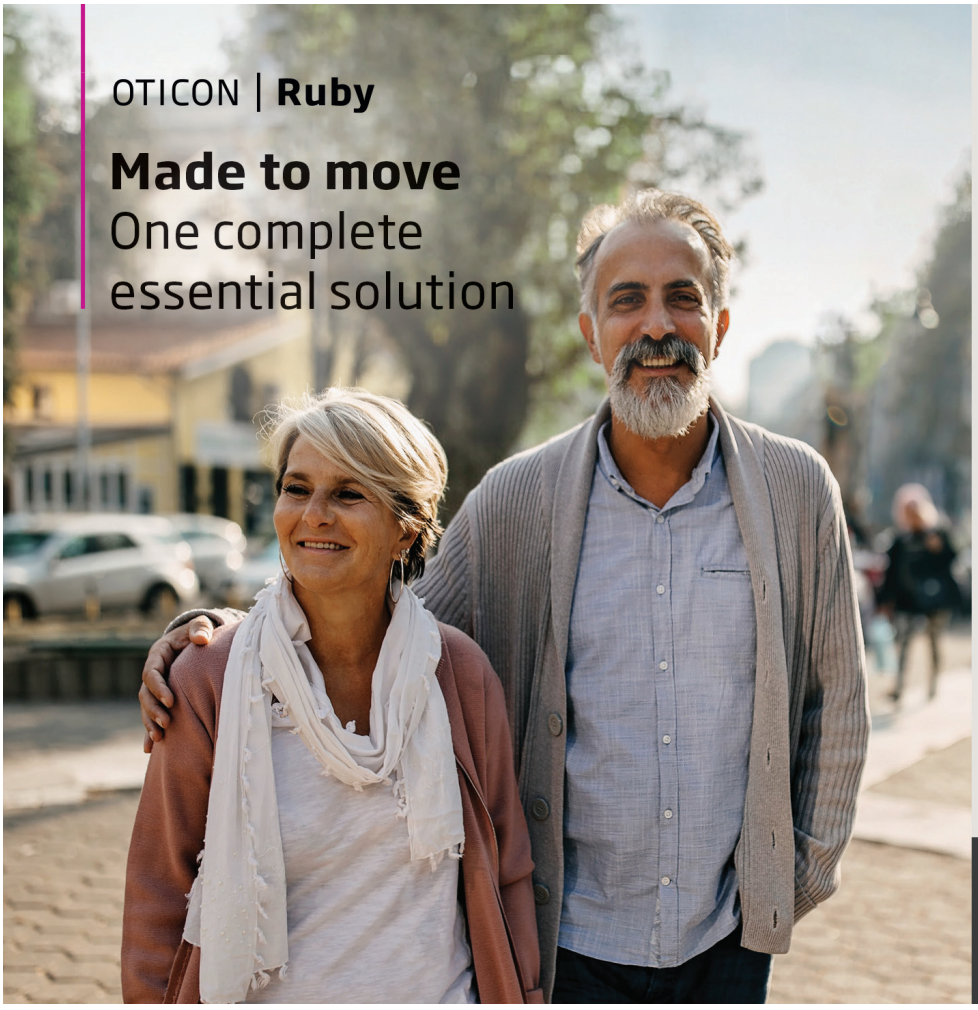

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Alexandria Russell

nominated by Jenne Tunnell, AuD

Please tell us about your hopes and dreams for the future.

When you look at me and only see my white cochlear implants tucked under my dark brown hair, I am sure the assumption is that I am not a Type A personality, maybe because the average person with a hearing loss doesn't learn to read past a 9-year-old reading level.[1] A type A personality is described as an extrovert, focused on being organized, very concerned with being successful, one to always solve a problem at the drop of a hat and fabulous at time management skills. I am almost all of those things; it just is expressed differently.

I was born with a profound hearing loss, which meant learning how to talk was like running a marathon for me while everyone else was doing a casual stroll with their dog. I did not shy away from doing hours of speech therapy at the young age of twelve months. I had speech therapy till I was five years old.

If you met me now, you would never know I have a hearing loss. My speech is perfect, my ability to use the limited resources I have at my disposal is impressive. I have been in at least ten research studies since the age of three to help those scientists who study hearing loss better understand how it is I do what I do with my cochlear implants in a way that is formidable and impressive, even to those in the research world.

I decided at a young age to never let my hearing loss limit me. I pushed myself even in grade school. I never wanted to do just what was the bare minimum, or the watered-down assignment that I could have done because of my hearing loss. I wanted to do all of the same work and requirements as my peers without a hearing loss. So I did. I was successful at every endeavor, every extra assignment I did. Did I have to try harder? Spend more time on written tasks? Yes. But I did not back down. I accepted the challenge every time.

Temple Grandon talks about how she is different, not less. This resonates with me because I am exactly that. I have to study differently, and it did take a while for me to figure out what that studying style looked like, which is why my freshman and sophomore GPAs could have been better. When you have a hearing loss, it is tricky to figure out how to keep and store information in your brain.

There has been research doing functional MRIs that show how a person with hearing loss reads and studies differently than someone without a hearing loss. So I am exactly what Temple Grandon describes: different, but not less.

I have to work harder. I am still here running my marathon, attending a school that is ranked in the top 50 in the U.S. I could have switched to a different high school and easily had a 4.0 GPA. I chose to stay at Edina, even though I knew the course load would be more challenging. I chose to be part of the Speech and Debate Team where I have lettered every year (even my 8th grade year). I was the Speech Captain this year, and qualified to go to the National Seniors Speech Competition that is being virtually held online this year. I am also one of only three students who gave a commencement speech this year to my entire class and their families. I have taken AP classes, recognizing that this would require a huge amount of extra studying. I am always pushing myself; I am not afraid of a challenge. I realize that my senior year was cut short by COVID-19 and my list of accomplishments was also cut short. I challenge you to see beyond the high school senior I am today and see me for who I want to become.

I plan to go on to become a doctor of audiology. I have worked with audiologists for years and I know I will make a profound impact on the medical community. I am not sure what area of specialty I want to go into, but I believe having a hearing loss and being an audiologist will help me relate to so many of the patients I would like to serve. I am determined to work harder than ever behind the scenes to blaze my own path and make my own mark on this world.

[1] Kyle, Fiona.; Cain, Kate. "A Comparison of Deaf and Hearing Children's Reading Comprehension Profiles." Topics in Language Disorders, vol. 35, no. 2, 2015, pp. 144-156.

How would you convince someone with a hearing impairment to see an audiologist and follow hearing aid recommendations?

It depends on if this person is part of the deaf community or identifies as hard of hearing. If they were open to talking to me about wearing some kind of technology to help them hear. I would explain how important it is to follow the recommendations of your audiologist.

I have been seeing audiologists since I was born. Having access to sound has changed my life. I remember being a young girl and my mom took me to a deaf culture meeting. I must have been about five or six years old. I could not understand how anyone did not want to hear No Doubt and Gwen Stefani (my

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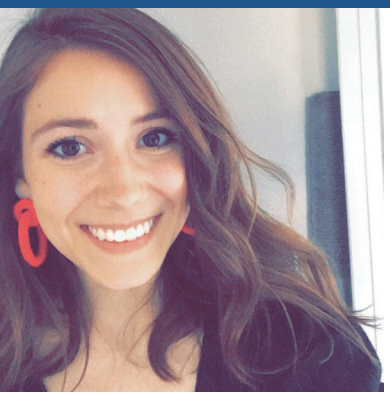

Student Spotlight

Molly Lynett

Third Year Au.D. Student, University of Minnesota

You are the new UMN SAA President, congratulations! This will likely be a very virtual year for SAA activities, do you have any fun or exciting ideas that you and the Board will try to implement?

One of my ideas is to use some of the funds that SAA would typically use for in-person events and food to make care packages for all the AuD students. Since we won't be able to see each other this fall, and with the added stress of COVID-19, I think that would be a nice gesture.

Scholarships, *cont.*

favorite band then). Hearing isn't just about school or a job, it is a way to connect with others. It is a way to feel less isolated.

An audiologist goes to graduate school for three to four years to help you connect and understand speech whether you are using a cochlear implant (like I do) or a hearing aid. It is critical that you use your hearing technology regularly otherwise your brain won't remember how to use it. If you don't like how your hearing aid or cochlear implant sounds, go back. Don't leave your hearing tech sitting in your drawer.

It is important for everyone to stay connected, to communicate, to feel like their voice is being heard. Sometimes getting used to a new hearing aid or a new cochlear implant programming is tricky, but you have to give your brain time to adjust. You have to be patient with yourself and think about what you want as your final outcome. What is your goal? Share this goal with your audiologist, work with that health care provider. Ask a ton of questions, there is no silly question to ask your audiologist, bring someone you love with you. Be careful about finding information on the internet. I remember one time reading that I could fix my hearing loss by getting my back adjusted! This is the stuff you want to ask about.

Having a hearing loss doesn't have to be a big part of your life. It is something I think about, but I don't think about it all the time, because I have hearing technology that works for me. Most people with a hearing loss can also have something that works for them. You have to do the work! But the first step is reaching out to your audiologist.

During this time of COVID-19, it can be a challenge to find ways to reduce the stress we all might be encountering. What types of things do you find important for you to help maintain your own health?

I think self-care is important for everyone, but especially students who are often trying to balance a lot of things. I really like doing outdoor activities to relieve stress. I always feel better after getting outside, even for a short walk. I have also been biking more this summer and have started an outdoor vegetable and herb garden!

What has been one of your favorite classes in graduate school so far?

That is a hard question because I have a few classes that I have really enjoyed so far. I really like the areas of audiology that involve lots of problem solving and piecing together of information. I think my favorite classes have been cochlear implants, electrophysiology, and balance assessment.

You will soon be gaining more experience in external placements, what are some things that you look for in a supervisor? What might be a piece of advice you would give an audiologist that supervises students?

I look for a supervisor that can let me have as much hands-on experience as possible, when appropriate. Another quality I appreciate is honesty and the ability to provide constructive criticism that is helpful, but at the same time is considerate. If I had to give an audiologist some advice about supervising students, I would tell them to set guidelines and expectations right away and to let the student know that they are available for any questions they may have.

Are you reading any good books this summer? Or are you taking the summer off from reading, and if that is the case what are some fun shows that are on your Netflix queue?

I haven't had a ton of free time this summer, but I do have one book on my list. I would like to read Secondhand: Travels in the New Global Garage Sale, a book about waste and what happens to our material goods when we are done using them. I have been able to watch quite a few shows since March and some of my favorites include: True Detective (HBO), Little Fires Everywhere (Hulu), and Outlander (Netflix).

Sponsored Article

Hearing Loss and Cognition:
A Discussion for Audiologists and Hearing Healthcare Professionals

Douglas L. Beck, Au.D.
Vice President of Academic Sciences, Oticon Inc.

The following is an abridged version of "Hearing Loss and Cognition: A Discussion for Audiologists and Hearing Healthcare Professionals." Beck, DL., Bant, S. & Clarke, NA. Originally published in The Journal of Otolaryngology ENT Research, Volume 12, Issue 3. May 2020

Across hearing care professionals (HCPs) and patients, there is substantial interest in the relationship between hearing loss and cognition. Lin et al. (2013) reported 1984 people without cognitive impairment, based on the Modified Mini-Mental State Examination (MMMSE), most of whom were followed for six years. Of those, 1162 individuals had baseline hearing loss (pure-tone average >25 dB). At the end of the study, it was noted that those in the hearing loss group had MMMSE and Digit Symbol Substitution (DSS) test scores which were 41% and 32% worse (respectively) than individuals with normal hearing. The group with hearing loss had a 24% greater risk for incident cognitive impairment and the rates of cognitive decline and the risk for cognitive impairment were linearly associated with the severity of the hearing loss.

Although it is attractive to draw conclusions from the above research, it is important to acknowledge that although group trends and averages may be true for the group, they may not be true for all (or most) of the individuals within the group.

For example, we could say that in general, men are taller than women. That is true for the group. Men have an average height of 69.1 inches, women have an average height of 63.7 inches (source). However, many women are taller than many men and some women are taller than most men. Further, we could state authoritatively the most common brand new car color is white (38%, see S. Finlay, Jan 2020). Yet, if we were to guess the color of anyone's new car to be white, we would be wrong 62% of the time. Thus, extreme caution must be heeded when applying group trends and statistics to individuals.

Further, measurement errors occur with hearing and cognitive screenings. For example, hearing is most often measured based on pure tone thresholds, which do not reflect functional integrity, capacity or the brain's ability to comprehend the information supplied via the auditory system. Ultimately, hearing is simply perceiving sound, while listening is the ability to make sense of, or untangle sound. Listening builds on a foundation of hearing, yet listening involves cognition, attention, intention, vocabulary, processing ability, processing speed, working memory, short term and long-term memory and more. That is, for pure tones, the ability to perceive the stimuli is enough. However, for listening tasks, interactions within and throughout the brain are vast, innumerable, and it is the brain's interpretation of sound (from the ear) from which we derive meaning. Further, as all clinicians are aware, people with similar (or identical) hearing thresholds often have incredibly different abilities to comprehend, understand or untangle sound into meaningful percepts. Of note, although some 38 million people in the USA have hearing loss on an audiogram, an additional 26 million people (Beck and Danhauer, 2019) have hearing difficulty and/or SIN problems, without measurable hearing loss on an audiogram. Although pure tones on an audiogram are the gold standard of hearing tests, they only measure the simplest sensation of audition; pure tone thresholds from 250 Hz to 8000 Hz.

Regarding the measurement of cognition, there are many concerns, here, too. The word "cognition" has variable definitions depending on the context. Some experts use cognition to refer to the contents of thoughts, others refer to the efficiency of thought processes (Baguley et al., 2012) and more. Boogert, Madden and colleagues (2018) stated "…cognitive abilities cannot be directly observed, they must be inferred…" Cognition is typically measured using established diagnostic cognitive and neuropsychological tests to evaluate a specific sub-skill(s). Further, cognitive screening tools (in general) are evaluated based on how well they approximate the above-mentioned diagnostic tests. That is, screening tools generally are assessed based on their sensitivity and specificity related to how well they approximate their diagnostic counterpoint, not specifically how well they measure the specific cognitive

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Cognition, *cont.*

ability. Further, despite the ability to measure "relatively specific" aspects of human cognition (see Rowe & Healy, 2014) we cannot 100% thoroughly or accurately define human cognitive ability. Regardless, whichever cognitive attribute (or sub-skill) we measure at any moment in time, does not (and cannot) represent a person's entire cognitive ability, and - that same measured sub-skill response can change over time. That is, predicting overall cognitive ability based on screening a cognitive sub-skill, is not a proven attribute. That is, cognition is not a monolithic construct of constant content. It changes.

What is the relationship between hearing loss and cognition?

Regarding hearing loss and cognitive decline, multiple studies have reported accelerated cognitive decline with advancing age in older adults, for people with hearing loss, as compared to people without hearing loss. Amieva and Ouvard (2020) reported that despite the scarce number of studies and the absence of random controlled studies "the available data globally support the hypothesis that hearing aids have a positive impact on long-term cognition in older adults suffering from hearing loss." Again, beware of group data. Offering great encouragement, Glick and Sharma (2020) determined multiple deficits were improved after 6 months of daily hearing aid use. Indeed, they reported reversals in cross-modal reorganization, as well as gains in speech perception and cognitive performance. Therefore, it seems reasonably clear that "hearing impairment is not good for the brain" (Stahl, 2017), yet at this moment, we are uncertain as to candidacy regarding who will suffer the most from hearing loss, or who will benefit the most from amplification. Various hypotheses have been proposed to explain the link between hearing loss and cognition decline (Beck, Bant & Clarke, 2020),

Among people classically considered to have normal hearing, as their hearing ability decreases, so too, does cognition, in a clinically meaningful way.

however, at this moment all we have is a correlation, not causation.

What effect does hearing loss have on cognitive performance?

The inability to understand speech in the presence of background noise is the most common complaint among those with hearing loss and listening difficulty. Multiple studies have shown that auditory deprivation can impair cognitive ability. Dryden et al. (2017) published a meta-analysis of 25 studies assessing associations between cognitive performance and speech-in-noise (SIN) perception. They reported overall association between cognitive performance and SIN perception was a moderate positive correlational relationship (r = .31). In some people within "normal hearing categories," as their hearing ability decreases along the continuum from "excellent" hearing to "normal" hearing, specific measurable aspects of cognition decrease (Golub, Brickman et al., 2019)33. That is, among people classically considered to have normal hearing, as their hearing ability decreases, so too, does cognition, in a clinically meaningful way.

Is there a link between hearing loss, cognitive decline, and dementia?

Deal, Betz, Yaffe et al. (2017)36 reported a 10 dB increase in hearing thresholds may represent a 14% increased risk for dementia and, hearing loss is associated with an increased risk of developing dementia in older adults. Livingston, Sommerland, Ortega et al. (2017) pooled the results from three relevant studies and reported hearing loss is a significant risk factor for dementia. They reported approximately two-thirds of dementia risk is genetic, yet one-third of dementia risk is attributable to nine risk factors; education to a maximum of age 11–12 years, midlife hypertension, midlife obesity, hearing loss, late life depression, diabetes, physical inactivity, smoking, and social isolation. Among the 9, hearing loss was the most significant factor, with a Population Attributable Factor (PAF) of 9%. Of significant importance, they stated that the mechanism underlying cognitive decline associated with peripheral hearing loss was not yet clear; nor was it established from the evidence whether hearing aids (or other amplification) can prevent or delay the onset of dementia.

Jafari, Kolb and Mohajerani (2019)39 note a large body of evidence demonstrates age-related hearing loss is detrimental to physical and mental health, cognition, independence, social interaction, and quality of life in the elderly and hearing loss can precipitate dementia and Alzheimer's disease. They noted hearing loss is a source of stress and mental fatigue and can lead to social isolation and subsequent depression that may predispose individuals to cognitive decline.

Can we intervene on the relationship between hearing loss and cognition?

Perhaps the most important question concerns intervention, and hearing aids are the most familiar intervention. Jafari, Kolb and Mohajerani (2019)39 report advantages of hearing amplification devices in at least partially restoring hearing ability and improving overall cognitive performance in older adults. Ray, Popli and Fell (2018)5 assessed the link between memory as reflected in word recall, and executive function as

cont.

MAA Responds with Diversity and Inclusion Task Force

In the aftermath of George Floyd's murder, the MAA Board of Directors released a statement about the lack of diversity in our organization and expressed a commitment to making the organization more inclusive. As part of this commitment, a Diversity and Inclusion Task Force was created, charged with the mission of reviewing MAA's current practices with a critical lens, determining how our organization's practices and policies can be improved to be actively anti-racist and to promote inclusiveness, and making recommendations to the board of directors with how these changes could be made.

We extended an invitation to MAA members to be a part of this focus, and the initial meeting of the MAA Diversity and Inclusion Task Force was held virtually on July 8. Karen Beverly-Ducker, Audiologist and Director of Multicultural Practices at the American Speech-Language-Hearing Association (ASHA), participated in the meeting and encouraged our organization to think beyond making superficial changes to appear to be diverse and instead to consider how our organization can work to make long-term changes. She shared the importance of reaching out beyond one's own professional circle when finding volunteers or speakers, yet this recommendation was underscored with her acknowledgment that the current demographics of audiology do not reflect the diversity of the general population; there are fewer audiologists from minority cultures than in the general population, yet the opportunity exists to plant the seeds for the next generation of audiologists to be more reflective of the general population.

The Task Force made initial recommendations to the board of directors to review the application process and selection criteria for the Gloria Gross Scholarship, share easy-to-implement recommendations for MAA members to consider which would promote inclusiveness in their everyday practices, and create a resources section on our website which members, non-members, and the public can access. The Task Force is also interested in exploring how to increase awareness of audiology as a profession before students go to college.

The Task Force will meet again in two months to follow-up on action items from the initial meeting and provide additional recommendations to the Board. If you are interested in joining this initiative, please contact Kristi Gravel at kgravel1@fairview.org.

Task Force members: Kristi Gravel (President), Ashley Hughes (President-Elect), Jumana Harianawala (Treasurer), Kate Teece (Fellow), Katie Awoyinka (Fellow), and Maureen Canon (Fellow)

Cognition, *cont.*

reflected via verbal fluency, with hearing acuity. They concluded untreated hearing loss is linked to a decline in cognitive function, not just to hearing loss itself, and the odds of being socially isolated for those with mild hearing loss, compared to those with no hearing loss. Jilla et al. (2019)45 reported despite the fact that only 1 in 5 people with hearing loss pursues amplification, for those who do, self-reported daily use of hearing aids was associated with increased satisfaction and an increased quality of life.

Discussion

Regarding our understanding of causes, correlations, candidacy and predictable outcomes for individuals with hearing loss regarding their cognitive outcomes with and without amplification, we are only at the beginning. Much more information is required to make succinct and accurate statements. Nonetheless, the emerging evidence does show that for some who acquire amplification to address their age-related hearing loss, that action may impact their age-associated cognitive trajectory and may reduce their incidence of dementia. Maybe. Of note, we can say with reasonable certainty that the risk of leaving hearing loss unmanaged could be costly in many areas: hearing outcomes, cognitive decline, and ultimately, patient quality of life.

References and the complete unabridged version of this article can be found online.

gsi Grason-Stadler

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HRTFs: Why They're Not Just Interesting to Hearing Scientists

John Ellison, MS; Eugene Brandewie, PhD; Dorea Ruggles, PhD; Jennifer Groth, MA
GN Hearing

Just like fingerprints, everyone's ears are unique to them. No two ears are alike - not even for identical twins - and ear morphology changes very little over time. In fact, automatic ear recognition methods are finding their way into the toolbox of biometrics that can be used to identify individuals and to confirm their unique identities. It is therefore not surprising that the unique anatomical shape of our ears translates to a unique acoustical signature as sound enters our ears.

When sound enters a person's ear, it is shaped by the body, head and outer ears. The technical term for this unique shaping is the head-related transfer function (HRTF). No two people are exactly alike, and each person has their own HRTF. Therefore, every person hears in a way that is unique to them. In other words, everyone has their own acoustic cues. These cues help us with localizing sound sources, segregating auditory scenes, determining what sounds good and natural, and perceiving auditory distance. In fact, hearing via one's own HRTFs is the only way to truly experience immersive, natural sound.

Outside of psychoacoustic research labs, you are most likely to encounter the term "HRTF" in the intersection of 3D audio reproduction, virtual reality, and gaming. The designers of these systems have the goal of giving the consumer an experience that feels genuine and recognizes that a person's individual hearing plays a major role. They are implementing complex modeling of HRTFs in their audio reproduction so that consumers listening to products through headphones will feel like they aren't wearing headphones at all.

Without advanced audio techniques that add personalized cues to sound heard through headphones, sound can be perceived as if it is inside one's head. Unfortunately, this is a similar perceptual downside commonly observed with hearing aids. They can distort personal hearing cues and therefore reduce the associated benefits. Why is this? The majority of hearing aids fit today are the receiver-in-the-ear style (RIE). First, sound is picked up by a microphone positioned on top of the ear, which is not the natural location for sound pick-up. When sound from the hearing aid enters the ear, it outputs via a receiver to a blocked or partially blocked ear canal. This configuration bypasses any cues that would be provided by the pinna. Further, sound that could enter the ear canal can be reduced by the earpiece positioned at the ear canal entrance. Loss of personal cues can cause difficulty with localization, sound quality, distance perception, externalization of environmental sounds, speech intelligibility in noise, spatial release from masking, cognitive load, listening effort, and wind noise. The net result of these difficulties is a perceptual distortion of the auditory scene. Similar to listening to sound via headphones, the environment can be internalized, causing wearers to lose the sense of the outside world as being outside.

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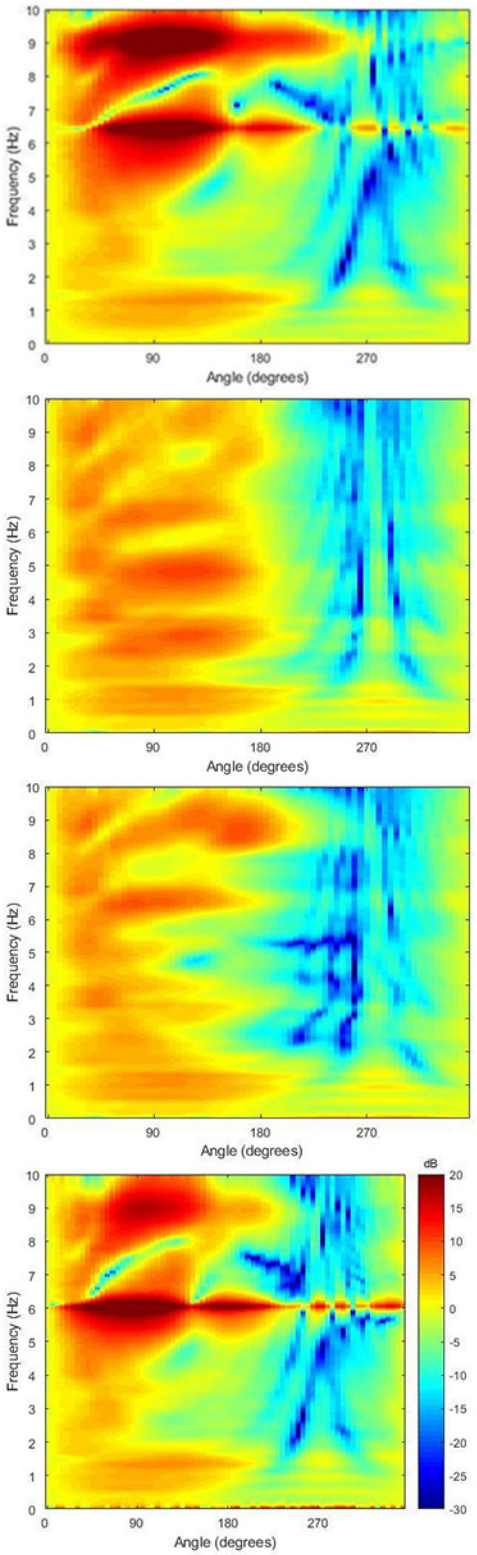


Figure 1. Horizontal HRTF color plots (from top): for the open ear; omnidirectional RIE microphone; pinna compensation; and omnidirectional microphone in the ear canal. The filtering pattern of the open ear is preserved almost exactly with the in-ear microphone location.

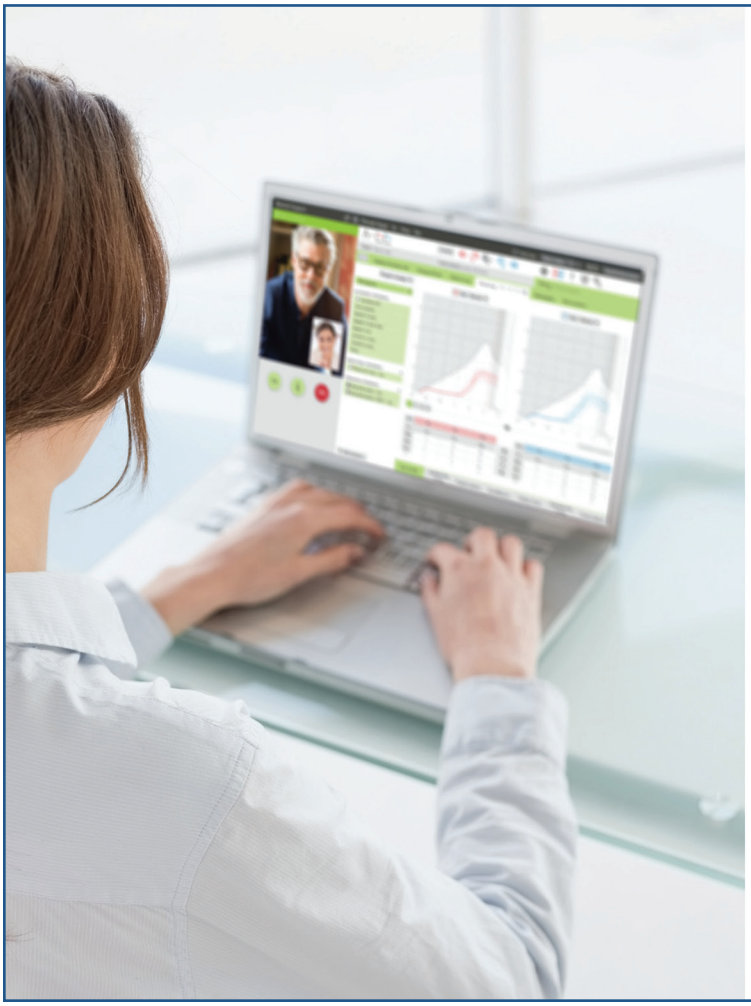
HRTFs, *cont.*

The open ear, with a normal auditory system, functions as the gold standard for what we as hearing aid designers want to achieve. Normally, people construct their own auditory scene to optimize their functioning within the surrounding environment. We can imagine the world around our head in two planes: one horizontal and one vertical. The horizontal plane encircles the head with right and left ears positioned at 90 and 270 degrees, respectively. The vertical plane circles the head such that 90 degrees is directly above the head and 270 degrees is directly below. Both the horizontal and vertical planes can each be viewed in a 2-dimensional HRTF color plot as a function of frequency and azimuth.

Figure 1 shows an example of the horizontal plane for the right ear. As such, this provides a way that we can compare hearing aid solutions that attempt to preserve the cues that we use to make sense of our world. With a traditional omnidirectional microphone placed behind the ear, a person's auditory scene does not match the external acoustic scene. As a result, the outside world sounds like it is collapsed inside the head. When comparing the horizontal response of the omnidirectional microphone, against the horizontal response of the open ear, there are few similarities. The huge discrepancy indicates that the RIE solution does not do well in achieving the goal of restoring the open ear response.

Many hearing aid brands offer processing using the two microphones on the device to restore pinna cues of an average ear. There are various commercial names for this type of processing but here we refer to it as "pinna compensation". While pinna compensation does approximate some pinna cues in the horizontal plane as illustrated in Figure 1, it does not restore the cues necessary to localize in the vertical plane. A solution that does preserve the individual HRTF in both planes is locating the microphone in the ear canal. This allows for normalization and externalization of an individual's personal auditory environment. The experience can be described as transparent due to the preserved individual cues.

cont.



Phonak eAudiology

Includes a suite of eSolutions, designed to support a patient's digital hearing care journey.

- **eScreener:** Screens patient's hearing online for an initial assessment and inform if a consult with a hearing care professional would be beneficial.
- **Phonak Remote Support:** Offers connectivity (audio and video) to patients in real-time. Provides ability to adjust nearly all settings, including AudiogramDirect.
- **AudiogramDirect:** Verifies and refines audiometric results during in-situ hearing assessment using Phonak hearing aids.
- **myPhonak app:** Allows quick adjustments to volume and custom program settings for hearing aid wearers.

Visit www.phonakpro-us.com for more information.

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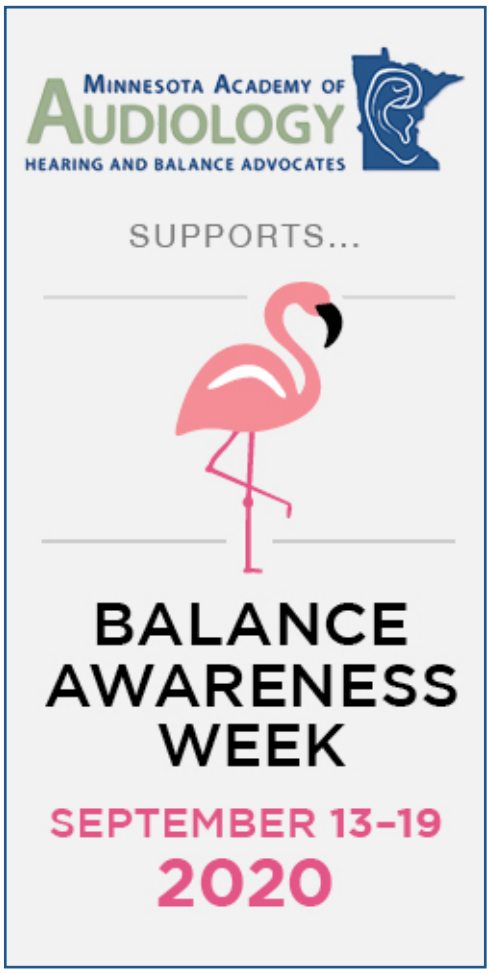
Looking Forward to a Virtual Upper Midwest Audiology Conference 2021

After several planning meetings, multiple emails, and a membership survey, the Continuing Education (CE) Committee and the MAA Board of Directors have decided to host UMAC 2021 as a virtual conference. This decision was made to protect MAA from significant financial loss. Although this will be a change, we feel moving forward with an in-person conference exposes our organization and membership to excessive risk.

We couldn't bring ourselves to cancel the conference, so we surveyed membership to gauge interest in a virtual conference. Thanks to all who provided input! Eighty-two members completed the survey, 52% of whom indicated they would pay to attend UMAC 2021 virtually. The CE Committee understands UMAC is so much more than continuing education; there's networking with colleagues, sponsors, and exhibitors, great food, silent auction fun for a good cause, and winding down in the hotel lobby after a great day with fellow conference goers. The CE Committee will do our best to make this virtual conference interactive, engaging, and informative.

We already have one super fun, delicious, and interactive event planned. Angela Loavenbruck, AAA Past-President 2002-2003, founder of Hudson Audiology in Hudson, NY, and lifelong audiology advocate will be sharing her culinary passion with us in the form of a Zoom Cooking Class. Check out her YouTube channel! Instead of moving to the lobby after the conclusion of the day's presentations, we'll transition into some audiology shop talk and prepare a delicious meal "together."

Can't wait to see you all in February, virtually!!



HRTFs, *cont.*

New research – how hearing aid microphone placement can preserve HRTF-related advantages

An ongoing experiment at the University of Minnesota is studying how microphone placement and the restoration of pinna cues may contribute to speech understanding in complex acoustic scenes. The external pinna provides a natural acoustic shadow that creates a change in the acoustic spectrum for front and rear sound sources. When there are multiple, competing voices in an acoustic scene, these cues can help listeners disentangle front and back sources in the process of auditory stream segregation. However, these cues are typically not available to users of today's most typical hearing aids, where the microphones are located above the listener's pinna. Placing a hearing aid microphone at the entrance to the ear canal can restore these natural listening cues. Pilot data from this ongoing study suggests better speech intelligibility in complex scenes when the hearing aid microphone is at the entrance to the ear canal compared to a traditional behind-the-ear location.

What is in the future for hearing aids?

In-the-ear hearing aids were originally developed in large part to satisfy demand for smaller, more cosmetic hearing aids. Users of these styles also benefitted from the fact that the microphone was located inside the pinna. The popular RIE style proved to be perhaps even more cosmetically beneficial compared to many custom in-the-ear styles, and offered other advantages that have contributed to its success; however, at the expense of the benefits of an in-the-ear microphone placement. Hearing aid manufacturers recognize that the personal hearing cues afforded by the HRTF are important, and continue to explore and implement solutions that can restore or preserve this information. Both signal processing and acoustic solutions in this area are likely to be on the horizon.

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*Starkey Competitive Benchmarking Study 2019

One Perspective on Giving Back

Judy Huch, Au.D.

Audiology is a giving profession; we give opportunities for better hearing, better communication, and better balance. For most of my career, I have faced the challenge of serving those in my local community that cannot afford certain healthcare services, giving back in other countries, and all the while maintaining a private practice.

I have been in this profession since my first license in 1991, went to work for a leading audiologist in our field in 1995, and purchased my first office in 1998. I felt I was the tiniest fish in the largest ocean until I connected with Entheos Audiology Cooperative in the fall of 2015. Their mission statement reads, "Entheos Audiology Cooperative is a collective of hearing professionals committed to reconnecting with the larger purpose of their private practice. We think hearing health care is the perfect vehicle to change lives, local communities, and the world. Through values like servant leadership, positive objectivity, and community, we believe you can reach your full potential in your practice and life." This resonated with me on a fundamental level. Not only were there international hearing humanitarian trips set up in which all I had to do was say yes and go, I now had access to owners of other private practices around the U.S. that already had set up 501(c)(3) nonprofits to help in their own communities.

What a gift to see firsthand how others figured out how to do what I wanted and were willing to share their journey! I first started as a satellite under the umbrella of HearCare Connection (which is now Hearing the Call) out of Ft Wayne, IN. Not knowing how boards worked and the value of a collective mind with steps of creating growth, I was impatient. I had several conversations with Nora Stewart, founder of Entheos and Hearing the Call, and she encouraged me to start my own 501(c)(3). She was open to sharing the philosophy of the organization, which I loved. She gave me step-by-step help and in August of 2016 Grace Hearing Center was born.

One daunting obstacle for me was the thought of filling out the 1023 form for the IRS which is 26 pages. However, my research showed I could apply for nonprofit status with the 1023EZ form which is basically less than 15 questions. I answered the way the IRS wanted and within two weeks of applying we were ready to roll. What I guessed to be 12 months' worth of work happened in less than three weeks.

What makes nonprofits unique through the Hearing the Call model is the "circle of giving" concept. Grace Hearing Center operates on a reduced fee – sliding scale basis – to make services affordable. Our community makes our programs sustainable through grants, donations, corporate sponsorships, and volunteers. In return, our unique Circle of Giving model gives our patients the opportunity to give back to the community through volunteer hours. For every hearing aid our patients receive through Grace Hearing Center, they return a designated amount of volunteer hours to their community. This is our way of saying "thank you" to the supporters and donors who make it possible for our patients to receive the "gift of hearing."

For every hearing aid our patients receive through Grace Hearing Center, they return a designated amount of volunteer hours to their community.

My sincere thanks go out to Entheos and Hearing the Call. They have been instrumental in moving the humanitarian trips of Entheos forward and a rock of encouragement when I need it. The Entheos team will be homebound for 2020 and possibly 2021 but we are getting a better foundation in how to apply for grants. Hearing the Call, at large, helps each of us learn how to apply and report for grants, which is a huge task. The nonprofit Grace Hearing Center closed March-May 2020 to figure out best practices and procedures, but we are back to a full one day a week schedule and fitting 10 or more people a month.

I have involved my sons locally and internationally so that they may gain a unique perspective of the world from a young age. Seeing different and beautiful cultures on the other side of the world has touched them in ways I never thought possible. I know they will do even bigger things in their own personal giving back journeys. Even though my sons primarily view me as "Mom," they now see my audiology work in Tucson as a dynamic career choice and not an ordinary job.

Judy Huch, AuD is an audiologist with 29 years of experience who is a private practice owner in Tucson, AZ, Oro Valley Audiology and Nonprofit Grace Hearing Center. She has been published in multiple journals, text books and blogs within the hearing industry since 2000.

Announcements

Meet Jumana Harianawala, Au.D.

The Minnesota Academy of Audiology is excited to welcome the newest member of the Board of Directors, Jumana Harianawala, AuD. Dr. Harianawala was unanimously appointed as Treasurer during the May Board meeting, and her term will go through the end of 2022.

Dr. Harianawala has been working as a research audiologist with Starkey Hearing Technologies for almost ten years. She is an experienced researcher and is passionate about making scientific knowledge clinically relevant through data visualization and dissemination of consolidated research findings. Prior to joining Starkey, she worked clinically for an ENT practice in New York. She earned her Clinical Doctorate of Audiology from Indiana University in 2009.

Please join us in welcoming Dr. Jumana Harianawala!

Coding & Reimbursement Committee

The Coding and Reimbursement Committee, comprised of Melisa Oblander, Jason Leyendecker, Evan Maraghy, and Carrie Meyer, organized and met in March at the Elmer Anderson Social Services Building, St. Paul, MN. Participants included leadership from Minnesota Healthcare Programs (MHCP), Minnesota Department of Health (MDH), Department of Human Services (DHS), and five hearing aid manufacturer representatives.

A summary of concerns was presented:

1. Delays in payment for hearing aids
2. Nonpayment or claim denials for hearing aids
3. Audiologists choosing not to enroll as MHCP providers
4. Patient access issues
5. Whether or not there is a pathway for manufacturers to directly bill MHCP for hearing aids

Discussion revealed that most concerns seemed to originate from Prepaid Medical Assistance Program (PMAP). We did not have leadership from the eight managed care plans at the meeting.

One outcome of the meeting was to conclude that direct from manufacturer billing was not feasible: The MHCP program covers five states. Changing the model in MN only would result in loss of volume contracts and significant financial impact. Enrollment issues would require statutory change because hearing aid manufacturers cannot enroll with Medicare (MN Statute 256B.0624, Subdivision 31, Article B).

The **actionable item** that our committee came away with was to **gather more specific examples from audiologists**. Per Fee for Service MHCP leadership, billing procedures for PMAP plans should be the same as the Fee For Service rules. These rules should be accessible, either written or online. Once examples are gathered and analyzed, then MHCP/DHS leaders can help us set up a meeting with the Managed Care Plan Team.

To MAA members who have knowledge and/or access to their PMAP hearing aid claims, **we are looking for specific examples to find trends and themes.** Please do not share or send us PHI. Contact Melisa Oblander mobland1@fairview.org or Jason Leyendecker dr.leyendecker@audiologyconcepts.com to discuss. We would like to collect this information by November 1, 2020.

WALK RUN ROLL

Oct. 2020

Say What?

Virtual 5k for Audiology Awareness

Minnesota Academy of Audiology

Move your feet to your own beat!

Join the Minnesota Academy of Audiology for our first virtual 5K walk, run, or roll. All event proceeds will support the Gloria Gross Scholarship, awarded annually to high school seniors with hearing loss.

The details:

- **Register by September 21st** and you'll receive the official event shirt, a numbered runner's bib, and gifts from our sponsors. Registrations will be accepted after that date, but you are not guaranteed a shirt.
- **Between October 18-25th, walk, run or roll 5K anytime** and in any way that is convenient for you.
- **Share through social media** on the Facebook event page or our MAA Facebook group page. Bonus points if you use #MAAwalkrunroll5k! Post pictures of your participation. You can also share audiology resources that could benefit patients or professionals.

Register today at

www.minnesotaaudiology.org/event-3952197

Cost: $40 adults / $35 children 12 and under

The Minnesota Academy of Audiology thanks our sponsors.

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