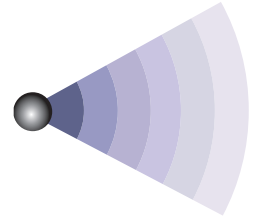


AMERICAN HEARING RESEARCH FOUNDATION SOUNDINGS NEWSLETTER



Chairman's Update

Led by Chairman Alan G. Micco, MD, Associate Professor of Otolaryngology–Head and Neck Surgery at Northwestern University Feinberg School of Medicine, the Foundation Research Committee met on October 7, 2015 and reviewed research grant submissions for the 2016 funding year and formalized its recommendations. Subsequently, the Board of Directors met for its semi-annual meeting on November 18, 2015 and approved those recommendations. In 2016, the Foundation will fund eight (8) totaling \$201,000. Since 2010, the Foundation has funded over \$1.1 million in research grants. In a future edition of Soundings, the Foundation will introduce 2016's grant recipients and share information regarding their proposals. These research projects cover a wide range of areas and are conducted with the hopes that we might better understand how we lose hearing and balance functions, how we regain them, and most importantly, how to preserve the function we still have.

For more information on previously funded grants, please visit www.American-Hearing.org/Research-Grants/Funded-Grants.

Our History

2016 will be the 60th anniversary of the founding of the organization that would become the American Hearing Research Foundation. The Mid West Hearing Foundation was established in 1956 to accept tax-deductible gifts from patients for the support of continued research by foundation founder George E. Shambaugh, Jr., MD and co-founder Eugene L. Derlacki, MD, both otolaryngologists from Chicago. Shambaugh was the son of a founder of the American Board of Otolaryngology.

The current Foundation has strong grounding in research, even before it became an official foundation. It can actually trace its roots back to the first operation performed to restore hearing. In 1938, Dr. Shambaugh took part in developing and performing the first successful surgical technique to restore hearing. He performed the first fenestration operation together with Julius Lempert, MD. Fenestration was a surgical procedure that restored hearing to patients with otosclerosis—a condition where spongy bone grows in the middle ear later preventing the vibration of small bones (stapes) crucial for hearing. Fenestration has now been replaced by procedures that remove the damaged stapes bone and implant an artificial one—another class of procedures, called stapedectomies, that researchers associated with the Foundation have developed.

In 1944, gifts from grateful patients of Drs. Shambaugh and Derlacki helped them construct and equip a hearing clinic at Northwestern University Medical School, the first clinic of its kind where numerous diagnostic procedures were developed.

For more information on the history of the Foundation, please visit www.American-Hearing.org/about.

The Board of Directors will meet for its annual meeting on May 18, 2016.

Sincerely,



Chairman, Board of Directors

2014 Research Grant Update - Katherine Rennie, PhD

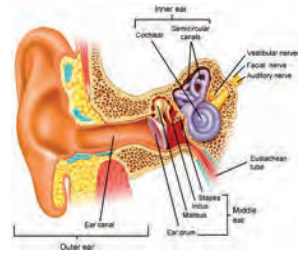


In 2014, the Foundation awarded a grant to Katherine J. Rennie, PhD, Associate Professor of Otolaryngology at the University of Colorado School of Medicine. Dr. Rennie leads the Vestibular Hair Cell Laboratory and her grant was entitled “Zonal Variations in Calyx Properties of the Crista.”

The vestibular system is the part of the inner ear that helps us to maintain balance. Within the peripheral vestibular system specialized hair cells in patches of epithelia detect head movement and send rapid signals via nerve fibers to the brain. We made thin slices through the vestibular epithelia and investigated whether nerve terminals in different zones had different electrical properties. We focused on a specific type of nerve terminal called a calyx, which forms cup-shaped afferents around type I hair cells.

We found that calyx fibers in central zones have potassium currents with different characteristics than calyx fibers in peripheral locations of vestibular epithelia. Potassium currents are produced when potassium ions flow through channels in the membrane. Underlying channels were investigated with drugs that block specific types of potassium channel. The effect of these drugs on action potential firing in nerve fibers was also studied. This information was used to construct a mathematical model of the calyx terminal. Our data suggest that vestibular signals are processed differently in the two zones, which has implications for the treatment of vestibular disorders.

The Vestibular Hair Cell Laboratory’s research is focused on hair cells of the vestibular system. The vestibular system of the inner ear senses accelerations of the head and interacts with other systems to produce the sensation of balance. It is estimated that more than one third of adults in the US experience vestibular dysfunction at some time in their life. However the mechanisms underlying normal and abnormal processing of vestibular sensory signals are not well understood. The laboratory’s research aims to elucidate how signals are processed in the peripheral vestibular system using rodent models.



For more information on Dr. Rennie’s research and the Vestibular Hair Cell Laboratory, please visit <http://goo.gl/y54x4X>.

2014 Research Grant Update - Gavin Bidelman, PhD

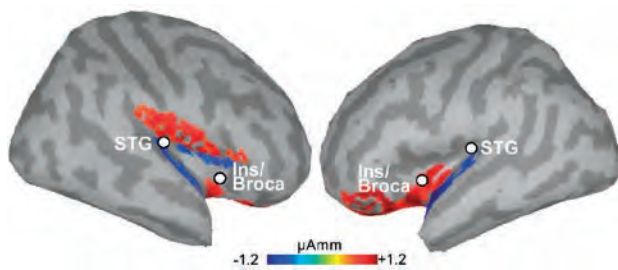


In 2014, the Foundation awarded a grant to Gavin M. Bidelman, PhD, Assistant Professor of Communication Sciences and Disorders at the University of Memphis. Dr. Bidelman directs the Auditory Cognitive Neuroscience Laboratory and his grant was entitled “Central Neurophysiological Markers Underlying Degraded Speech Recognition.”

Extracting speech from background noise is essential for real-world communication because everyday listening environments (e.g., classrooms, restaurants, cocktail parties) usually contain competing sounds. Perceiving speech-in-noise (SIN) is particularly problematic for older adults and those with hearing impairment. In fact, while modern hearing aids provide audibility to a patient, they often fail to restore speech intelligibility in noisy settings. Chief among the complaints of hearing aid users’ dissatisfaction is difficulties understanding speech in noise. We reasoned that listeners’ difficulties with SIN, broadly speaking, might reflect individual differences in how the central auditory nervous system processes speech. To this end, our AHRF funded project aimed to characterize the neural basis of SIN perception and determine how the human brain encodes and transmits speech information along the auditory pathway.

2014 Research Grant Update - Gavin Bidelman, PhD *Continued*

In a series of experiments (Bidelman & Bhagat, 2015; Bidelman & Howell, 2016), we measured electrical responses (EEG) emitted from the cortex of human listeners in response to noise-degraded speech sounds. Participants were matched in age and hearing sensitivity (i.e., normal audiometric thresholds). Analyses focused on questions of when and where the processing of speech takes place in the brain, and more critically, how noise affects these neural signatures. We then compared listeners' brain activity with their QuickSIN scores, a behavioral measure of degraded speech perception routinely used in the audiology clinic. Our basic aim was to determine if we could predict listeners' perception of degraded speech using their underlying neural activity in one or more brain regions.




Results from this experiment revealed dynamic changes in how the brain processes speech amidst noise. Initially, speech is analyzed in language-related brain areas (i.e., Broca's area) in the left hemisphere. But as the signal becomes more impoverished with increasing levels of noise, speech processing begins relying more heavily on the auditory cortex and even the right hemisphere to

compensate. Interestingly, we could predict how well listeners do in the behavioral SIN task based on how well speech was coded within this network (Bidelman & Howell, 2016). These findings have important clinical implications as our objective can predict how well patients will do hearing speech in noise based solely on their brain activity.

We then extended these results to investigate SIN processing in listeners with different language experience (Bidelman & Dexter, 2015). This study was based on earlier behavioral findings showing that bilinguals have difficulty perceiving nonnative speech in noise, despite being fluent in their second language. We compared behavioral (QuickSIN) and electrical brain responses (EEG) to noisy speech between monolingual and bilingual speakers of American English. We were interested to see (1) if bilingual brains use the speech network identified in our first study differently than in native speakers and (2) if this different neural pattern could account for their poorer SIN perception. Results showed that nonnative speakers recruit different "nodes" of the speech network than native speakers; whereas native listeners' SIN perception was predicted by neural activation in brain areas responsible for language (i.e., Broca's area), nonnative listeners showed no activity in this critical region (Bidelman & Dexter, 2015). In interpreting our results, we suggested that poorer SIN perception in bilinguals observed behaviorally is driven by the fact that they do not recruit the normal "language centers" when listening to (nonnative) speech. Collectively, findings of our AHRF project revealed a dynamic network for speech processing in the human brain whose "nodes" are engaged differently depending on not only the acoustic quality (i.e., "noisiness") of the speech signal but also on a person's long-term language experience.

References

- Bidelman, G. M., & Bhagat, S. P. (2015). Right ear advantage drives the link between olivocochlear efferent "antimasking" and speech-in-noise listening benefits. *NeuroReport*, 26, 483-487.
- Bidelman, G. M., & Dexter, L. (2015). Bilinguals at the "cocktail party": Dissociable neural activity in auditory-linguistic brain regions reveals neurobiological basis for nonnative listeners' speech-in-noise recognition deficits. *Brain Lang.*, 143, 32-41.
- Bidelman, G. M., & Howell, M. (2016). Functional changes in inter- and intra-hemispheric auditory cortical processing underlying degraded speech perception. *Neuroimage*, 124, 581-590. 

Shopping with AmazonSmile®

If you enjoy shopping with online retailer Amazon, you also can provide financial benefits by choosing the American Hearing Research Foundation from their list of recognized charities. Tens of millions of products purchased through AmazonSmile® are eligible for this giving program. You can use an existing Amazon account and all of the account settings will be the same.



The difference is that a portion of the purchase price will be directed to the American Hearing Research Foundation when it is chosen as your designated charity. Periodically, Amazon will offer limited time promotions that increase the donation amount. Certain restrictions apply. The donations made through this program are not tax deductible because the donation is being made by Amazon. Visit <https://goo.gl/By6GCR> to do your shopping today!

ARO MidWinter Meeting



Foundation Chairman Richard M. Muench and Foundation staffer

Brian S. Bailey will be attending the Association for Researchers in Otolaryngology (ARO) 39th Annual MidWinter Meeting at the Manchester Grand Hyatt Hotel in San Diego, CA in February 2016. They will be hosting a dinner for former and current Foundation research grant recipients on Sunday, February 21, 2016 and Bailey will be presenting on the annual "Get Your Research Funded" panel on Monday, February 22, 2016. Are you a former or present research grant recipient and interested in attending the Foundation-sponsored dinner? Please e-mail Brian@AmericanHearing.org.



For more information on the meeting, please visit <http://goo.gl/LWMQxM>.

Blue Skies



In 2014, the Foundation Board of Directors agreed to become a sponsor of *Blue Skies*, a short film. The film is the combined portfolio and senior project of Lee Clements and Alec Wittschiebe, students pursuing fine arts degrees at Regent University in Virginia Beach, VA. *Blue Skies* is the tale of Tom, a building inspector who is diagnosed with significant hearing loss, and the story of how that simple problem affects his work and personal life. He must come to terms with what he stands to lose—not just his hearing, but his most important connection to the past.



The film continues to be shown at film festivals around the nation. To view the film with or without closed captioning, visit www.American-Hearing.org/blue-skies-video. To follow the film's Facebook page visit <https://goo.gl/y7aesV>.



Meniere's Disease Seminar

On July 25, 2015, the Foundation presented "Living with Meniere's Disease," a half-day public education seminar for patients interested in learning about the diagnosis, management, and treatment of Meniere's Disease. The event was held at the Hilton Suites Chicago/Oak Brook in Oak Brook, IL.

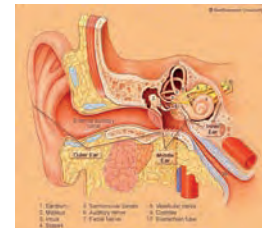


Otoneurologist Marcello Cherchi, MD/PhD, Assistant Professor of Clinical Neurology of Northwestern University Feinberg School of Medicine who practices at Chicago Dizziness and Hearing, presented on the historical overview and medical therapies. Presenting on diagnostic testing and possible pitfalls was Heather Gradisek, AuD, also with Chicago Dizziness and Hearing. Bulent Mamikoglu, MD, an otolaryngologist with Chicago Dizziness and Hearing, discussed surgical therapies.



To listen to an audio recording of the seminar and view speakers' PowerPoint presentations, visit www.American-Hearing.org/MenieresSeminar.

What is Meniere's Disease?



In 1861, the French physician Prosper Meniere described a condition which now bears his name. Meniere's disease is a disorder of the inner ear that causes episodes of vertigo, ringing in the ears (tinnitus), a feeling of fullness or pressure in the ear, and fluctuating hearing loss. In Figure 1, the area of the ear affected is the entire labyrinth, which includes both the semicircular canals and the cochlea.

For more information on Meniere's disease, please visit www.American-Hearing.org/Disorders/Menieres-Disease.



Marion Goltz (July 31, 1922 - August 15, 2015)

The American Hearing Research Foundation would like to thank the family of the late Marion (Boom) E. Goltz, a longtime resident of Redwood City, CA, who passed away this past August 2015, for sharing her story with us. Marion was 92 years old. Foundation staff had the pleasure of communicating with her niece, Jackie Ann Patterson, the executor of her aunt's estate. The Foundation was a beneficiary listed in Marion's will.

Ms. Patterson relayed the following:



Marion suffered from Meniere's disease since the 1970s. She sought treatment and wound up having her inner ear removed from one side. Still she continued to experience dizziness throughout her life. She was of the opinion that the medical profession didn't understand her issues very well and didn't really know how to help her. She was motivated to leave part of her wealth to research so that others wouldn't have to suffer the way she did. Marion asked me to help her find out who was doing meaningful research into Meniere's disease. We found the American Hearing Research Foundation online. We were impressed by the quality of research as we read through the list of grants they had made. She believed that the Foundation had the expertise to direct her funds to the most promising areas of research in a field where she didn't have current, technical information. Marion was pleased that someone was still trying to help people with Meniere's disease. In her final weeks, she expressed her hope that researchers would use the funds she left to American Hearing Research Foundation to make progress against this condition. It brought my aunt peace that her passing had the potential to help others in a way that she most fervently wished she could have been helped in her life.



Cancer and Hearing Loss: A Personal Look



John Sheehan
Community Manager
Reprinted with permission of Starkey Hearing Technologies



Cancer and hearing loss. The two are more closely related than one might think. In honor of Breast Cancer Awareness Month, we talked with two cancer survivors how cancer treatment may impact hearing health. Starkey's Director of Network Education & Training Mary Leisses who has been cancer free for over four years, and Audiologist Sheri Billing of The Hearing Doctors in Illinois, share their insight here.

If there was a treatment that existed during Mary Leisses' battle with breast cancer, there's a good chance she tried it. Cancer free for more than four years, she not only carries physical scars from her ordeal, but now has tinnitus, an ongoing and constant ringing or buzzing in her ears.

"It's good, old-fashioned tinnitus," said Leisses, Starkey's Director of Network Education & Training. "On bad days, it gets worse. When I have too much coffee, it gets worse. It's always there and it's not going to get any better."

Leisses believes her tinnitus stems from the drugs that are prescribed to fight chemo toxins and infections rather than chemotherapy and radiation directly. These drugs are known to be effective against cancer, but potentially devastating to the inner ear.

"You put poison in your body and then you take more poison to counteract the poison that is being used to fight the cancer," she said.

During her second round of chemo, doctors took an aggressive approach with antibiotics aimed at minimizing her risk of infection. She ended up having a reaction to the medication and wound up with tinnitus upon the completion of her treatment. She acknowledges the trade-off. "I've made the joke that, while I have tinnitus, it beats the hell out of the alternative."

Leisses isn't alone. According to Johns Hopkins Medicine, WebMD, the Better Hearing Institute and others, there is a link between ototoxicity and certain cancer fighting agents, especially chemotherapy medications and radiation, which can result in hearing loss and tinnitus.

According to the American Hearing Research Foundation, there are two types of hearing loss that are associated with ototoxicity. Sensorineural refers to damage caused to the inner ear by chemo meds and is often permanent. Conductive hearing loss targets the outer or middle ear and is often associated with radiation. It can sometimes be temporary.

Common chemotherapy drugs, like cisplatin, have been known to cause hearing loss when administered in high doses. However, cisplatin isn't the only chemo drug harmful to the inner ear, or "ototoxic." Some other drug types include:

- High doses of salicylates, such as aspirin
- NSAIDS, including naproxen sodium and other non-steroid anti-inflammatory medications
- Diuretics or "water pills" such as furosemide
- Antibiotics like Erythromycin, Gentamycin, Tobramycin or Streptomycin
- Carboplatin

It's important to gather as much information you can before you begin any new treatment.

Sheri Billing, AuD. and owner of The Hearing Doctors in Wheaton, Illinois, believes the number of hearing loss and tinnitus cases that stem from cancer treatments have decreased.

“The good news is that, today, so many of those ototoxic drugs have been replaced with drugs that have fewer side effects,” she said. “They still exist, but are not used as widely thanks to medical advancements.”

Some of those drugs include potassium-based chemo drugs that are now primarily used for the most severe, aggressive types of cancer.

Like Leisses, Billing is also a breast cancer survivor. She was diagnosed this past spring and recently received news that her cancer was in remission after taking an aggressive approach to her treatment by going through a double mastectomy. “I wanted it done fast,” she said. “I’ve lost two very close friends to breast cancer and another one who is battling ovarian cancer now. It was my choice. I wanted it done.”

Both Leisses and Billing recommend getting a baseline-hearing test before beginning any type of treatment. This will provide patients with an idea of their starting point hearing level and enables them to monitor for any changes.

“Don’t be afraid to ask questions,” said Leisses. “Understand why they are recommending what they are recommending, trust your gut.”

Leisses also urges patients to bring someone they trust to their appointments. “Have another set of ears there to ask questions,” she said. “It can make all the difference in the world in feeling you are in control. It can be overwhelming.”

The American Society of Clinical Oncology (ASCO) urges patients to schedule a special appointment to review a treatment summary, which should include information about treatment and follow-up care. ASCO also recommends patients speak with other specialists (such as cardiologists or endocrinologists) to monitor potential late effects.

Leisses also does not rule out using any specific type of drug for treatment, even if it contains risks. This is because every type of cancer is different. Her advice for patients that are about to go through cancer treatment is to ask a lot of questions and understand what doctors are recommending and why they are recommending it.

“When I was first diagnosed, I had a lot of people who had been through cancer give me a lot of advice and were saying ‘You shouldn’t do this’ or ‘You should ask your doctor this,’ she said. “But I realized what may have worked for you or another person may not work for me, for my type of cancer, my body, my life.”

Leisses said she realizes that certain drugs might threaten a person’s hearing or have other side effects that might impact one’s quality of life, but one of those drugs might be the exact drug a patient needs to beat their specific type of cancer.

“It’s part of the trade-off,” she said. “I’m here and I will see my daughter grow up.” 

run because

In May 2014, the Foundation entered into a fiscal sponsorship agreement with Katie Mertz for her program “run because,” which accepts online donations for her participation in marathons around the country. All proceeds from the program are remitted to a restricted fund held by the American Hearing Research Foundation and used for the purpose of funding research related to Meniere’s disease.

Later in 2014, the Mrs. Mertz attorney and Assistant Director of Pro Bono and Public Service at Marquette Law School in Milwaukee, WI, was nominated and approved for a seat on the Foundation’s Board of Directors.

Katie’s run because Initiative Supports the American Hearing Research Foundation



Katie Mertz wasn’t a runner. “In fact, I didn’t like running. However, in the spring of 2013, I was inspired by a close friend who ran her first half marathon the weekend after the tragedy in Boston to raise money and awareness of the Parkinson’s Disease from which her mom suffered. In September 2013, I completed my first half marathon and was surprised by my regret that it was over. During my training, my mom had begun to suffer from increasingly bad episodes of Meniere’s disease, which she had been diagnosed with 11 years earlier. Previously, the episodes had been few and far between, but now her daily life was repeatedly impacted. I saw the effects firsthand as she constantly feared the next episode. Not well known, Meniere’s disease is a disorder of the inner ear that affects hearing and balance and causes vertigo, tinnitus, and hearing loss. It is unpredictable and difficult to diagnose and manage. Meniere’s disease is also progressive. Unfortunately, the cause is currently unknown—so is a possible cure. Currently, very few organizations are dedicated to funding research and raising awareness of Meniere’s disease. run because was created to keep me accountable to my goal of raising money for Meniere’s disease research by running 51 half marathons, one in each state plus DC by age 50. I ran my first half because I didn’t know if I could. Now I run because I can. And by running, I can bring awareness and support to finding a cure.”

Interested in supporting Katie and helping find a cure for Meniere’s disease?

Please visit <http://runbecause51x50.wix.com/run-because>

Keep up with Katie’s progress by visiting her Facebook page at www.Facebook.com/runbecause.

Katie completed race number ten on Halloween in New Orleans, LA. A group of eight traveled to cheer Katie on. The race raised \$1,160 with \$13,792 raised to date. Katie anticipates another six races for 2016! 📣



Thank You to Our Research Committee

Thank you to our Research Committee who reviewed our 2016 research grant submissions and made funding recommendations to the Board of Directors:



Alan G. Micco, MD
Chairman
Associate Professor, Otolaryngology – Head and Neck Surgery and Neurological Surgery
Northwestern University Feinberg School of Medicine



Sumit Dhar, PhD
Professor and Chair, Communication Sciences and Disorders
Northwestern University



Jill B. Firszt, PhD
Professor, Otolaryngology and Audiology and Communication Sciences
Washington University School of Medicine



Christina Runge, PhD, CCC-A
Associate Professor, Otolaryngology and Communication Sciences
Chief of the Division of Communication Sciences
Medical College of Wisconsin



David A. Klodd, PhD
Professor, Audiology
University of Illinois College of Medicine at Chicago



Nina Kraus, PhD
Professor of Speech, Communication Sciences and Disorders; Neurobiology and Physiology
Northwestern University



Anna Lysakowski, PhD
Professor, Anatomy and Cell Biology
University of Illinois at Chicago



Katherine Shim, PhD
Scientific Review Officer
Division of Extramural Activities
National Institute on Deafness and Other Communication Disorders

What Research has Yielded

Research funded by the American Hearing Research Foundation over the last five years has yielded many key insights into potential medical treatments for hearing loss. AHRF researchers have:

- Begun screening hundreds of drugs for their potential to influence hair cells and neurons in the inner ear which are lost or damaged in hearing loss. This kind of large drug library screening has never before been performed to test for potential drugs to treat hearing loss.
- Developed a technique to grow large numbers of hair cells for use in lab experiments, eliminating the laborious and time-consuming process of manually collecting the small numbers of hair cells present in individual cochleas.
- Has used stem cells to produce spiral ganglion neurons - the neurons responsible to carrying sound information from the hair cells to the auditory nerve. The death of these neurons is a major cause of hearing loss.
- Developed the first genetic therapy to restore hearing in a mouse model.
- Identified and described crucial inner ear structures responsible for balance.

Education

The American Hearing Research Foundation reaches more than 100,000 health consumers and patients seeking quality information on hearing and balance disorders through its website, www.American-Hearing.org, and its print and electronic newsletters. The Foundation provides more than 30 in-depth, physician-authored articles on hearing and balance disorders with links to current research and resources to find additional support. The Foundation occasionally fields specific questions on hearing loss that come in over the phone and by email and provides responses from our physician board members. ▶

#GivingTuesday



On December 1, 2015, the Foundation participated for the first time in #GivingTuesday. In its fourth year, #GivingTuesday is a global day of giving fueled by the power of social media and collaboration. Observed on the Tuesday following Thanksgiving, #GivingTuesday kicks off the charitable season, when many focus on their holiday and end-of-year giving. Since its inaugural year in 2012, #GivingTuesday has become a movement that celebrates and supports giving and philanthropy.

Partner with Us!

Each of us has special people and loved ones who play important roles in our lives – a parent, sibling, spouse, grandparent, or teacher - a “special hero” who shaped us into who we are today. Honor or memorialize that special person by making a tax- deductible donation to AHRF in their honor or memory. You could also:

- Make an investment in the future by giving a tax-deductible donation in honor of your children and grandchildren.
- Tell your friends about the work we do.
- Share this newsletter with someone you care about.
- Help us reduce our mailing costs by providing us with your email address. ▶

Annual Giving Campaign

The Annual Giving Campaign sustains the current research and educational programs that are vital to increased knowledge about hearing and balance related disorders. The Foundation welcomes contributions of all levels and from all individuals, organizations, and corporations. Gifts to the Annual Giving Campaign will be recognized in our publications and on the website. There are many ways to support the Foundation this year, and in years to come.

Giving to the General Fund

Contributions to the AHRF's Annual Giving Campaign support the Foundation's general fund which underwrites research grants and special projects. General funds sustain the core programs that are central to the Foundation's mission. Donations to the Annual Giving Campaign can also be restricted to use for research into certain areas such as Meniere's disease. Gifts are accepted online at the Foundation's website and by mail or fax. There are several levels from which to choose:

- Chairman's Circle \$5,000 and above
- Research Champion \$1,000 to \$4,999
- Research Supporter \$100 to \$999
- Friends of the Foundation \$99 or under

Honor and Memorial Gifts

The Foundation acknowledges gifts made in honor or in memory of the special people in our lives. We recognize these special tributes personally, and appreciate the kindness of many generous individuals. Please use the enclosed form to provide us with your instructions about notifications.

Planned Giving

The Foundation wishes to secure its role in research for generations to come. When you remember the Foundation through a gift in your will, known as a bequest, you become part of a special group of supporters whose generosity has made possible some of the most innovative and cutting-edge research projects. Gifts that come from sources other than current expendable income are usually part of an overall estate plan that may take effect during a donor's life or after his or her death. Individuals can choose to leave a specified sum of money or a percentage of their estate. Other forms of planned giving include securities, bank accounts and certificates of deposit, life insurance policies, retirement plans, life income funds, and other similar giving mechanisms. These types of gifts should be arranged by a qualified attorney or financial planner.

Combined Federal Campaign



The American Hearing Research Foundation is a designated charity for the Combined Federal Campaign (CFC) – recognized as the largest workplace giving campaign in the world that raises more than \$265 million each year – and Community Health Charities (CHC) which annually distributes more than \$60 million of all public sector contributions, making it one of the campaign's largest partners. The Foundation receives contributions through convenient payroll deductions from employees whose employers participate in CFC/CHC. The Foundation is listed on the CFC National List under National/International Organizations, number 10571. For more information, please visit <http://goo.gl/Df1Zm8>.

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2013 Research Grant Update - Sumit Dhar, PhD


In 2013, the Foundation awarded a grant to Sumitrajit (Sumit) Dhar*, PhD, Department Chair and Professor of Northwestern University's Communication Sciences and Disorders Department and Fellow of the Hugh Knowles Center for Clinical and Basic Science in Hearing and Its Disorders. His grant was entitled "Innovations in monitoring ototoxic changes using DPOAEs." Dr. Dhar studies the sounds created within the inner ear, then examines their behavior under a variety of conditions. By understanding the physiology involved, it is hoped that better diagnostic tests may be able to be designed to test for hearing loss.

Hearing loss is a common side effect of chemotherapy using agents such as Cisplatin, which is otherwise a very effective treatment for various types of cancer. The effects of Cisplatin on hearing vary vastly between individuals. If a change in hearing can be reliably detected during the course of chemotherapy, the medical team can often make appropriate changes to the treatment, thereby sparing hearing and preserving quality of life. Thus accurate and early detection of chemotherapy related changes to hearing function is critical.

With funding support from the American Hearing Research Foundation, we were able to put into practice a novel method for monitoring hearing function during chemotherapy. We have developed a system that can accurately measure changes at the very basal end of the inner ear (cochlea) using very high frequency sounds. Delivering these high frequency sounds accurately to the ear was itself a technical challenge that had to be overcome. With the tools in place we developed a new method for measuring distortion product otoacoustic emissions – sounds that are produced in the inner ear. We record these sounds in the ear canal using a miniature microphone. While these sounds have been recorded for other clinical and research purposes for decades, the support from the American Hearing Research Foundation allowed us to modify the recording method in an important way.

In our new method of recording distortion product otoacoustic emissions, we are able to adjust the sounds to match the physical properties of the portion of the cochlea or inner ear that we are evaluating. Our initial tests indicated that this modification resulted in larger otoacoustic emissions in normally functioning ears and was still sensitive to damage to the ear. Once satisfied with this initial evaluation, we were able to use the support from the American Hearing Research Foundation to evaluate the new method on patients undergoing chemotherapy at the University of Illinois at Chicago. Initial results are extremely promising with clear indications of changes in inner ear function evident in the new test well before it is evident in traditional tests. We have completed data collection from a group of patients undergoing chemotherapy and an age-matched group of individuals with normal hearing function. Rigorous statistical tests are being performed on the data set and we hope to publish the results in a scientific journal in the very near future.

For more information on Dr. Dhar's research and the Auditory Research Laboratory, please visit <https://goo.gl/43VEqj>.

*Dr. Dhar has since become a member of the Foundation's Research Committee 

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Community Health Charities



COMMUNITY
HEALTH CHARITIESSM

The Community Health Charities' mission is to unite caring donors in the workplace with our nation's most trusted health charities. Through their professional staff network in markets across the country, they can connect employees in the workplace with the programs and services of nearly 2,000 vetted and trusted health charities, including the American Hearing Research Foundation.

In 1957, twelve national health charities banded together to create the National Voluntary Health Agencies™ (NVHA), creating what is known as a federation. In 1983, the idea of a federation also became appealing to corporations in the private sector who wanted to make it easy for their employees to give to local charities. Similar to the public sector, 13 national health charities banded together to form the Combined Health Appeal® (CHA) to provide support and services to private sector corporations and conduct workplace giving. In 1998 NVHA & CHA merged, making Community Health Charities the largest workplace giving collaborative with a focus on health issues. Over the past five years, Community Health Charities has distributed more than \$400 million to its member charities. 

Social Media

In addition to funding research into hearing loss and balance disorders related to the inner ear and to educating the public about these health issues, the Foundation is committed to improving its social media presence. Recently, the Foundation applied for and received a \$900 grant from ActionSprout to boost its engagement on Facebook. Nearly 7,000 organizations applied and the Foundation is one of 2,000 organizations that received credits as part of the project. Both ActionSprout and Facebook are committed to finding ways to help nonprofit organizations get the most out of their Facebook efforts. You can learn more about the project, criteria used to select the recipients, and the makeup of the recipient pool here: <http://actionsprout.com/ad-credits-faq>. Be sure to like the American Hearing Research Foundation on Facebook at: www.Facebook.com/HearingResearch. Please also follow the Foundation on Twitter at: www.Twitter.com/HearingResearch. The Foundation encourages Twitter users to utilize the hashtag #AHRF.



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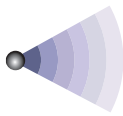
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