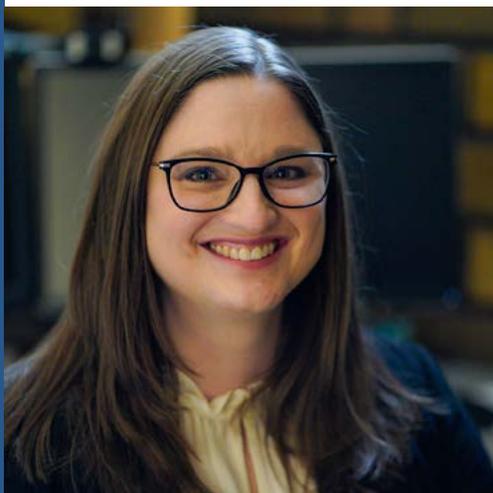




# MINNESOTA ACADEMY OF AUDIOLOGY Newsletter



## Featured Article

# New Methods to Assess Hearing Function in Young Children: The Parallel ABR

**Melissa Polonenko, B.M.Sc., M.Cl.Sc., Ph.D., Au.D.(C)**  
**Assistant Professor, Department of Speech-Language-Hearing Sciences, University of Minnesota**

You're a pediatric audiologist (or imagine you are!). Your first appointment of the day is to do an auditory brainstem response (ABR) assessment on an infant who did not pass their hearing screening. The caregivers did everything they could to prepare for the appointment, but as luck has it (or lack thereof), the infant only slept for 20 minutes – just enough time for you to determine that otoacoustic emissions and acoustic reflexes are absent, and the morphology of the click ABR suggests that a hearing loss is present on both sides. Maybe you obtained a frequency-specific threshold as well. Unfortunately, the family must return to complete the testing. Your second appointment is a toddler who can do some visual reinforcement audiometry (VRA), but again, they only participated for long enough to obtain hearing thresholds at one or two frequencies in each ear. After that, they were only consoled by watching videos on a tablet, but were too enthralled to respond to the VRA reinforcers. While these scenarios don't happen all the time, they are realistic and occur with enough frequency in a pediatric practice.

These types of assessments are important for early identification of hearing loss and timely intervention, which are both critical to promoting typical auditory development and spoken language acquisition. The developing auditory system undergoes remarkable changes that are driven by experience with sound<sup>1,2</sup> and these changes begin even in the womb<sup>3-6</sup>. Hearing loss distorts the input and can alter the developmental trajectory<sup>7,8</sup> and psycho-social-educational outcomes<sup>9-11</sup> when consistent access to a good representation of speech to both ears is delayed. The best long-term language and education outcomes are achieved when we can provide that good access to sound within 12-24 months<sup>12-14</sup>. This is why we have an Early Hearing Detection and Intervention (EHDI) program that aims to screen by 1 month, diagnose by 3 months and intervene by 6 months<sup>15,16</sup>.

However, just like our two example appointments, sometimes it takes repeat appointments to gather all the necessary information because the infant does not sleep, or the child cannot sit still or remain engaged for long enough (and this is at no fault of the audiologist, who is a miracle worker at gaining as much information

*cont.*

## In This Issue

Member Spotlight .....	5
Pathologization of Hearing Loss and Intersexuality: Similarities, Differences, and Ethics .....	6
New Members .....	9
Message From Your President .....	10
Student Spotlight .....	12
Gloria Gross Scholarship Winners .....	13
Closing the Audiology Gap with Automation Video Series .....	15
Telecoils and Hearing Loops Are Our Past, Present, and Future .....	16
Announcements .....	18

## Parallel ABR, cont.

as possible from these little ones in whatever time they are given!). Multiple appointments can delay diagnosis and treatment, carry additional costs, and add stress to the family as they await information and decisions. Our current tests are good, accurate tests, but they can take a long time considering our limited or unknown sleeping/engagement assessment window with each unique infant or child. My research involves developing new tests to help mitigate the challenges of time and engagement constraints, and to also gather more information in a given assessment. These include developing methods to speedup ABR testing, and using continuous, natural speech (audiobooks!) to evoke ABRs. This article will discuss one method, the parallel ABR (pABR), for addressing the time constraint of diagnostic ABRs.

### Using the Parallel ABR to Speed Up Threshold Testing

Currently, the gold standard for estimating hearing thresholds in infants, and other individuals who do not provide reliable behavioral responses, involves measuring ABRs to frequency-specific tone pip (also called toneburst) stimuli presented over a range of intensities to each ear separately<sup>17-19</sup>. To address the time constraints of ABR testing, I worked with Ross Maddox at the University of Rochester to develop and validate the parallel ABR (pABR). The set-up is similar to the clinical ABR but right now we need to use research equipment to present the sound and record the ABR.

We validated that the pABR gives high-quality waveforms with typical ABR morphology (see Figure 1) and that the component wave V behaves similarly to the traditional serial ABR<sup>20,21</sup>. Wave V latency decreases and amplitude increases with increasing stimulus intensity<sup>20</sup> or decreasing stimulation rate<sup>21</sup>. Furthermore, the responses to

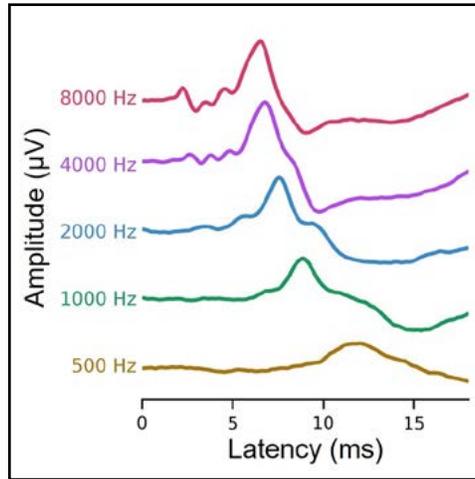


Figure 1. Waveforms derived using the parallel ABR method. Responses from only 1 ear are shown for a stimulus level of ~60 dB nHL.

500, 1000, 2000, 4000, and 8000 Hz tone pips are obtained in both ears within a fraction of time compared to serial methods. The greatest speedup times are achieved for the lower intensities – which is where the threshold would be and where we would be spending most of our recording time. At the lower intensity, the median speedup ratio was 3 times faster for the pABR than the traditional serial ABR method (1.12-3.92 interquartile range)<sup>20</sup>. Furthermore, we determined that – like the serial ABR – a 20 or 40 Hz stimulation rate provides the optimal single rate for testing, although

there may be an advantage to using many different rates within an exam as well. Lastly, we have measured the correction factors for converting from dB peSPL to 0 dB nHL for using the pABR<sup>21</sup>, and these conversions are quite similar for different stimulation rates, making the pABR easy to implement.

### How the pABR Works

So how does the pABR work? There are two main time-saving strategies used: 1) Simultaneous presentation of stimulus sequences at 5 frequencies (500, 1000, 2000, 4000, 8000 Hz) to both ears, and 2) Randomized stimulus sequences.

Simultaneous presentation has been successful for speeding up testing with the multiple auditory steady-state response (ASSR)<sup>22-24</sup>. To “pull out” the responses to the different frequencies, the ASSR “tags” the pure tones with different modulation rates and the response is measured at those modulation rates. In contrast, to derive the responses to different frequencies in the pABR, we make use of cross-correlation analysis techniques combined with randomization. Each of the tone pip sequences are 1-second long – over this timeframe a random sequence has independent timing from

cont.

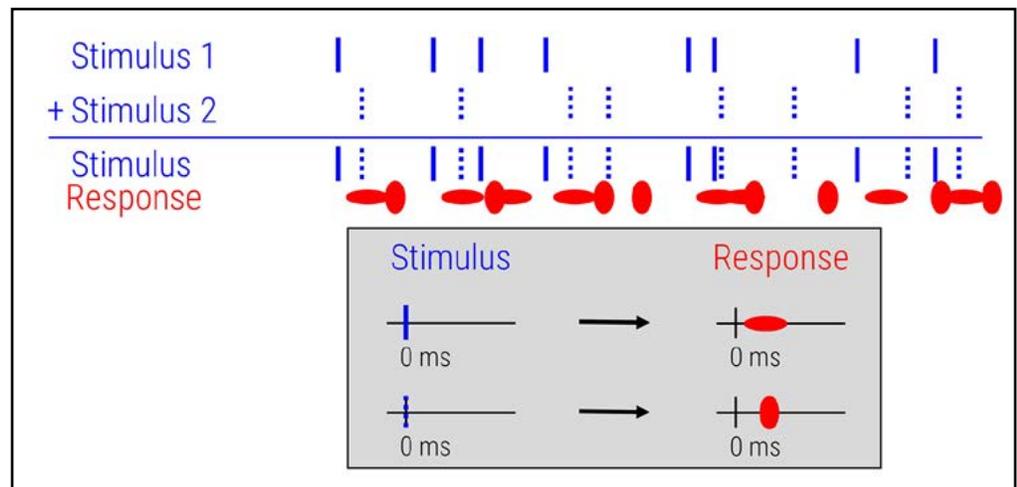


Figure 2. Demonstration of randomized timing.

## Parallel ABR, cont.

the other random sequences for the other tone pip frequencies. Therefore, over the 1-second randomized sequences, we can cross-correlate the same raw EEG that we recorded with each tone pip sequence to “pull out” their ABRs. How this occurs is demonstrated in Figure 2. There is a sequence for the timing of each presentation of stimulus 1 (solid line, for example 1000 Hz to the left ear) and stimulus 2 (dashed line, for example 1000 Hz to the right ear). Each time we present stimulus 1, we evoke a horizontal ellipse response, and each time we present stimulus 2, we evoke a vertical ellipse response. Those stimuli and responses overlap, but because the timing of those stimuli is random, we know that if we just look at the solid lines we get horizontal ellipses and vice versa for dashed lines and vertical ellipses. For the pABR this would be the timing of each tone pip sequence and their respective ABRs. That is how we derived the responses shown in Figure 1. Therefore, the randomization also contributes to the ability for the simultaneous presentation of tone pips and ability to pull out the ABRs to each frequency and each ear.

While simultaneous presentation allows multiple recordings at once, the randomization affords additional time-saving benefits. Instead of the periodic stimuli with the exact same inter-stimulus interval for each trial, we use random timing between each stimulus with an average inter-stimulus interval, or rate. This randomization is powerful because it allows unrestricted analysis windows<sup>25-27</sup>. We can extend the pre-stimulus window to obtain a better estimate of the noise, and we can extend the post-stimulus window to better view the trough following wave V of the lower frequency responses or to view other components of the response, such as the middle latency response. These capabilities provide better estimates of

---

**Each of the tone pips can act as masking noise for all the others (acting like a masked ABR), potentially mitigating the spread of activation at higher intensities. This in turn may potentially improve place specificity and threshold accuracy for severe/profound hearing losses that require high-intensity stimuli.**

---

the response signal-to-noise ratio (which may allow for the response to reach the stopping criterion sooner), and the additional waves can help the audiologist determine whether a response is present or absent when testing at a level close to threshold.

### **Other Potential Benefits to the pABR**

Not only does the pABR facilitate faster recording times, but the method gives additional advantages for clinical applications. The ability to view more of the waveform is helpful, but also the ability to see all 10 waveforms (5 frequencies in each ear) at the same time – following the latency of wave V from high to low frequency can help distinguish whether a low frequency response is present, particularly because the low frequency responses are broad compared to the higher frequency responses (see Figure 1). Thus, seeing multiple frequencies and the later latencies of the responses may help with threshold determination. The other potential benefit to simultaneous presentation is that each of the tone pips can act as masking noise for all the others (acting like a masked ABR), potentially mitigating the spread of activation at higher intensities. This in turn may potentially improve place specificity and threshold accuracy for severe/profound hearing losses that require high-intensity stimuli.

### **Ongoing and Future Work With the pABR**

What's next? Dr. Maddox is also currently performing computer modeling and measured ABR studies to investigate the place-specificity of the pABR. COVID-19 slowed some progress on our study comparing the pABR thresholds to behavioral pure-tone thresholds in adults with hearing loss, but the study is underway. In this ongoing study, we will determine the relationship between pABR thresholds and behavioral thresholds in order to calculate correction factors or regression curves to estimate hearing thresholds<sup>28</sup>. Furthermore, we will assess the actual speedup times for the pABR when implemented in a clinical-like setting. Next, we plan to validate the method for use in infants in a large multi-site study.

The pABR is an exciting new tool that may speed up diagnostic frequency-specific ABR testing. More work needs to be done to make the test ready for use in infants, but the necessary studies are underway!

A PDF containing references for this article can be [found here](#).

*Dr. Melissa Polonenko is an assistant professor in the Department of Speech-Language-Hearing Sciences at the University of Minnesota. She worked as an audiologist before pursuing her doctorate from the University of Toronto at SickKids Hospital, where she investigated outcomes in children with asymmetric hearing loss and single-sided deafness who received a cochlear implant. She developed new objective methods to assess hearing during her postdoctoral training at the University of Rochester. Her current research focuses on auditory development in children with hearing loss who use hearing aids and cochlear implants, auditory-visual integration following hearing or vision loss, and new electrophysiological paradigms to assess hearing function.*



DR. JAMES W. HALL III

DR. ROBERT MARGOLIS

## CLOSING THE AUDIOLOGY GAP WITH AUTOMATION

A new four-part video series with Dr. James W. Hall III and Dr. Robert Margolis about the patient-provider gap in audiology and the need for automated audiometry.



**REGISTER TODAY:** [Grason-Stadler.com/ClosingTheGap](https://www.Grason-Stadler.com/ClosingTheGap)



Official MAA Sponsor

# evolv<sup>AI</sup>

## A new era is here.

Contact your local Sales Representative to learn more.



[StarkeyPro.com/Evolv-AI](https://www.StarkeyPro.com/Evolv-AI)

The Starkey logo, Starkey, Evolv and Evolv logo are trademarks of Starkey Laboratories, Inc. ©2022 Starkey Laboratories, Inc. All Rights Reserved. 8/22 TJAD3230-00-EE-ST



## Member Spotlight

# Melodie Maerz, Au.D.

Associated Hearing Care, St. Paul

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

I followed my daughter into the field of audiology. She discovered audiology at a summer camp in junior high school. At the time I was working in industrial packaging but had a long-term desire to pursue a graduate degree in a medical field. As I watched her career blossom, I became interested in the idea of owning my own clinic and helping people with hearing healthcare. I sold my house and everything in it to go to graduate school and earn my doctorate degree in audiology. A most rewarding life change.

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

The most rewarding part of working in a clinical setting is the diversity of care that I can offer to patients and the amazing collaboration with other professionals. I enjoy learning, sometimes it's how to better interact with a patient demographic group and other times it's remembering to practice more listening skills. I learned so much in graduate school at Missouri State University and enjoy reading about future trends. I was just appointed to serve on the AAA Learning Module Subcommittee and Research, Clinical,

and Teaching Posters Subcommittee for a term of August 1, 2002 to April 30, 2023.

### Why do you feel being a member of MAA is important to your career?

Being a member of MAA allows me to easily ask questions of colleagues and to discover resources that I might not otherwise stumble upon. I find it quite gratifying to work alongside many other MAA members who share my passions and understand my occasional frustrations.

### What made you decide to join an MAA committee?

My audiologist daughter is a Past President of MAA. While she was serving MAA, I was working in a national position in another city, but I always followed the work done by MAA members to better the field of audiology within Minnesota and how that work often linked to larger ideas and changes. Like my daughter, I've always known the power of one. Joining a committee helps me learn more about the focus of MAA and help with the future.

### What do you do for fun outside of work?

Outside of work you will find me traveling. Just last weekend I was working in western Minnesota and realized I had not been to North Dakota. I took the time over that weekend to visit Fargo, see the city and enjoy a baseball game. In September I'm off with my oldest granddaughter to check out Idaho. She also wants to go to Greece so perhaps Europe is in my future.



Oticon has expanded our Portfolio of life-changing hearing solutions. Building upon our **BrainHearing™** philosophy, all of our solutions are designed to provide access to the full sound scene which allows the brain to work in a more natural way. **We offer a complete range of products to support a variety of hearing needs.**

Oticon solutions provide different levels of support to meet the needs of a broad range of people with mild-to-profound hearing loss, including those with single-sided deafness.

**Oticon helps patients get more out of life**  
Call us 800.526.3921 or visit [oticon.com](http://oticon.com)

# Pathologization of Hearing Loss and Intersexuality: Similarities, Differences, and Ethics



**Shade Avery Kirjava, Au.D. (they/them)**

**Clinical audiologist, and Ph.D. student in public health**

## Introduction

We as audiologists and hearing healthcare professionals uphold our understanding of what 'health' is for our patients when we provide services like hearing aid fittings for them, but not everyone agrees that common healthcare services truly make them healthier. The World Health Organization (WHO) has a widely accepted consensus statement of what health is, and this statement is often used to guide how individuals and organizations provide healthcare services (World Health Organization, 1986). Ethical challenges are encountered when patients, their families, and healthcare providers have different definitions of what health is for them.

Medicalization and pathologization happen when an individual's understanding of health says that their differences are typical variations in human anatomy and physiology that should not be changed, but wider society's understanding of health defines their variations as problems. Healthcare providers, lawmakers, and other stakeholders may say that the individual's differences are a pathology that should be medically managed. These stakeholders may try to make

those individuals conform to currently accepted definitions of health (Conrad, 2005; Davis, 2015). Medicalization affects many groups, such as people with significant hearing loss and affiliation with the Deaf community (Bosteels et al., 2012; Hamill & Stein, 2011) and with intersex people who cannot be unambiguously categorized as biologically male or female at birth (Husakouskaya, 2013; Sperling, 2021). Though people who have significant congenital hearing loss and people who are intersex may at first glance appear to be very different, people in these two groups experience many of the same medicalizing experiences throughout their lives.

## Deafness and Intersexuality

Capital-D or cultural Deafness typically includes people who culturally identify with the Deaf community, have significant prelingual hearing loss, and who primarily use sign to communicate (Hamill & Stein, 2011; Stander & McIlroy, 2017). A shared language and cultural identity grew out of the difficulty that Deaf people have communicating with hearing people in a hearing society. The Deaf community isn't a monolith - it has a diverse culture with subgroups based on race, ethnicity, socioeconomic status (SES) and other factors (Kluwin, 1994; Smith-Warshaw & Crume, 2020), but generally disagrees with a medicalizing definition of deafness as a pathology to be treated.

'Intersex' can be difficult to define. It usually includes conditions causing congenital variation in typical sexual development, but what conditions should be included and which culturally

sensitive term should be used to collectively refer to these conditions is not universally agreed on (Davis, 2011, 2015). It is also contentious to include intersex people in discussions of gender, sexual, and relational minorities (GSRM) as people who are LGBTQ+ (lesbian, gay, bisexual, transgender, queer, and other identities). Intersex people being classified as 'queer' makes them vulnerable to the prejudice and discrimination that people with other LGBTQ+ identities experience. Intersex people also have experiences unique among GSRMs (Davis et al., 2016; Hegarty et al., 2019). For example, many intersex people experience barriers to receiving equitable healthcare due to a dearth of providers that are competent in caring for their unique bodies that GSRMs are insulated from (Alpert et al., 2017; Johnson, 2021; Moseson et al., 2021).

## Medicalization in Infancy

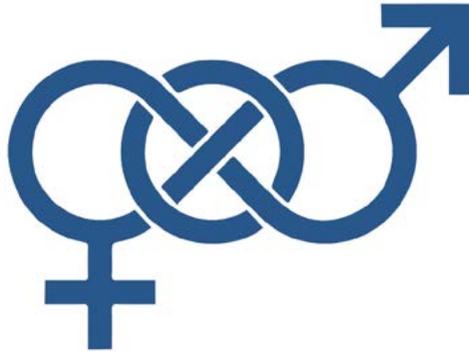
Medicalization of deafness and intersexuality begins in infancy. Intersex people may be identified by their external sex organ anatomy and early hearing loss detection and intervention programs screen most newborns in the United States for hearing loss. The goal of early identification of hearing loss and intersexuality is to allow early medical management of people with these conditions because the conditions are viewed as a medical pathology to be fixed. Many advocates for the Deaf and intersex community disagree with the pathologizing of people with these conditions, saying that deafness and intersexuality are typical variations in human development, not a medical problem to be fixed.

*cont.*

## Intersexuality, cont.

For hearing loss, the justification for intervention is that untreated hearing loss reduces an individual's quality of life. Extensive, high-quality research clearly shows that severe hearing loss from a young age inhibits speech learning and understanding, and easy interaction with hearing society, if not medically treated (Marriage et al., 2005; Steinberg et al., 2006; Wake, 2005). However, the typical treatment for profound hearing loss, cochlear implantation, may cause the permanent destruction of at least some of the recipient's residual hearing and carries other surgical risks (Gstöttner et al., 2005; Moran et al., 2017; Ramos-Macias et al., 2019). Implantation in children too young to consent to the procedure causes permanent changes to their body without their approval for something that even audiologists admit are non-life-sustaining reasons (*Message from the Academy Executive Committee, 2020*). Among people who view deafness as a pathology that should be medicalized, including most audiologists and physicians, the benefits of improved auditory communication are assumed to improve a child's quality of life enough to warrant the early surgery. Not everyone in the Deaf community agrees that cochlear implantation is warranted, saying that surgical intervention should be postponed until the individual with hearing loss can choose for themselves to undergo the procedure or not.

Intersexuality is also pathologized from infancy. Contemporary western society usually upholds the oversimplified belief that gender is a binary male-female dichotomy directly linked to biological sex which is also viewed as binary. Intersex people do not fit into this narrative of two distinct sexes, so like deaf people they are usually pathologized by healthcare providers. People who are intersex often experience cosmetic genital and sex organ altering surgery



---

**Surgical interventions continue in both deaf and intersex children despite the risks and side-effects because their parents and healthcare professionals typically prefer their children to be normalized to their definition of 'health' which includes a hearing, binary-sex child.**

---

during childhood to force their bodies to conform to one binary sex or the other. This surgical modification before the intersex person is old enough to consent to the procedure was considered best practice worldwide for many years despite numerous studies demonstrating the rate of significant side-effects for the purely cosmetic procedures. Among the most successful surgical methods, side-effects including sexual dysfunction, urinary incontinence, pain, and scarring requiring further surgery for typical functioning have been reported by most studies (Adamiak-Godlewska et al., 2019; Dong et al., 2015; Hoepffner et al., 2006). Other authors have found that untreated intersexuality is not bothersome to intersex people (Dodds et al., 2008) and that treatments attempting to normalize intersex children through surgery are significantly distressing to the people who get the supposed treatments (Yunger et al., 2004).

Intersex children experience negative outcomes from sex normalization surgeries so often that examples of intersex surgical modification that do not consistently have major complications are difficult to find in the literature (Bernabé et al., 2018). Subjective dissatisfaction with surgical results is high, with rates of dissatisfaction among surgery recipients as high as 40% (Adamiak-Godlewska et al., 2019; Dong et al., 2015; Zhang et al., 2013). Satisfaction among cochlear implant users, in contrast, is typically relatively high, primarily due to increased communication and socialization ability that cochlear implants provide (Looi et al., 2011; Ou et al., 2008). Outcomes for children receiving cochlear implantation surgery are usually much better than for intersex children receiving cosmetic sex altering surgeries.

These surgical interventions continue in both deaf and intersex children despite the risks and side-effects because their parents and healthcare professionals typically prefer their children to be normalized to their definition of 'health' which includes a hearing, binary-sex child (Bernabé et al., 2018; Dev et al., 2018). For infants with hearing loss or an intersex condition, surgical intervention decisions are usually made by the infant's parents with guidance from their healthcare providers when the child is very young, and unable to choose for themselves if they want to be permanently surgically modified or if they would want to instead remain as they are (Davis & Murphy, 2013; Dev et al., 2018). Though some deaf or intersex people choose to pursue normalizing surgery once they are old enough to consent to the procedures, they are in the minority, suggesting that the decision to perform surgery on either group may not always be preferred by the recipient.

cont.

## Intersexuality, cont.

### Parallels Throughout Life

There are significant similarities in the healthcare experiences among people who are deaf and people who are intersex because of the medicalization of both hearing loss and intersexuality. Receiving equitable, high-quality healthcare is challenging for both groups because of barriers at the interpersonal and institutional levels of the social ecological model. The social ecological model has nested levels of influence, showing how interpersonal interactions exist in the context of the social setting, which is in the wider context of the organization being interacted with, and so on. The social ecological model is often used in public health research because it provides a useful tool to conceptualize the many barriers that can affect healthcare access (Schwartz et al., 2011).

For Deaf people, interpersonal communication difficulties with healthcare providers that do not sign and institutional policies that inhibit easy access to sign language interpreters reduce healthcare access and quality (Powell et al., 2019; Steinberg et al., 2006; Tsimpida et al., 2019). Intersectional, more severe barriers have also been found for people with multiple disabilities such as hearing loss and cognitive decline, putting these individuals at higher risk of underutilizing the healthcare services that they need (Choi et al., 2018).

Intersex people also often have more difficulty utilizing healthcare services than non-intersex people. Interpersonal barriers for intersex people include being required to use stigmatizing language with healthcare providers

that pathologizes their intersex bodies; this language is often not accepted by intersex individuals (Davis, 2014). A higher prevalence of comorbid mental illness, likely due to discrimination linked to being a GSRM, also affects equitable healthcare utilization (D'Albertyon et al., 2015). Discrimination has been identified as an interpersonal barrier to receiving healthcare services among intersex people (Ojanen et al., 2019). Organizational barriers to healthcare for intersex people include a lack of education on intersex bodies resulting in relatively few healthcare providers who are competent in working with intersex people (Alpert et al., 2017; Johnson, 2021).

From infancy to old age, people who are intersex and people who are deaf

*cont.*

**Discover the Signia AX Advantage!**

Insio Charge&Go AX    Pure Charge&Go AX    Pure 312 AX    Styletto AX

My WellBeing    Auto EchoShield    Own Voice Processing 2.0    HandsFree for iOS

**signia**

Signia is proud to be an Official MAA Annual Sponsor and excited to show how our solutions help hearing care professionals meet the needs, wants, and style of more patients!

Discover all the Signia AX solutions at:  
[www.signia-pro.com/en-us/](http://www.signia-pro.com/en-us/)  
**(800) 766-4500**

**Be Brilliant™**

Signia is a registered trademark of WSAUD A/S. 08/22 SW-14450-22

**WIDEX MOMENT™**

Widex is a registered trademark of WSAUD A/S.

**DISCOVER THE WIDEX DIFFERENCE**

Widex USA is a proud sponsor of the Minnesota Academy of Audiology.

Visit [widex.com](http://widex.com) to learn more.

**WIDEX**  
SOUND LIKE NO OTHER

## Intersexuality, cont.

### Conflict between the understanding of health in individuals and in healthcare providers can make it difficult to decide the most ethical healthcare intervention or timing of treatment for people with these conditions.

have many similar experiences in their interactions with contemporary healthcare. Individuals from both groups are pathologized beginning in infancy, when their parents and healthcare providers usually cause them to undergo permanent surgical modification without their consent and with lifelong consequences. Both groups encounter interpersonal and organizational barriers to fair and equitable high quality healthcare services.

Movements exist to accept people born with significant hearing loss and intersex conditions instead of pathologizing their differences. People in these movements have a different understanding of what health is than the pathologizing definition of health used by most healthcare providers. Though these movements are not homogenous in their beliefs, they usually view conditions causing deafness and intersexuality as typical variations in human development that should not be managed surgically at all or until the individual with the condition is able to understand and

consent to the procedure for themselves. However, the detrimental effects of delaying cochlear implantation on speech understanding is very clear from over a century of high-quality experimental research (for example, Truy et al., 1998). Less research exists on the long-term consequences of not surgically modifying intersex children because surgical modification has been widespread established best practice for many years (Chapman, 2021; Danon & Schweizer, 2021). What limited results do exist are mixed, with some authors finding that delaying intersex surgery has little effect on development (Weber et al., 2009) and some authors finding that early intersex surgery is preferable to later surgery (Jones et al., 2009).

#### Conclusion

Hearing loss and intersexuality can cause individuals, their families, and their healthcare providers to confront ethical challenges surrounding if, when, and how to provide healthcare services to them. The pathologization of deafness and intersexuality is usually accepted in healthcare settings, but not by all deaf or intersex people because people working in healthcare typically understand health differently than many individuals with these conditions. This conflict can make it difficult to decide the most ethical healthcare intervention or timing of treatment for people with these conditions.

Both people who are deaf and people who are intersex have their differences pathologized and often experience

permanent surgical alteration at a young age without their consent despite risks and side-effects because their guardians and healthcare providers have a definition of health that defines these differences as pathological. Healthcare experiences are similar for deaf and intersex people throughout their lives because both face interpersonal and institutional barriers to equitable healthcare services. The similar ethical issues surrounding the pathologization, medicalization, and medical intervention of deafness and intersexuality can make it valuable to compare the experiences of each group to guide our ethical decision-making in clinical practice.

A PDF containing references for this article can be [found here](#).

*Shade Avery Kirjava (they/them) is a clinical audiologist in Los Angeles, California working in private practice. They are also a PhD student studying public health at the University of California, Irvine. Their research focus is examining issues in hearing healthcare access and equity for historically marginalized populations.*



## Welcome New Members

#### Audiologists

Kaitlyn Ostrowski, Au.D.  
Melissa Polonenko, Ph.D.  
Jacqueline Weycker, Au.D.

#### Students

Jessica Tichy

#### Associate Member

George Christ, Cognivue

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.](#)



## Message From Your President

**Jason Leyendecker, Au.D.**  
2022 MAA President

When I decided I wanted to be an audiologist, I always knew I wanted to work in private practice. For me this was because I wanted to make the biggest impact on the community I could. I knew private practice is where I would have the most autonomy and in turn the biggest opportunity to serve my community. Even in private practice there are limitations on how many patients you can see in a day or week or year. Becoming owner of a practice allows for me to continue to grow my impact with having more providers seeing patients every day, week and year. There are still ways to make an even bigger impact in our community.

Joining your state and national organizations can bring opportunities to provide a bigger impact. You get to volunteer at events that bring awareness to what we do as a doctors of audiology. Just this week I talked to someone who didn't know what an audiologist was. He just thought we were ear doctors. Not only do we get to bring awareness of our profession, but we also get to make changes that can impact the profession.

It has been discussed before that you shouldn't complain about something not getting done if you aren't stepping up and helping the process. Volunteering on a committee is a great example of how you can make a bigger impact

than the impact you already make in your clinic daily. You get to shape how audiology grows as a community, which in turn makes a difference in how your patients will find you, be treated by you, and how they pay for their services. One example is how joining the government relations committee would put you on the forefront of what is legislated for hearing care. Over the last few years, it has been a whirlwind of what could happen and while we monitor it, it is time to start making changes proactively.

With the changes to delivery models of hearing aids including OTCs, we will have to open up our dispensing laws to even the playing field with online companies and programs. Medicare and third-party rules for hearing care are going to be changing over the next few years and we all have the opportunity to make that change a positive one. This could potentially create a huge impact to the hearing loss community. It doesn't matter what niche of audiology you work in, we all can be affected both positively and negatively.

We need to take action now by first becoming a member of the organization. I challenged everyone last letter to reach out to someone and ask them to join the Minnesota Academy of Audiology. I'm doing that again today. Audiology is a small profession, and we must all step up together to reach the tipping point.

Next, we must step up and start volunteering when opportunities arise. It can be quite intimidating to step

out of your comfort zone to volunteer for something you have never done before. I can promise you, I've been there. The good news for MAA is that Dr. Hughes had a goal last year to create a policies and procedures manual for each committee so the processes, time requirements, communication procedures, and guidelines are all laid out. Thank you to everyone who worked on that document as it is not easy to write down what you do when you do it every year.

Each of us have busy lives and work hard daily to change the lives of our patients. We may have recently graduated and are unsure how our finances will work out with our tuition and other areas. We may have growing families or attending sporting events and acting as uber drivers for our kids. Maybe we are at a point where we have been there and done that for many years and are looking forward to transitioning to retirement soon. It doesn't matter what stage we are in our lives; audiology is still in our blood and requires our investment to continue. Making an impact can happen in so many ways within our jobs, but to make the biggest impact we need to invest in our profession.

I really appreciate all the hard work the committee members do, the Board does, and audiologists do to step up and invest time, money, or experience to grow our profession. Our future depends on more people stepping up and making the investment that will lead to an impact on the community.



# Whatever you think about custom hearing aids, think again

Our most advanced hearing technology carefully crafted in a rechargeable earbud design, custom made with your audiological expertise and our optimized crafting process.



**GN** Making Life Sound Better

© 2022 GN Hearing A/S. All rights reserved. ReSound is a trademark of GN Hearing A/S.



**Rodger Bakke**  
Territory Sales Manager  
612.865.3507  
rbakke@gnresound.com



**Erika Gesme**  
Inside Sales Representative  
1.800.248.4327 x 8610  
egesme@gnresound.com



**Eric Barrett**  
Field Training Audiologist  
612.456.8148  
erbarrett@gnhearing.com



## Student Spotlight

# Emily Hugo

Second Year Au.D. Student, University of Minnesota

**You just started the 2nd year of your Au.D. program. What are some of the things that attracted you to the field of audiology and what are you looking forward to in your 2nd year of studies?**

Both my parents are in the medical field. Growing up seeing the impact their work had, I knew that I wanted to go down a similar path and find a way to help people myself. In high school, I became very interested in American Sign Language and the Deaf Community, and my mom suggested looking into audiology as a professional/educational way to combine these interests. The more I researched the field, the more interested I became, especially once I started taking introductory speech-language-hearing courses during my undergrad years. Once I got into a research lab focused on audiology, I knew this was the field for me!

Going into my second year, I'm eager to start gaining more clinical experience with a wider variety of clients. I've already been able to learn a lot about the assessment and diagnostic parts of audiology, and I'm excited to continue expanding my working knowledge as I start looking into more specialized aspects of the field.

**If you could take a dream vacation, where would you travel to and why?**

I would probably choose to travel to Italy or Greece. I've visited Italy once before while on a middle school choir trip (we actually got to sing for the Pope at that time), but I was slightly too young to appreciate the art and history surrounding me. Greece interests me mainly for its beauty, but I'd obviously love to listen to ABBA and pretend I'm in Mamma Mia while I'm there.

**You have been working in a research lab for a few years now, tell us what type of research you participate in and what are some skills you have learned working with research participants?**

I work with Matt Winn in his Listen Lab on projects involving listening effort and communication difficulties for people with hearing loss. I've been involved with data collection, helping

prepare our projects' stimuli, as well as running participants once the projects are set up.

Some of my favorite experiences from the lab involve the conversations we have with our participants. Hearing them describe their difficulties and frustrations surrounding their hearing loss or devices has given me more perspective, and has motivated me to become a more empathetic and open-minded clinician. It's very satisfying when we are describing our projects and the motivation behind the tasks when the participants say, "yes that's exactly what I struggle with", or when they can relate our tasks to their personal experiences. I've also enjoyed seeing the "behind the scenes" parts of research—it's increased my appreciation for all the time and effort that it takes to get a paper published.

**What is your favorite non-audiology book?**

I've been on a murder mystery kick for a while. I remember not being able to put down Alex Michaelides' *The Silent Patient* and being genuinely shocked by the twist! I've also just started reading *The Stonewall Reader* to learn more about the resilience and growth of the queer community.

**Do you have any fun hobbies?**

I'm currently trying to learn how to play the bass but have made very minimal progress. I also enjoy hiking around Minnesota's and Wisconsin's beautiful state parks, listening to my girlfriend's records, and taking way too many pictures of my dog Odin!

**At this point in your program, do you have any specific clinical interests or speciality areas that you are looking forward to learning more about?**

Cochlear implants (CIs) have interested me since high school, and I've been fortunate enough—through my experiences with the Listen Lab—to work with several participants who have them. I feel like I've barely scratched the surface of understanding these devices, so I'm looking forward to our course covering them this spring! Additionally, I'm excited to start getting more experience with pediatric clients, since this is the group I've had the least amount of time to work with.

# 2022 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 five applications this year and a total of \$4500 in scholarships were awarded. Two of the scholarship recipients' essays are included here. We hope to include the third in our next issue.

## Jeremy Grecula

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

My future goals are the same for any age, start a family and have a stable job.



in sports has always been a huge thrill in my life. I enjoy playing, watching, talking about and playing video games of various sports. The sport however that

Looking specifically at the job field I am very interested in is sports management. Growing up

I love the most is basketball, basketball is very popular from my mom's side of the family and I am no different. My dream job would be working for an NBA or college level team within the sports management industry.

This dream however won't be fulfilled just by chance. I won't magically obtain this job; I have to put time and effort into this in order to achieve the goal. One obvious step would be attending college and getting my degree. I am currently accepted into the University of Minnesota for the major of sports management. Here I hope to gain knowledge and insights into the sports industry. I hope to see sports both from an entertainment and analytical perspective. Another step would be an internship. Through talking with one of my teachers, I learned that he has a friend who used to be an intern for the Minnesota Twins and Minnesota Wild. I hope to do the same. This could be for the Minnesota Timberwolves, Lynx or perhaps some of the college basketball teams such as the Gophers.

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

I would explain to them all the perks and benefits that come with speaking to an audiologist. The benefits come with knowledge. Knowing the details about your hearing loss, such as if it's the inner or outer ear. Or knowing what sounds you can hear and which sounds you have difficulty with. Another thing I find beneficial to see an audiologist is that in some ways they are like your lawyer or advisor. If you have an issue in school, they can give you tips on how to handle the situation.

## Isabel Higgins

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

This stage of life is a monumental one. The choices and decisions I make now will impact the rest of my life. Because of this, I have spent a lot of time thinking about what I want to accomplish in my lifetime. As someone who has suffered from hearing loss and other audiology related issues, I have decided to take my personal experiences and help others, some perhaps just like me.



After researching all the career paths associated with hearing, I decided that becoming an audiologist is what I want to do. Using my personal experiences to help others is my goal and going to college to pursue a degree in Communication Sciences and Disorders is my first step towards making an impact in other people's lives. Pursuing a career in audiology will positively impact those in my community who are suffering from hearing loss and other related issues. Losing hearing can be extremely scary, and because of my personal experience I will be able to assist people with compassion and a deeper understanding. I hope to be able to help people and their families to live life to the fullest, and I want to do everything that I can to ensure that individuals who suffer from hearing issues receive wonderful care.

*cont.*

## Scholarship Winners, cont.

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

Hearing. It is something that many of us do not put a lot of thought into. It is a part of our everyday lives, and it is a vital tool of communication. From the young age of three hearing is something that I have struggled to do. I would sit right next to the television and turn the volume up to the maximum and yet I still barely heard anything. When people would talk to me, I would grab their chins and pull their head to face me. I became an expert at lip reading, so much so that no one really realized that I could not hear.

One day my mom caught on and so to the ENT department at Mayo Clinic I went. They discovered that I was ninety percent deaf and suffer from a condition called

eustachian tube dysfunction. This means that my ears don't drain properly, and it causes my eardrums to be sucked in. It also means that I suffer from ear infections quite regularly. I have had many surgeries to place ear tubes and have had my adenoids removed twice. These procedures have helped improve my hearing, but I still have some issues, including tinnitus, and recently I found out that due to my eardrums always being retracted, my hearing bones are beginning to erode away. Luckily, my brain has rewired itself and I can still hear. The head MD of the ENT department told me that it is a miracle I can hear at all.

After all these visits and this shocking news, I realized that I want to help people that struggle to hear just like I do. Hearing will always remain a vital

tool of communication, and those who suffer from hearing loss and related issues need access to audiologists and hearings specialists to ensure they have the best quality of life. Although it is possible to live a great life without hearing, access to audiologists and necessary aid can significantly change someone's life.

Although it may be overwhelming and hard to make a large change like wearing hearing aids, the positive impact they will have on your life will be so rewarding. No matter your age, hearing health is important and always will be. Audiology can be an incredibly rewarding career and helping others communicate and thrive is an amazing joy one can experience. Although my hearing issues are not ideal, they have inspired me to want to make a difference with a career that will help others, just like you.

## As the global leader in implantable hearing solutions,

Cochlear is dedicated to helping people with moderate to profound hearing loss experience a life full of hearing. We have provided more than 600,000 implantable devices, helping people of all ages to hear and connect with life's opportunities.

We aim to give people the best lifelong hearing experience and access to innovative future technologies. We collaborate with leading clinical, research and support networks.

That's why more people choose Cochlear than any other hearing implant company.



[www.cochlear.com/us](http://www.cochlear.com/us)

©Cochlear Limited 2021. All rights reserved. Hear now. And always and other trademarks and registered trademarks are the property of Cochlear Limited or Cochlear Bone Anchored Solutions AB. Please seek advice from your health professional about treatments for hearing loss. Outcomes may vary, and your health professional will advise you about the factors which could affect your outcome. Please contact your local Cochlear representative for product information. CAM-MK-PR-521 ISS1 FEB21

# Closing the Audiology Gap with Automation Video Series



Grason-Stadler, a worldwide leader of clinical audiometric systems, hosted a conversation with Dr. James W. Hall III and Dr. Robert Margolis to discuss the current landscape of audiology, the patient-provider gap, and the essential need for an automated tool.

**“The population is growing and aging and that increases the need for our services much faster than our profession is responding to it. There are not enough audiologists to provide the services that are needed.”**

*-Dr. Robert Margolis*

## Why Automation?

When Dr. Margolis was the director of the University of Minnesota Hospital Audiology Clinic, he was surprised by the amount of time his professional staff was spending on completing pure tone audiometry, which occupied more of their time than any other billable activity.

Two experiences solidified his belief that this was an inappropriate use of professional time. The first was with a hearing evaluation performed on a highly educated colleague who, after watching him through the window of the sound booth said, “Why do you have to push those buttons?” The second was a meeting with the hospital director who questioned whether his staff was productive enough. When he pointed out that they typically were in the clinic until after hours and then took reports home to write, the director offered, “Maybe you need to automate some of those procedures.”

It was obvious to Dr. Margolis that the procedure was perfectly amenable to automation, and it set the stage for his automated audiometry solution, called AMTAS.

**“We really need to put a lot of effort into making sure that every graduate of an Au.D. program in the United States views automated audiometry as an essential component of their clinic.”**

*-Dr. James W. Hall III*

## 4 Episodes Unpack Automation and AMTAS

This video series dives into an engaging, casual, and informative discussion on all things automation in the field of audiology. There are 4 episodes in total:

- Episode 1: Overview
- Episode 2: Creation Story  
Learn more about the inspiration behind automated audiometry.
- Episode 3: Validation and Calibration  
Hear the discussion on how the impact of quality indicators, validation, and calibration have played a key role in Closing the Audiology Gap with Automation.
- Episode 4: Acceptance and Future  
Dr. Hall and Dr. Margolis discuss the future of automation in the audiology field, and why it should be viewed as a tool for clinicians to integrate into their testing routine.

## Register to View the Entire Series!

Visit [www.Grason-Stadler.com/ClosingTheGap](http://www.Grason-Stadler.com/ClosingTheGap) to register for access to the entire interview and other automated resources.



# Telecoils and Hearing Loops Are Our Past, Present, and Future

Anne Sittner Anderson, Communications Director,  
Minnesota Commission of the Deaf, DeafBlind & Hard of Hearing

You may have heard or watched a [PSA on telecoils and hearing loops](#). The ads have been broadcasted on radio and television since April 2022. They are the beginning of a large-scale, state-wide communications campaign led by the Minnesota Commission of the Deaf, DeafBlind & Hard of Hearing (MNCDHH). We want people to know that hearing loops and telecoils are an option for accessing clear sound.

While it has been around for a long time, loops and telecoils are current technology. People need and use them if they know about the technology. We need the help and support of the audiology community to reinforce this message.

The text of the PSA, which was developed with Loop Minnesota and the Minnesota Broadcasters Association, appears in the box on this page.

## Why MNCDHH cares about hearing loops

The MNCDHH has constituents who share their stories with us. Some have purchased hearing aids and learned sometime later about hearing loops and wondered why their audiologist or instrument dispenser did not let them know that telecoils and hearing aids are an option. Others knew about telecoils and loops. When they asked their

---

**“20% of the general population have hearing loss and can’t understand speech in noisy places. The universal blue and white hearing loss sign, imprinted with the capital letter T means that a hearing loop is installed. Switch your hearing aids or cochlear implants into the ‘T’ or telecoil mode for clearer speech. Contact your audiologist or instrument dispenser to learn more about this technology.”**

***Paid for by the Minnesota Commission of the Deaf, DeafBlind & Hard of Hearing, the Minnesota Broadcasters Association, and this station.***

---

provider about the technology, they were informed that telecoils and loops are outdated technology.

We know the technology cannot be outdated since loops are still used in public meeting spaces, including libraries, performing arts centers, the airport, churches, etc. Hearing loops are valued by many with hearing loss, as evidenced by the posts in Loop Minnesota’s blog<sup>1</sup>. Here is an excerpt:

“It is up to those who are hard-of-hearing to advocate on their own behalf for equitable communication

access by means of hearing loops. For now, loops and telecoil systems are the only and best bet for helping hard-of-hearing people understand speech clearly in large, loud and echoey places. So, spread the word on the communication advantages of hearing loops in the interest of inclusion and quality of life.

*-Monique Hammond  
March 16, 2022*

## MNCDHH believes that Bluetooth is additional technology, not replacement technology

Bluetooth technology is best used in certain situations, such as one-on-one conversations. Telecoils, in contrast, can be used in broader situations, such as a large meeting or event. All hearing aids would have both Bluetooth and telecoil capabilities in a perfect world.

I attend Hearing Loss Association of America – Twin Cities (HLAA-TC) Chapter meetings from time to time. They will usually have guest presenters at their meetings. On October 16, 2021, HLAA-TC had a guest presenter from AV Sound. When one member expressed concern about losing telecoils and hearing loops in the future, he expressed a belief that there is room for both Bluetooth and telecoils. In HLAA’s meeting summary, they wrote, “Tim demonstrated how Bluetooth is emerging as the wave of the future but traditional technologies will be in use for many years to come. Hybrid technologies are a possibility.”<sup>2</sup>

*cont.*

## Telecoils, cont.

### Are hearing aid manufacturers including telecoils in modern hearing aids?

When I bought my hearing aids in the summer of 2020, I forgot to ask about loops, and my audiologist did not mention them. Months later, I remembered, took out my hearing aids, and searched for the familiar ‘t.’ Unfortunately, no ‘t’ was visible. After concluding that I will not have access to loops, I wondered how many hearing aids on the market have telecoils built-in and how many do not. If this is a barrier, how do we petition manufacturers to include both telecoils and Bluetooth technologies in their hearing aids?

### Let’s have a conversation

I would love to have a conversation about hearing loops and telecoils with you. I have so many questions. Why do people believe that telecoils and loops are outdated technology? What is taught in audiology programs about telecoils? How do we encourage more hearing aids to be produced on the market with telecoils? Are there other gaps that need to be addressed? I would love to learn more about systemic barriers and strategize on problem-solving approaches. Please reach out to me at [anne.sittner-anderson@state.mn.us](mailto:anne.sittner-anderson@state.mn.us).

### References

1. <https://www.loopminnesota.org/blog/>
2. <https://www.hlaatc.org/wp-content/uploads/2021/12/FINAL-COMPAT-MODE-NOV-2021.pdf>, page 5

*Anne serves as the lead for developing and implementing the statewide communication plan for the Minnesota Commission of the Deaf, DeafBlind & Hard of Hearing (MNCDHH). If you have received our newsletters, videos, and social media posts, she is the lady behind the curtain. Anne is also responsible for MNCDHH’s website and various sub-sites. As a devout accessibility advocate, Anne advises various organizations and individuals about how to make sure their content is accessible to people who are deaf, deafblind, and hard of hearing. In addition, she advised the Governor’s Office on providing certified and qualified sign language interpreters and closed captioning during emergency broadcasts.*

**PHONAK**  
life is on

A Sonova brand

## Conversations shine with Lumity.

Introducing Phonak Audéo™ Lumity so you can hear the quiet-talking barista.





## MAA Seeks a Bookkeeper



The board of directors is seeking to contract with a bookkeeper to manage our financial record keeping on an ongoing, monthly basis. We're looking for an individual or small firm with experience in the world of non-profit organizations. Our goal is to have consistent financials and a source for best practices, while simplifying the role of the treasurer so that it is manageable for a volunteer.

If you know someone who might be a good fit, please contact MAA Administrator Dana Robb at [administrator@minnesotaaudiology.org](mailto:administrator@minnesotaaudiology.org).



- Over 250 years of combined hearing industry experience
- The most comprehensive product offering of audiology supplies in the industry
- Responsive and dependable service from fun and dedicated professionals who really care

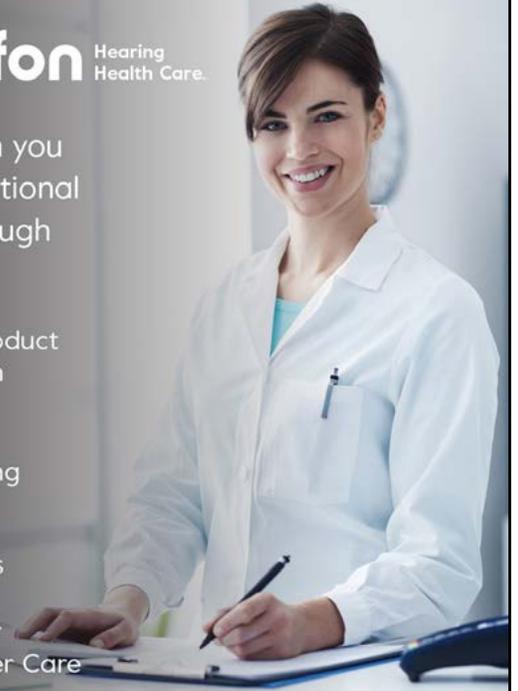
You provide better hearing  
**We make it simple**

[www.warnertechcare.com](http://www.warnertechcare.com)



We work with you to bring additional patients through your door.

-  Wide Product Selection
-  Simple Processing
-  Quality Referrals
-  Superior Customer Care



Contact us to learn more about opportunities for your practice!

1-800-920-4327

[www.amplifonusa.com/amplifon-network](http://www.amplifonusa.com/amplifon-network)