

Impulse Noise Produced By Weapons: Implications for Hearing Conservation

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There is a national trend towards the deployment of AR-15 rifles among law enforcement officers. For specialized units, short-barreled AR-15 rifles provide added maneuverability for indoor engagements such as breaching while serving

warrants, responding to active shooters, or in urban settings. The trend towards the use of rifles for added accuracy and longer engagement distances comes with additional sound pressure levels associated with high-velocity projectiles. Relative to pistol cartridges, rifle ammunition is chambered at higher pressures and consequently produces significantly higher sound levels when measured at the same distances or with higher caliber rifles and supersonic ammunition. These levels are further increased when barrel length decreases.

The optimal strategy for measuring impulse noise, such as that produced by firearms, has been the topic of significant discussion. Brinkmann (2000) provides an excellent overview of the challenges, particularly the issue of impulse noise not falling squarely

in this issue

Presidential pEARspectives	3
New NHCA Executive Director, Kimberly Schwartz	5
Call for Papers 2015 NHCA Conference Letter	9
Students' Corner	10
NHCA Scholarship Foundation News	11
Call for Nominations for 2015 NHCA Officers	12
Commercial Member Spotlight	13
Changes to HIPAA Privacy and Security Rules	15
What Goes Around Comes Around: The Next Generation of the OHC Standardization Exam	16
CAOHC Hearing Conservation Manual, 5th Edition	17
NHCA Liaison and ANSI Representatives Activity Report	19
CAOHC/NHCA2014 Remaining Webinars	23
Membership Spotlight	24
Remembering Linda Pink	28
Celebrating Achievements in Hearing Loss Prevention	30



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Spectrum is available without charge to NHCA members in all categories. Anyone interested in publishing in Spectrum should contact Kimberly Schwartz at the NHCA office.

The mission of the National Hearing Conservation Association is to prevent hearing loss due to noise and other environmental factors in all sectors of society.



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presidential pEARspectives

Summer 2014 President's Message

beth.a.cooper@nasa.gov

As this is my first column as NHCA President, I reviewed the archives of *presidential pEARspectives* columns to find inspiration in the writings of my presidential predecessors. A recurring theme, which I am happy to sustain, is the grateful realization that spring (and, now, summer) has finally arrived!!

I've chosen to approach my term as NHCA President as an opportunity to focus for one short year on strengthening the Association to meet future challenges that are now only incubating in the dreams of those who will follow me. I view my leadership role in NHCA through the lens of a 30-year career public servant, which is to say that I feel a strong sense of responsibility for ensuring that the Association's structure, processes, and culture are healthy and sustainable—*safe and sound*.

The Presidential role is primarily one of active and responsible stewardship: to oversee operations, provide direction where needed, proactively address challenges, and ensure that concerns brought by members receive attention that leads to a fair, balanced, and well researched resolution.

To that end, my responsibilities and intentions for my term as your President are as follows:

- ♦ Increase the diversity of our membership to reflect the breadth of professional disciplines, industry sectors, and job roles represented in the field of hearing loss prevention;
- ♦ Establish a strong marketing and public relations organization and capability within the Executive Council;
- ♦ Exercise the full capabilities of the Membership Services Council by integrating and coordinating the efforts of the six Member Delegates and Director of Membership in membership recruitment and retention efforts targeted to our various membership constituencies;
- ♦ Strengthen and further develop our relationships, partnerships, and collaborative endeavors with affiliated organizations through our network of Liaisons;
- ♦ Achieve a balanced budget that can serve as a template for the future;
- ♦ Promote a culture of hospitality and inclusiveness that encourages new members and first-time conference attendees to become involved in the work of the Association;
- ♦ Ensure transparency, impartiality and freedom from commercialism and bias in all decisions and processes that affect NHCA-branded activities and products; and
- ♦ Promote the legal, financial, and ethical interests of the Association.

During the past four months since our annual conference (the first 1/3 of my term) efforts have focused primarily on tailoring our infrastructure to better promote the realization of these goals. I'm happy to be able to report the following:



Beth Cooper
President

- ♦ A robust and capable team is in place to assist the Director of Marketing and Public Relations with developing marketing materials and campaigns and with promoting NHCA-developed content and relevant external items via our social media platforms. Please check out our increasingly active presence on Facebook, LinkedIn and Twitter, and be sure you're signed up so you get the news and can participate in the discussions!
- ♦ An NHCA membership-recruiting flyer targeted to nurses—our most underrepresented membership constituency—was developed by our Membership Services Council and distributed, via coordination by our AAOHN Liaison, in conference bags at the American Association of Occupational Health Nurses (AAOHN) conference in early May.

- In total, there are 48 leadership positions (e.g., Task Force Chair, Liaison, etc.) that now report to the Executive Council, thus ensuring that all NHCA-branded and sanctioned activities and products are developed and launched under the oversight and responsibility of the Executive Council.
- A membership-wide call for volunteers last month filled all but one of the openings for new and transitioning task force chairs and helped populate new task forces. In particular, new task forces on Audiological Referral Criteria (for Professional Supervisor review in occupational hearing conservation programs) and Licensing and Ethics Issues in Audiology (“telepractice”) have been convened; their work is expected to result in official NHCA position papers, one of the association’s most valuable contributions to the wider hearing conservation community.

Finally, in April, we bid a fond farewell to our Executive Director Erin Erickson, who is now engaged in new career adventures in Atlanta, and we enthusiastically welcomed Kim Schwartz, who was hired by IMI to be our new ED. Jesse Haynes, an account executive on the IMI team, served as our interim ED for a few weeks to help manage the transition, assisted by the full IMI staff, including Nicole Plese and Gary Leeper, IMI’s CEO. During this transition, I’ve learned a lot about the range of impressive capabilities of our management firm and the often-silent “behind-the-scenes” work that keeps our day-to-day operations running smoothly. I’ve invited Kim to share my *presidential pEARspectives* space during my term and to report on some of the management office activity and accomplishments from the Executive Director’s perspective.

Our *Spectrum* Editor encouraged me to share some information in my first *presidential pEARspectives* column about how I interpret my call to a vocation as a hearing conservationist. I think that all hearing conservationists find themselves in this position at least occasionally, and, as we conduct hearing conservation training, counsel employees who have suffered noise-induced hearing loss, advocate for appropriate workplace interventions, or champion the purchase of “low-noise” equipment, we become quite accomplished and articulate advocates of hearing loss prevention in all its manifestations. However, in these venues, the focus is not on our own personal motivations, although we sometimes try and tease out what might provide a compelling motivation for a particular employee to protect his or her own hearing. As a

Course Director of CAOHC-approved Occupational Hearing Conservation Certification courses, I try to foster this personal approach by assigning “homework” on the first night of the course that requires students to think about and choose their “favorite” sound and then share and discuss its significance with the class during the opening session the next morning. I challenge myself to come up with new favorite sound examples for myself each time I teach the course, and, for purposes of brevity, I intentionally limit those examples to recognizable and common experiences like “the sound of the coffee maker when the coffee is ready.” I’ve never shared my *truly* favorite sound, though, because it is so personal, and it really needs to be *experienced* to be appreciated. In the spirit of sharing something personal in this first column, I will offer two YouTube links that convey the experience of singing Choral Evensong, a sung service that is part of the Daily Office of the Anglican (Episcopal, in the USA) tradition. I’m fortunate to be able to sing Choral Evensong on a regular basis at Trinity Episcopal Cathedral in Cleveland, where I have sung in several choirs for almost 10 years. There are hundreds, if not thousands, of musical settings of the two canticles that make up the Choral Evensong service, so the music, and the choral experience, can be different every week. Here is a setting of the [Magnificat](#) by Orlando Gibbons (1583–1625) and a setting of the [Nunc dimittis](#) by Thomas Weelkes (1576–1623), both sung by the Trinity Chamber Singers. If you’ve read (and listened) this far and are curious, send me an [email](#), and I’ll be happy to tell you more.

Beth A. Cooper

Beth Cooper
NHCA President



New NHCA Executive Director, Kimberly Schwartz

nhcaoffice@hearingconservation.org



Kimberly Schwartz

Have you ever wondered where you are sending your National Hearing Conservation Association membership dues? Turns out, there is a lot behind the NHCA address.

Behind the address is Interactive Management Incorporated, a full-service association management company that has helped associations like the NHCA for more than 40 years. IMI has established a successful long-term relationship with the NHCA through ongoing communication and unparalleled support. Through their association management expertise, IMI has provided the NHCA assistance with marketing, membership growth, financial management, conference planning, and acted as a resource for all association needs.

IMI, the NHCA conference chair and volunteers have planned and executed seven annual NHCA conferences from Florida to Nevada. The first conference IMI assisted with was held in 2007 in Savannah, Georgia. IMI is already working to plan the 2015 conference in New Orleans, Louisiana and the 2016 conference in San Diego, California.

The NHCA website is also managed by IMI. Sections of the website like the membership directory are all updated and posted online by the IMI staff. Make sure to check out the updated 2014 membership directory and 2015 conference information at www.hearingconservation.org.

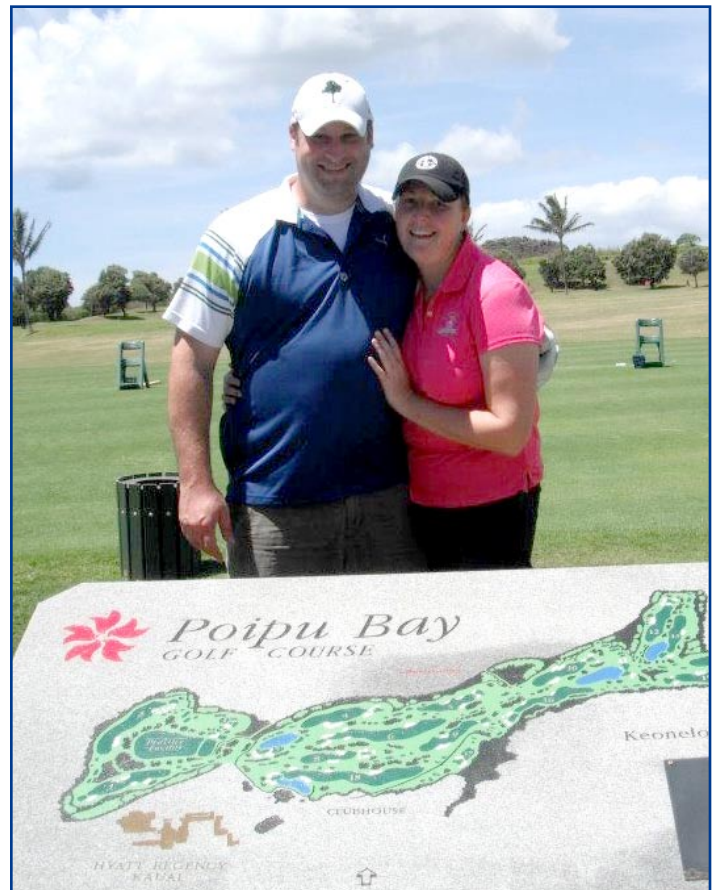
When contacting IMI, you are connected with the NHCA Executive Director. This position is held by an IMI staff member selected to be the direct contact for the NHCA. Erin Erickson served in this role for over five years and was greatly appreciated by the membership for helping manage the operations of the NHCA. Erin recently left IMI to pursue her career aspirations in Atlanta, Georgia. She will be missed by the NHCA and its members, who always looked forward to seeing her at conference every year.

Kimberly Schwartz was hired by IMI in May and is taking over for Erin in the management of the NHCA office. Schwartz

comes to IMI from the Colorado Women's Golf Association with eight plus years of non-profit management experience. While at the CWGA, Kim dedicated her time to supporting a membership of over 17,000 and promoting women's golf in Colorado. Schwartz' extensive experience with non-profit management has allowed her to wear many hats - planning small and large events, managing marketing efforts, developing membership value-add programs, creating content for electronic newsletters, developing and maintaining budgets, and leading volunteers. Kim received her Bachelors of Science degree in marketing with minors in public relations and communications from the University of Wyoming on a golf scholarship.

"I am excited to bring my creativity, passion, and enthusiasm to the NHCA," said Schwartz.

Please do not hesitate to contact the NHCA Executive Director at 303-224-9022 or nhcaoffice@hearingconservation.org for assistance with your membership.



within acoustics, but rather under the realm of fluid dynamics, gas dynamics, and shock waves. Applied to rifles, this is due to the rapid expansion of gas into the atmosphere when the projectile leaves the muzzle which forms a spherical and often supersonic pressure wave. The chamber pressure inside an AR-15 barrel is rated in excess of 50,000 PSI and standard ammunition, depending on barrel length can have exit velocities as high as 3,200 feet per second.

In order to assess potential auditory risk, multiple essential parameters must be measured. These include peak overpressure, rise time, time-duration, impulse noise spectrum, and impulse noise energy (Brinkmann, 2000). Some of these properties are easier to measure than others, and the technical challenges have been well summarized by Rasmussen et al. (2009). Factors such as primer explosion and gas leak also influence the waveform, and may need to be considered as part of the overall sound source generation and propagation (Beck et al., 2011). Propagation does not occur equally in all directions, with forward propagation being much more significant than backwards propagation and right-left propagation being approximately equal, until the shooter's head is factored in as a variable, at which time the head shadow effect reduces right or left ear sound pressure level

measurements depending on shooter handedness and shooting style (Rasmussen et al., 2009).

One of the first considerations in measuring weapon discharge is the microphone. Rasmussen et al. (2009) carefully describe the effects of changing the direction of the microphone, from pointed toward the direction of the sound source (0 degree incidence), resulting in an increased sound pressure gradient in front of the microphone, to perpendicular to the direction of sound propagation (90 degree incidence), which allows sound to pass over the diaphragm but can modify the frequency input to the microphone. MIL-STD-1474D stipulates that transducers with a blunt cylinder shape "shall be positioned with the sensing surface facing up if possible," (MIL-STD-1474D REQUIREMENT 4, 1997). The effect of incidence angle has been carefully explored by Moreland and Garinther (1965). However, relevant to this discussion, it is worth noting that free-field microphones are designed to be pointed at a sound source, whereas pressure microphones are intended to be pointed perpendicular to the sound source. In field tests, we have used PCB electronics microphones of both types (free field: 378C01; pressure: 378A12), both of which have significant dynamic ranges appropriate for

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measurements of many (but not all) firearms. The impact of rotating either microphone by 90 degrees, into the “incorrect” orientation per the manufacturer guidance, has been approximately 2-dB difference in the measured peak sound pressure level.

In addition to careful microphone selection, pre-amplifiers, common to high intensity microphones, can and often do reduce the dynamic range over which microphones can respond (for review see Rasmussen et al., 2009). Thus, while best practices dictate a microphone that is capable of transducing signals up to 170 dB SPL for occupational noise and up to 195 dB SPL for weapon noise (Kardous et al., 2005), to the best of our knowledge, there are no commercially available condenser microphones that are capable of accurately transducing impulse sounds exceeding a maximum of approximately 180-184 dB SPL.

A second issue of fundamental importance is the selection of the recording device. It is not difficult to find examples of sound level meters being used to measure s firearm discharges (Branch, 2011; Guida et al., 2011). However, not only are the microphones unlikely to have adequate dynamic range to capture the extremely high level transients produced by a firearm discharge, but the sampling rate may also grossly underestimate the true sound pressure level. Most commercially available and professional sound level meters have a sampling rate on the order of 50 kHz (one sample every 20 microsec). This is significantly lower than the recommended 200 kHz sampling rate (one sample every 5 microsec) identified as best practice (Kardous et al., 2005). In field tests, we have used both a Larson-Davis model 831 sound level meter set for impulse noise and a Pulse spectrum analyzer (3052-A-030, Brüel and Kjær) with a 256-kHz sampling rate. A comparison of both systems demonstrated approximately a 6-dB increase (or more) in the measured sound level when using the Pulse system relative to the sound level meter.

Over the past several months, we have been evaluating the sound pressure levels associated with varying AR-15 barrel lengths near the muzzle and at the level of the shooter’s ear; common locations in law enforcement for both the operator and other officers when deployed as a team (Le Prell et al., 2014). As part of an active collaboration between academia and local law enforcement, we have begun a systematic evaluation of the efficacy of suppressors (commonly called “silencers”) to determine the extent to which these devices can attenuate sound levels at a shooters ears, and parallel to the muzzle, positions where other members of the law enforcement team might be expected to be located. Our results, using a 256-kHz sampling rate, are showing significantly higher sound pressure levels at all unsuppressed barrel lengths relative to previous reports that used lower sampling rates. Sound pressure at the shooter’s ears decreased as weapon barrel length increased, a finding that is

intuitively appealing. Specifically, as the barrel becomes longer, the point of discharge is further from the shooter ears, and sound levels are decreased. Conversely, as the barrel becomes shorter, the point of discharge is brought closer to the shooter, and sound levels are correspondingly higher. This is problematic, given increasing use of short-barreled AR-15 rifles for improved maneuverability by law enforcement. Particularly worrisome from a hearing conservation perspective, the higher sound pressure levels that we have measured may still underestimate the true sound pressure levels as certain rifle combinations produced sounds that exceeded the physical limits of condenser microphone technology, overloading the PCB 37812 microphone, with an upper dynamic range of 180 dB SPL.

It is beyond the scope of this brief report to detail our findings to date with suppressors. We do however point to one important observation. The peak sound levels produced by suppressed AR-15s, a weapon system that is commonly used by law enforcement personnel, have not been reduced to 140 dB SPL using any combination of barrel length and suppressor, at any location drawn from shooter ear and 1 meter left of the muzzle. However, it is important to note that suppression generally decreased unsuppressed peak levels by 5-20 dB, a finding in support of suppressor use. In *Figure 1*, we illustrate time waveforms for an unsuppressed AR-15 discharge,

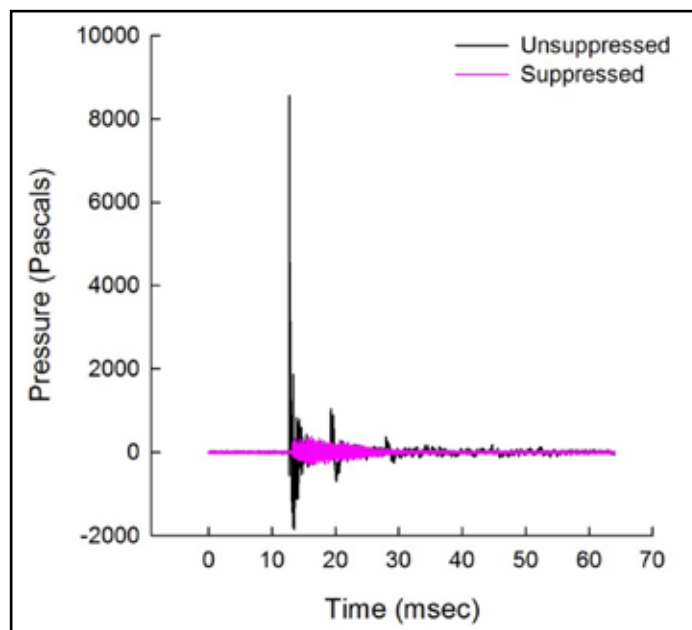


Figure 1. The time waveform for a single discharge from a 16" AR-15 is shown, with sound levels shown for both an unsuppressed and a suppressed condition. Levels were measured 1 meter left of the muzzle with the muzzle and microphone both fixed at a height of 5 feet 3 inches above the ground. Samples were acquired at a rate of 256,000 Hz using a Brüel & Kjær 3052-A-030 PULSE system in combination with Brüel & Kjær LabShop, Data Recorder, and Reflex software for waveform analysis. This specific waveform was acquired using a PCB piezoelectric pressure sensor (Model 113B27), as we have found that unsuppressed weapon discharge saturates recordings obtained using a PCB transducer microphone despite a manufacturer provided upper limit of 180-dB SPL (Model 378A12).

and a suppressed AR-15 discharge, for discharges produced from a more conventional platform, the 16" barrel length. Occupational Safety and Health Administration guidance states that, "Exposure to impulsive or impact noise should not exceed 140-dB peak sound pressure level," (OSHA, 1983). Other organizations set this limit at 140-dB C-weighted SPL (American National Standards Institute, 1996) but these limits are largely considered outdated and incomplete (Kardous et al., 2005). New models have been proposed, such as the Auditory Hazard Assessment Algorithm for Humans (AHAH) which is a computer-based model that was developed by Price and Kalb (Price & Kalb, 1991b; Price & Kalb, 1991a; Price, 2007), but there is an urgent need for additional data assessing the validity of this and other models used to predict the risk of hearing loss from a given noise insult (Smootenburg, 1982; Smootenburg, 2003). We agree with Starck et al. (2003), who have stressed the urgent need for a "single number" for noise risk assessment, although we note that with the known time-intensity trading relationship for occupational noise, it is unlikely that there will ever be a single number used to assess risk, as the total risk will always be a function of both time and level. In the case of impulse noise, this might be better extrapolated as number of impulses and level, but even that fails to capture the full relationship as the pattern of distribution of impulses over time clearly influences the hearing hazard (Danielson et al., 1991). Perhaps laboratory based studies assessing temporary threshold shift after lower level impulses will be helpful in providing some insight about the relative importance of different acoustic features within an impulse noise signal (following models such as those used by Spankovich et al., 2014), but any relationships established using small temporary threshold shift tests may not translate to more robust exposures that result in immediate

permanent threshold shift, such as an unsuppressed, unprotected, unexpected weapon discharge. Given the current incomplete state of understanding of noise risk from firearm noise, and the incomplete reduction of sound levels by suppressors, earplugs and earmuffs must remain a first and foremost consideration for protection of human hearing during hazardous impulse noise exposure.

In summary, there is a significant acoustic overpressure danger associated with unsuppressed discharges of rifles and while "silencers" were effective at reducing peak SPL, these did not provide sufficient suppression for use without hearing protection. The widespread adoption of shorter-barrel rifles, which increases sound pressure levels at the shooter's ears, carries increased risk factors for law enforcement officers related to long-term hearing health. Further experiments are needed to determine optimal barrel length/suppressor and weapon operating mechanism combinations for appropriate hearing conservation strategies.

Acknowledgements. The data in Figure 1 were collected in a study that used equipment purchased by the Hearing Research Center at the University of Florida, facilities and equipment from the High Springs Police Department and the Gainesville Target Range facility. The authors gratefully acknowledge the contributions of Ryan Scott and Christopher Spankovich to the data collection process. In addition, we are grateful for equipment loans and technical support from Brüel & Kjær, especially Jim Wyatt, Gert Nystrup, and Alfonso Moreira. We also thank David Butcher of the Alachua County Sheriff's Office for volunteering his time, and Mark Ocepek and Steve Bottcher from the Gainesville Target Range for donating their time, facilities, and suppressors to this study.

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This is a friendly reminder that there are just over 30 days remaining until the August 15th Call for Papers submission deadline for the 2015 NHCA Conference. Please [CLICK HERE](#) for more information and links to submission form.

The Call for Paper process will ask you to complete information on the following items so please be prepared:

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[AAOHN Educational Planning Tool](#) for primary presenter (required by AAOHN CNE credit approval)
[ASHA Conflict of Interest Forms](#) for primary presenter and all co-presenters (required by ASHA for CEU approval)
[NHCA Speaker Agreement Form](#) for primary presenter and all co-presenters (confirms your understanding and agreement of all NHCA policies)

If you have any questions or need further assistance please contact NHCA at 303-224-9022 or nhcaoffice@hearingconservation.org.

Best regards,
Jim Jerome
2015 NHCA Conference Chair



Students' Corner

by Rachel E. Bou Serhal, MSc
Rachel.Bou.Serhal@etsmtl.ca

If you are from anywhere near Montreal, Quebec you know how we have been desperately waiting for this spring to come and stay. On one of the first beautiful days out, I took my bike and rode to one of the nearby parks. Without even thinking about it, as soon as I got there, I pulled out my mp3 player and started looking for something to listen to. As I was searching for what music I was in the mood for, I could hear the melodies that other life around me was creating.

I remembered the presentation when Elliott Berger presented Gordon Hempton with the media award at this year's annual NHCA meeting in Las Vegas. The talk reminded us how rarely we just sit and listen to the sounds around us and how scarce silence is these days. I put my mp3 player back in my bag, lay down, and listened. I tuned in to the soundtrack created by the breeze rustling the newly formed leaves on the trees, the birds chirping to declare their excitement for spring, and the sound of the splashing water in the fountain. I lay there and listened, embracing all the sounds that made up my reality, appreciating that my ears are healthy enough for me to hear them.

It is amazing how much I have gained from the two NHCA meetings I have attended. I have learned everything from the basics of hearing conservation to new habits that help me better appreciate my environment and my hearing health. This year as Student Delegate, I have the privilege of representing you, the students of NHCA. My role is to connect with you, making sure your needs, desires, and expectations as a member of the NHCA are met.

Here is a little bit about myself and how I came to be part of the NHCA. I am a PhD candidate in Electrical Engineering, working on communication in noise at the University of Quebec in Montreal under the supervision of Dr. Jeremie Voix. The first year I attended NHCA was in 2013 in St. Petersburg, Florida. Since I was still somewhat a novice in the area of hearing protection and conservation Jeremie recommended I attend the Basics Workshop (offered every year). The knowledge I gained from listening to the talks given by experts in the field is invaluable. It has helped me understand my project and gave me a new perspective to work with.

The best part about my first NHCA meeting was the welcoming feeling I received from all the veteran NHCA members. Having also volunteered that year, I had the opportunity to connect with



Rachel E. Bou Serhal

some key members of the NHCA that I could not wait to see again at the following meeting. This is why last March when the Student Delegate position opened up, I could not resist but take it. In this role, my mission is to make sure you feel just as welcome as I did when you attend the NHCA meetings. I also want to ensure that you take advantage of all the opportunities that you have in terms of becoming an integral member of this wonderful organization.

As a student, the easiest and fastest way to get involved is to volunteer at the NHCA conferences. A few hours of volunteering not only allows you to meet key members but (thanks to April Labelle) will also get you a discounted registration fee. Another way of contributing would be by getting involved with one of the many task forces that make up backbone of the NHCA. Depending on your skills, your availability, and your interests there will most likely be a task force that can gain from your involvement.

It is important to keep in mind that the people at the NHCA want to make sure that our voices as students are heard. Many new adjustments have been made to the NHCA because of the comments and suggestions given by students. For example, poster sessions this year were given an allotted amount of time because feedback from students last year about the poster session was unsatisfactory. To encourage volunteering, offering a discounted fee for student volunteers was another novelty this year. Your contributions to the NHCA help it grow and evolve for the better.

I am here and my ears are open and ready to listen to all of your suggestions, comments, and concerns.

Rachel E. Bou Serhal, MSc
NHCA Student Delegate

NHCA Scholarship Foundation News

by Vishakha Rawool, President, Scholarship Foundation of NHCA
VWRawool@mail.wvu.edu

The current foundation members are Vishakha Rawool (President); John Allen (Secretary); Nancy Green (Treasurer); Amyn Amlani, Chandran Achutan and Sarah Ervin (Directors); Kim Schwartz (Executive Director); and Madaline Parrill (Student Member).

During the 2013-2014 period, the Scholarship foundation expanded opportunities for donors by revising the donation link. The foundation gave a research award to Alyssa Lerner (University of Northern Colorado at Greeley, USA) and three conference awards to following students: Britany Barber (University of Iowa, USA), Kyle Geda (Western Michigan University, USA) and Vincent Nadon (École de Technologie Supérieure, Canada). These students were recognized during the NHCA Business meeting and the luncheon awards ceremony at the 2014 conference. In addition, one of the pages of the 2014 *Spectrum* conference supplement was devoted to recognize the student award winners. We wish to thank the following donors for making these awards possible:

- Carolyn Tolley
- Marjorie Grantham
- Nancy Green
- Iris Langman
- Vishakha Rawool

Special thanks are also due to all the donors who donated items to the silent auction event, those who purchased items from the silent auction, those who bought tickets for the 50/50 raffle, and participants in the golf tournament and the NHCA Casino Night fundraiser event. In addition we would like to thank **Casella** for donating a sound level meter and **Honeywell Safety Products** for donating several earphones to give away as prizes to the top Casino Night winners. Special thanks are due to Michael Stewart who organized and managed the golf tournament.

Following the selection of awards last year, the board discussed potential improvements to the award process. Based on that discussion, three major changes to the student research awards (SRA) have been implemented this year. To ensure that the award winning research will be presented at one of the NHCA conferences, one or more students or recent graduates who have completed high quality research projects will be selected to receive the SRA. The award will be given to the student at the NHCA conference during which the research will be presented by the student. The award amount will be \$500.00 + up to \$ 2000.00 for travel and conference registration expenses. This amount is similar or larger than the amount given by other organizations such as the American Academy of audiology.

During the 2014-2015 period, Robert (Bob) Dobie will be serving as the chair of the Student Research Awards Committee and John Allen will be chairing the Student Conference Awards committee. Updated documents related to these awards are available on the NHCA website.

Gold Sponsor (donation of \$1000 or more)

- American Academy of Audiology (AAA) Foundation.

We also want to thank the AAA foundation for donating additional \$500 in recognition of the Outstanding Hearing Conservationist Award received by Dick Danielson.

Silver Sponsors (donation of \$500 or more)

- James and Vera Lankford

Bronze Sponsors (donation of \$250 or more)

- Benson Medical Instruments
- Elliot Berger
- Mary McDaniel
- Deanna Meinke

Lodge/Support/Educate A Student/SRA/SCA award Sponsors

- James Jerome
- Lynne Marshall
- Jillyen Curry-Mathis

Call for Nominations for 2015 NHCA Officers

by Kristy Casto
kristycasto14@gmail.com

NHCA members have an opportunity to provide nominations (including self-nominations) for elected offices by submitting candidate names. An independent nomination endorsement by no less than 10 full members will automatically be placed on the election ballot, while nominations from a single member will be considered by the Nominations Task Force. Please submit any nominations to the NHCA office at nhcaoffice@hearingconservation.org by **August 30, 2014**.

Members interested in serving on the NHCA Executive Council are encouraged to contact Nominations Task Force Chair, Kristy Casto, or any other member of the Task Force.

Kristy Casto	kristycasto14@gmail.com
Beth Cooper	beth.a.cooper@nasa.gov
Joel Jennings	joel.jennings72c@gmail.com
Dick Danielson	richard.w.danielson@nasa.gov
Nancy Vause	nvause@gmail.com

The six positions that will be elected this year are:

President Elect: This position is a three-year commitment (year one as President-Elect, year two as President and year three as Past President). Nominees are required to have previous experience on the NHCA Executive Council.

Director of Communication: This is a two-year commitment and a voting position on the Executive Council. The Director of Communication is responsible for the *Spectrum* newsletter, for website development and management, for NHCA internal and external communications, and for review of materials prepared by NHCA.

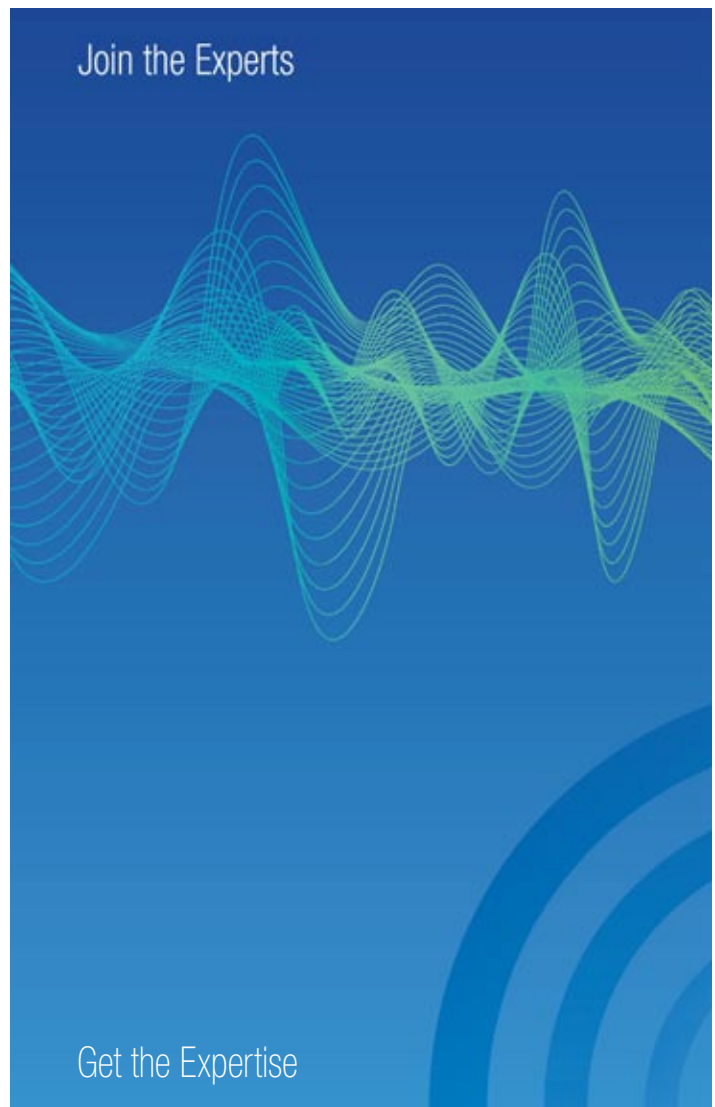
Secretary/Treasurer: This is a two-year commitment and a voting position on the Executive Council. The Secretary/Treasurer serves as the chief financial officer of NHCA, and documents all official meetings of NHCA.

Member Delegate: This is a two-year commitment and a voting position on the Executive Council. The Member Delegate is elected from the Individual Member constituency. The Member Delegate represents the interests of the Individual Members and participates in Executive Council deliberations as a voting member. The Member delegate position is part of the Membership Services Council, led by the Director of Membership.

Commercial Delegate: This is a two-year commitment and voting position on the Executive Council. The Commercial Delegate represents firms who make or distribute products related to hearing conservation, and serves on the Membership Services Council to recruit and retain commercial members.

Professional Services Provider Delegate: This is a two-year commitment and voting position on the Executive Council. The PSP Delegate services as the representative for those members of NHCA who provide professional hearing conservation services.

All elected members of the Executive Council are expected to attend three face-to-face meetings annually. Important budget discussions and deliberations are typically held during the summer meeting. Meetings are also scheduled prior to and following the annual conference at the conference site. Additional Council activity is routinely managed via conference calls and e-mail communications.



NHCA



Commercial Member Spotlight

Robert M. Ghent, Jr, AuD/FAAA/CCC-A

Research Audiologist/Manager, Howard Leight Acoustical Testing Laboratory

Honeywell Safety Products

robert.ghent@honeywell.com



Q1. Share with the readers how you came to be involved in hearing loss prevention.

I've been a musician my whole life; everything from Bach to rock, as they say. In high school I discovered electronic music and got interested in the technology of music and sound. My first job after high school was working for a sound reinforcement company—what could be better than hanging out backstage

with rock stars? We provided concert sound for regional rock shows and national tours. Some of the festival-type shows we did lasted all day and into the night. Back then, we didn't have audio technology like steerable

vertical loudspeaker arrays and in-ear monitors, so the only way to provide audio coverage for 100,000 fans was to make it really loud. And the only way for the band to hear their music over the 100,000 screaming fans was to make the stage monitors really loud as well. After 16 hours or so of 109 dBA-plus sound levels, we still had to strike the stage, pack up all that

gear, load it out, drive it back to the shop, and stow it for the next show. I didn't mind the exhausting physical labor, but I dreaded doing it with a threshold shift, my ears ringing, and feeling like my head was in a vise—what's come to be known as a 'hearing hangover'. That was when I first started questioning what could be done to deliver on the audience's expectations without compromising my ability to continue enjoying my work in music and audio.

Q2. What is your favorite sound and why?

When my oldest daughter was in 5th grade, she auditioned for the chorus at her elementary school. I was in my Master's program at Brigham Young University at the time and my class schedule afforded me time and opportunities to work with the music teachers at the school. I started recording the chorus concerts, one each winter and spring. I've come to love the sound of children's voices singing; solo, unison, or in harmony! Their voices are unadorned and without affectation; simply pure. The kids work hard at musicianship when they sing in the chorus, but the purity of their sound, their expression, and their joy is absolutely effortless! I've recorded that chorus twice every year for nearly the last 25 years. I go back to those recordings over and over again.

Q3. What are your hobbies?

Did I mention audio and music? Actually, I also enjoy the water, having grown up on the beaches of Los Angeles County, my bicycle, and most of all, my family, including my 11 grandchildren. Cooking has become a favorite pastime, especially when the family is involved—unfortunately, I enjoy eating, too. The past few years I've also felt compelled to read more since inheriting a library of over 6,000 volumes from my in-laws, and that,



in turn, has kindled an interest in writing, which has always been a part of working in research, but I'm only recently getting around to trying my hand at non-technical prose (and maybe a little poetry). I'm hoping it results in a more readable and less-boring account of my family history, another recent interest. I'd like it to be more than a dry chronological list of events and facts.

Q4. Has your interest in hearing loss prevention reached into your hobbies in any way?

After graduate school I started an audiology practice in Southern California. It was rather typical, focusing on diagnostic tests and hearing aid dispensing. But being back in SoCal, I also reengaged with my colleagues in the music and audio industries. This led to the expansion of my practice to create the Musician's Hearing Institute. I provided custom in-ear monitors and musician's hearing protection from partners like Sensaphonics, Westone, and Etymotic to performers like Fleetwood Mac, Aerosmith, and 311. I also offered specialized services like high-frequency audiometry to recording and audio post-production engineers.

Q5. Anything else you would like to share with the readers of the Spectrum?

Having worked on the hearing loss remediation side of audiology for so many years, it's great to be back on the hearing loss prevention side. I was a senior research audiologist for a hearing aid manufacturer for over a dozen years before joining Honeywell Safety Products. Helping people hear again was very rewarding—the sound of leaves rustling, identifying bird calls, regaining social participation, enjoying music again. There would be tears and it was very gratifying. But I always point out two truths with the most gravitas: 1) hearing aids cannot restore lost hearing; they only help people use the hearing they have remaining, and it can never be put back the way it was, and 2) you can pay, in comparatively few of today's dollars, for hearing protection now, or pay orders of magnitude more in tomorrow's dollars for hearing aids later.

Q6. What do you see for the future of hearing loss prevention?

The advent of pharmaceutical and nutraceutical treatments seems very promising, as does research into the restoration of stereocilia and hair cells in other mammals, whether stem cells or other gene manipulation. Research in these areas is in its infancy and needs to be pursued for congenital and acquired hearing loss. But as practical solutions, these are still very far-off and certainly won't be viable in my lifetime, as much as I would like this to become reality. We also need to be careful not to fall into the trap, especially in light of all the current positive press on these topics, of thinking that a pill before or after exposure to dangerous levels of noise is going to help us maintain our 18-year-old hearing sensitivity as we age. While these treatments have been shown to possibly reduce the risk of permanent threshold shift, they are not all-dancing, all-singing cures for hearing loss, and the long-term impact in humans is as yet unknown. However, because these preparations rely primarily on scavenging reactive oxygen species, or reducing their genesis, they might prove very useful when used as a prophylactic and combined with the wearing of hearing protection. This may be an especially good idea since we know people don't always fit their hearing protection properly. It's absolutely marvelous that some of these preparations show good results as 'rescue' agents when administered after noise exposure, but because life is uncertain, prevention, in my mind, is still the best medicine, and still the best reason to eat dessert first.



Changes to HIPAA Privacy and Security Rules

by Gaye Chinn
gchinn@washingtonaudiology.com



Gaye Chinn

The U.S. Department of Health and Human Services (HHS) has strengthened the privacy protections and security safeguards for health information which was established under the Health Insurance Portability and Accountability Act of 1996 (HIPAA) by issuing the Omnibus Final Rule. This rule enhances a patient's privacy protections, provides individuals new rights

to their health information, and strengthens the government's ability to enforce the law. The effective date of this rule was March 26, 2013 with a compliance date of September 23, 2013.

The Omnibus Final Rule is comprised of the following four final rules:

1. The final modifications to the HIPAA Privacy, Security and Enforcement Rules:
 - Make business associates of covered entities, such as contractors and subcontractors, directly liable for compliance with certain of the HIPAA Privacy and Security requirements.
 - Strengthen the limitations on use and disclosure of protected health information (PHI) for marketing and fundraising purposes, and prohibit the sale of protected health information without individual authorization.
 - Expand individual's rights to receive electronic copies of their health information and restrict disclosures to a health plan concerning treatment for which the individual has paid out of pocket in full.
 - Require modifications to, and redistribution of, a covered entity's notice of privacy practices.
 - Modify the individual authorization and other requirements to facilitate research and disclosure of child immunization proof to schools, and to enable access to decedent information by family members or others.
 - Adopt the additional Health Information Technology for Economic and Clinical Health Act (HITECH Act) enhancements to the Enforcement Rule, such as the provisions addressing enforcement of noncompliance with the HIPAA Rules due to willful neglect.

2. Final Rule adopting changes to the HIPAA Enforcement Rule to incorporate the increased and tiered civil money penalty structure provided by the HITECH Act.
3. Final rule on Breach Notification for Unsecured Protected Health Information under the HITECH Act, which replaces the breach notification rule's "harm" threshold with a more objective standard.
4. Modification of the rule as required by the Genetic Information Nondiscrimination Act (GINA) to prohibit most health plans from using or disclosing genetic information for underwriting purposes.

This final rule implements a number of changes to the HIPAA Rules. The Professional Service Provider (PSP) may be asking questions in general of how they are affected by HIPAA. One area that relates to PSP's who are providing hearing conservation services to employers and is addressed by HHS is the HIPAA Privacy Rule's public health provision, which permits covered health care providers to disclose an individuals' protected health information to the individual's employer without authorization in very limited circumstances: 1) the covered health care provider must provide the health care service to the individual at the request of the individual's employer or as a member of the employer's workforce, 2) the health care service provided must relate to the medical surveillance of the workplace or an evaluation to determine whether the individual has a work-related illness or injury, 3) the employer must have a duty under OSHA, MSHA, or the requirements of a similar State law, to keep records on or act on such information.

Information required by the employer in order to comply with the requirements of OSHA, MSHA, or similar State law may be disclosed to the employer without authorization. Covered health care providers who make such disclosures must provide the individual with written notice that the information is to be disclosed to his/her employer (or by posting the notice at the work site if the service is provided there).

For more information regarding the Omnibus Final Rule, see the Federal Register, 45 CFR Parts 160 & 164 at <http://www.gpo.gov/fdsys/pkg/FR-2013-01-25/pdf/2013-01073.pdf>. You may also go to the U.S. Department of Health and Human Services website at www.hhs.gov for more information regarding HIPAA. For HHS's full response to the question of disclosure of protected health information to an individual's employer, go to http://www.hhs.gov/ocr/privacy/hipaa/faq/public_health_uses_and_disclosures/301.html.

What Goes Around Comes Around: *The Next Generation of the OHC Standardization Exam*

by OHC Committee Chair J. Andy Merkley, AuD CCC-A CPS/A & Executive Director Kim J. Breitbach, CAE
info@caohc.org



J. Andy Merkley



Kim J. Breitbach

In the fall 2003 issue of *Update*, Gayle Rink, MS RN COHN-S; former CAOHC Council member representing AAOHN, announced that the content and administration of the written component of the 20-hour certification workshop would change and that the Council for Accreditation of Occupational Hearing Conservation (CAOHC) would pursue a more standardized method for administering the written exam. The objectives:

- Fairly evaluate all Occupational Hearing Conservationists (OHCs) in all CAOHC course offerings
- Enhance the credibility and the value of OHC certification
- Allow OHCs to learn through the reinforcement of course content in the written exam
- Support the Course Director's (CD) need to administer a test that effectively measured comprehension of key learning objectives

Rink also promised that "CAOHC will continue to monitor and refine the written exam component of the initial certification course in 2004 and beyond."

Continuing with those efforts, in 2009 CAOHC completed an extensive review of its COHC credentialing processes, following guidelines established by the International Organization for Standardization (ISO) and the American National Standards Institute (ANSI). In addition, a formal survey of over 20,000 hearing conservationists was administered and a formal OHC job task analysis was constructed. Each step of the process was methodical, structured, and guided by a credentialed professional testing organization. From these efforts, CAOHC has been able to align the process of training and credentialing OHCs with internationally established standards and best practices. As part of this process, CAOHC developed a standardized written examination with an administrative process that:

- Defensible and has a solid psychometric foundation
- Assesses all core information for OHCs to complete job tasks identified in the job task analysis
- Assesses OHC candidates equally, regardless of where the education is

received CAOHC will implement the standardized written exam and exam process starting on June 1, 2014. The changes will apply to all CAOHC CDs.

The number of questions and time allotment to complete the exam remains the same course length for certification and recertification will remain 20 hours and 8 hours, respectively.

The new process is, however, more formal and raises the standard of learning. Prospective OHCs are still required to complete practical examinations according to the CD standards, but are evaluated for core knowledge through a standardized written examination based on key concepts or domains, identified in the job task analysis. Although practicum timelines will remain firm, CAOHC will suggest timelines for key didactic domains that should be viewed as flexible. This change will allow CDs to spend, as much time as they feel is necessary to cover all key areas.

Author Deepak Chopra once said, "All great changes are preceded by chaos." CAOHC is working hard to avoid chaos and make this change as seamless as possible by identifying and addressing issues found during a "soft launch" of the exam in late 2013. CAOHC will continue to monitor the examination process and address issues as they arise. CAOHC is also committed to developing and providing tools and resources to help OHCs and CDs enjoy continued success. As an example, please see the article in this *UPDATE* copy concerning the pending release of the *Hearing Conservation Manual*, 5th edition.

Although the new examination process represents significant change, it is the right thing to do at the right time. CDs involved in the soft launch, reported it to be no different from other certifications and quite easy to implement. Encouragingly, the current success rate on the examination is 94%.

A core CAOHC mission is to promote hearing loss prevention by enhancing the quality of occupational hearing loss prevention practices.

Aligning the COHC credential with established ANSI and ISO standards is a step toward raising employer and regulator confidence in the COHC as a key member of the hearing conservation team.

CAOHC OHC Committee Chair J. Andy Merkley, CD Committee Chair Tom Hutchison and Executive Director Kim Breitbach have been training CDs how to implement the new process. If you have not participated in or registered for a training session, contact [Kim Breitbach](#) in the CAOHC Administrative Office. We look forward to working with you soon.

CAOHC Hearing Conservation Manual, 5th Edition

by CD Committee Chair Thomas L. Hutchison, AuD CCC-A CPS/A & CAOHC Manual Co-Editor Theresa Y. Schulz, PhD LtCol USAF (ret.)
info@caohc.org



Thomas L. Hutchison



Theresa Y. Schulz

The Council for Accreditation in Occupational Hearing Conservation (CAOHC) is proud to announce this summer's publication of the fifth edition of the CAOHC *Hearing Conservation Manual*.

Since 1973, CAOHC has worked to enhance the quality of occupational hearing loss-prevention practices. Publication of the *Hearing Conservation Manual* is a critical component of these efforts. CAOHC Course Directors use the manual to teach Occupational Hearing Conservationists (OHCs). It is the authoritative resource on occupational hearing conservation program (HCP) issues.

During the 12 years since the fourth edition was published, unique approaches to problems have emerged, new technologies have developed, and laws and regulations have changed.

In June, CAOHC will implement a new examination and credentialing process for OHC certification. As explained in an accompanying article, evaluation of the knowledge base of OHCs is based on key performance characteristics in the OHC "blueprint." As a commitment to providing appropriate resources for OHC instruction and monitoring the ever-changing hearing conservation landscape, we will introduce the fifth edition as the basic text for OHC instruction.

The basic fifth edition was a team effort. Experts in their respective fields in occupational hearing conservation wrote each chapter, which representatives from every CAOHC Council constituent group reviewed and edited. This edition is the basis for a planned advanced manual, which is aimed toward the advanced HCP practitioner. Chapters will be devoted to such subjects as fitness for duty, ototoxins and otoprotectants, and in-depth fit-testing.

Visit the CAOHC website and click the "[Volunteer Now](#)" button if you want to be involved with these or other CAOHC projects.



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NHCA Liaison and ANSI Representatives Activity Report —

by Kristy Casto
kristycasto14@gmail.com

NHCA's professional organizations liaisons and ANSI standards representatives serve as information conduits and play an important role in maintaining two-way communication between NHCA and other organizations involved in hearing conservation activities. Our ANSI standards representatives are our voice to hearing conservation-related standards reviewed by the S3 and S12 committees. Here you will find summaries of NHCA liaison and ANSI standards representative activities over the past year:

American Academy of Audiology, Dick Danielson

The American Academy of Audiology now has over 12,000 members, and Student Academy of Audiology has 68 chapters. Recent AAA activities related to hearing conservation are:

- Expansion of "DiscovEARy Zone" program (chaired by Dr. Sharon Sandridge) that has developed a display for promoting hearing loss prevention to the community by setting up the composite DZ in a local facility in the host city during AudiologyNOW! and inviting the public to visit
- Motivating audiologists, audiology students, and teachers to integrate hearing loss prevention into their practices and community outreach by conducting a Dangerous Decibels (DD)/DZ Educators Workshop to educate and train local audiologists and teachers (K-12th grade) who will go into the classroom and teach hearing loss prevention to fourth and fifth-graders
- Creation of a display for clinic waiting rooms with hearing loss prevention information on the tables; e.g., placement of earplugs and information cards at clinic front desks, equipping a table for children with hearing loss prevention games, and showing "Ear Disorders and Games" on a computer monitor.
- Creation of a display and teaching resources for health fairs; e.g., large ear model, computer with games and hearing loss simulation files, Tim Panic (a Jolene mannequin), and educational posters.
- Sponsored awards for several state science fairs (using audiologist mentors, judges, and award presenters for junior and senior high students)
- Ongoing work to address (with publications and legislative monitoring of state licensing boards) telehealth issues
- Through the AAA Foundation, continued to sponsor a \$1500 research award scholarship to the NHCA Student Scholarship Foundation

American Association of Occupational Health Nurses (AAOHN), Pegeen Smith

Nurses who participated in the 2014 NHCA annual conference were not able to receive continuing nursing education (CNE) credits from AAOHN because the AAOHN board denied NHCA's application after a disappointing and frustrating application and review process. Instead, eight nurses who attended received certificates of

attendance. As a result, a Conference CEU Task Force has been created with the NHCA's liaison to AAOHN serving as chair. The goal of the Conference CEU Task Force is to obtain CNE credits for the educational offerings being provided at the 2015 NHCA annual conference. Developing a strategic process early in the year along with a simplified application form should help us achieve this goal. Ultimately, we hope to attract more nurses to NHCA and by offering CNE credits, benefit those who attend our conferences in the future.

NHCA's liaison to AAOHN attended the AAOHN Global Summit and National Convention in Dallas, May 2014 where she presented a poster and networked.

American College of Occupational and Environmental Medicine, Bruce Kirchner

At ACOEM, Dr. Kirchner, and Dr. Eric Evenson continue work to update a guidance document concerning the "Role of the Professional Supervisor of the Audiometric Monitoring Program" document, with an expected completion date in mid-2014. Dr. Kirchner is also a representative to the CAOHC Council and was just elected new Council Chair for a two-year term.

As a post-conference event at ACOEM's annual American Occupational Health Conference, CAOHC is presenting the "Professional Supervisor of the Audiometric Monitoring Program" workshop. This is a day-long activity highlighting the knowledge and skills the Professional Supervisor should know. Additionally, the conference also is featuring a half-day "State-of-the-Art Review of Hearing Conservation", sponsored by the Federal and Military Occupational and Environmental Medicine Special Interest Section.

American Society of Safety Engineers, Bob Anderson

Founded in 1911, The American Society of Safety Engineers (ASSE) is the world's oldest professional safety society. Its more than 35,000 members manage, supervise and consult on safety, health, and environmental issues in industry, insurance, government and education; creating safer work environments by preventing workplace fatalities, injuries and illnesses. The goal of this liaison is to facilitate communication between NHCA and ASSE on issues related to noise exposure and control, hearing health and hearing loss prevention.

ASSE recently met with Abu Dhabi Environment, Health and Safety Center officials in the United Arab Emirates recently to assist them in developing the country's first Occupational Safety and Health (OSH) Strategy aimed at reducing work-related injuries and fatalities and building a preventative safety culture. Occupational noise induced hearing loss was mentioned in the top five occupational-related injuries and illnesses.

On November 5, 2012 ASSE joined the 85-3 Campaign to confront the "silent epidemic" of occupational hearing loss in the U.S. The 85-3 Campaign recognizes organizations and employers that, as part of their hearing protective strategy for workers, have adopted the 85 dBA (decibel) noise protection level.

The ASSE Professional Development Conference and Exposition, *Safety 2014*, will take place June 8-11, 2014 in Orlando, Florida. A request for reciprocal exhibit space is being considered by ASSE.

Council for Accreditation of Occupational Hearing Conservationists, Madeleine Kerr

The Mission of the Council for Accreditation in Occupational Hearing Conservation (CAOHC) is to promote hearing loss prevention by enhancing the quality of occupational hearing conservation practices, with particular focus on: a) Providing oversight and support of those who train hearing conservationists (Course Directors), those who practice hearing loss prevention (OHCs) and those who supervise OHCs and interpret problem audiograms (Professional Supervisors) and b) Increasing quality and consistency among hearing loss prevention programs.

NHCA and CAOHC developed a new webinar series of 6 presentations, building on success of the 2011-2012 educational webinar series *Hearing Loss Prevention: The Basics*. The theme is "Plugging the holes in hearing conservation programs: Promoting prevention and overcoming obstacles". The series is continuing through September 2014. ([see page 23 for more information](#))

CAOHC is fully engaging in the digital world in 2014 with a new more interactive web site, social media (Facebook, Twitter & LinkedIn), and a transition to online issues of the *Update* publication. The new on-line course titled "Noise Measurement" is available 24/7 to any professional interested in learning more about noise and noise measurement.

Revisions for the 5th edition of the CAOHC *Hearing Conservation Manual* are going well. Editors Tom Hutchison and Theresa Schultz, CAOHC members, and a host of volunteer authors are preparing a basic version of the manual that will align with Occupational Hearing Conservationist competencies.

Institute of Noise Control Engineering, Beth A. Cooper

During 2014, INCE entered into a partnership as a financial and technical sponsor of "In Pursuit of Silence," a meditative feature-length documentary about the value and dimensions of silence, our relationship with sound, and the implications of living in such a noisy world. The film will address, among other things, the growing concerns about noise pollution in our cities and how it has grown to become the second most dangerous environmental threat to our health, trailing just behind air pollution as confirmed by the World Health Organization. (NHCA has offered to provide the filmmakers with subject matter expertise related to hearing loss prevention and has provided comments on the film's early promotional materials.)

The INCE Product Noise Technical Committee is working on the development of a voluntary product noise rating and labeling scheme and process (primarily for consumer products) that will make it easier for purchasers to effectively use noise emissions as a criterion in product selection. The eventual implementation of this initiative will have a significant positive impact on the success of corporate Buy-Quiet programs.

NoiseCon '14, the annual conference of the Institute of Noise Control Engineering, will be held in Ft. Lauderdale, FL, on September 8-10, 2014. The theme of the conference is "Advancing the Technology and Practice of Noise Control Engineering." Beth Cooper will be offering a half-day seminar: "Best Practices, Emerging Technologies and Current Initiatives in Occupational Hearing Conservation," which will include special topics such as hearing protector performance evaluation and fit-testing, decision-making tools for assessing the cost of noise exposure, and "Buy-Quiet" resources for purchasing low-noise equipment.

Military Audiology Association, Amy Blank

MAA's primary event this year was co-hosting the Joint Defense Veterans Audiology Conference (JDVAC) in Las Vegas, NV at The New Tropicana Hotel from March 10-12, 2014. The theme this year was "Connected Care – A Winning Hand", and the featured speaker was Dr. Samuel R. Atcherson who spoke on hearing related technologies. SSG (Retired) Shilo A. Harris was one of the more moving featured speakers who shared with the audience his experiences as an injured soldier moving through the military and VA health care systems. SSG Harris riveted the audience with his humor and powerful stories of resiliency.

The annual MAA business meeting was held during JDVAC. The following members earned recognition:

Dr. Sharon Beamer – Doug Ohlin Founder's Award
LCDR Jason Jones – Elizabeth Guild Award
Dr. Leslie Peters – MAA Research Award

The MAA bylaws were reviewed and updated during the last year, with a Communication position added. We also assigned a new CAOHC representative, MAJ Dean Hudson and partnered with several sister organizations to oppose HR 3508.

MAA will continue the organization's mission to ensure operational readiness and quality-of-life to the fighting force and eligible beneficiaries by providing cost-effective hearing health care through state-of-the-art audiological services, including prevention of hearing loss, medical surveillance, education, and research.

MAA 2015-15 Officers are:

- President – LT Amy McArthur
- President-elect – Maj Brandon Tourtillott
- Secretary – MAJ Jillyen Curry-Mathis
- Member-at-Large – Maj Shannon Hunt
- Past-President – CPT Marvin “Joel” Jennings

JDVAC 2015 will be held in Orlando, Florida from March 2-4, 2015.

NIOSH, Thais Morata

Highlighted NIOSH activities over the past year include:

- A presentation of noise control examples obtained by the NIOSH-NHCA Safe-in-Sound Award took place at NoiseCon 2013 last August.
- NIOSH developed a new instrument (based on a NIOSH patent) to measure impulse noise and used it several times in the field at firing ranges. The instrument comes in a kit with microphones/data acquisition board/laptop and is available through Structural Dynalysis, Inc.
- A study comparing several smart phone apps with sound levels measurement equipment was presented at NHCA and published in JASA.
- NIOSH is producing two videos on BuyQuiet and one on fit test of hearing protectors.

OSHA, Alice Suter

Recent activities:

- Coordinated with the OSHA Alliance (NHCA, OSHA, NIOSH) to prepare the second webinar for the OSHA “family”, which will cover the details of the hearing conservation amendment. This webinar is tentatively scheduled for August 25, 2014.
- OSHA industrial hygienists will present requirements of the OSHA HCA and Dick Danielson and Alice Suter will provide additional explanation and present best practice for each area.

ANSI S3 Bioacoustics, Gayla Poling

The ANSI Accredited Standards Committee S3, Bioacoustics has had a very busy year. Of note, the ISO/ Final Draft International Standard (FDIS) 1999 entitled “Acoustics – Estimation of noise-induced hearing loss” was highlighted in the Winter 2013 *Spectrum*. Seven additional documents were reviewed from ISO/TC 43 for comments and vote recommendations including loudness, audiometric test methods, and reference zero for calibration. Six ballots were solicited from administrative needs to approval of procedures. Of note and most recently, approval of Doc/LB S3/720 to approve BSR/ASA S3.44-201x/Part 1 / ISO 1999:2013 Acoustics – Estimation of noise-induced hearing loss – Part 1: Method for calculating expected noise-induced permanent threshold shift (proposed identical national adoption) as a revision of ANSI S3.44-1996 (R2006).

Results of 4 votes:

- Approval of Doc/LB S3/720 – Proposal to approve BSR/ASA S3.44-201x/Part 1 / ISO 1999:2013 Acoustics – Estimation of noise-induced hearing loss – Part 1: Method for calculating expected noise-induced permanent threshold shift (proposed identical national adoption) as a revision of ANSI S3.44-1996 (R2006). (Affirmative vote)
- Approval of Ballot to Reaffirm BSR/ASA S3.45-2009 (R201x) *Procedures for Testing Basic Vestibular Function* (Affirmative vote)
- Approval of Doc/LB S3/727 for the proposed approval of BSR/ASA S3.55-201x/Part 5 / IEC 60318-5:2006 (MOD) *Electroacoustics – Simulators of Human Head and Ear – Part 5: 2 cm³ coupler for the measurement of hearing aids and earphones coupled to the ear by means of ear inserts* as modified nationally adopted international standard. (Affirmative vote)
- Administrative Letter Ballot S3/726 to change the title of S3/WG 37 approved (Affirmative vote)

Votes submitted; outcome pending:

- Vote cast in support of approving a new member (Diagnostic-Group has chosen the “Producer” interest category) to the U.S. TAG to ISO/TC 43.
- Vote in support of approval of the reaffirmation of BSR/ASA S3.2-2009 (R201x) *Method for Measuring the Intelligibility of Speech over Communication Systems*.

Documents (7) reviewed received from ISO/TC 43 for comments to the coordinating voter:

- ISO 16832:2006 “Acoustics – Loudness scaling by means of categories”
- ISO 8253-2:2009 “Acoustics – Audiometric test methods – Part 2: Sound field audiometry with pure-tone and narrow-band test signals”

- ISO 389-9:2009 “Acoustics – Reference zero for the calibration of audiometric equipment – Part 9: Preferred test conditions for the determination of reference hearing threshold levels”
- ISO 389-5:2006 “Acoustics – Reference zero for the calibration of audiometric equipment – Part 5: Reference equivalent threshold sound pressure levels for pure tones in the frequency range 8 kHz to 19 kHz”
- ISO 389-2:1994 “Acoustics – Reference zero for the calibration of audiometric equipment – Part 2: Reference equivalent threshold sound pressure levels for pure tones and insert earphones”
- First ISO/CD 532-2 (N 1223) “Acoustics – Method for calculating loudness – Part 2: Moore-Glasberg method”
- First ISO/CD 532-1 (N 1222) “Acoustics – Method for calculating loudness – Part 1: Zwicker method”

Audiology Quality Consortium, Sharon Beamer

The Audiology Quality Consortium (AQC) is a coalition of audiology member organizations purposed to collaborate on the development of audiology quality measures for use in the Centers for Medicare and Medicaid Services (CMS) Physician Quality Reporting System (PQRS) and with other health care payers. The AQC monitors the status of audiology quality measures for reporting under PQRS and other health care payers; responds to proposed rules and measure changes by CMS and other measure owners on behalf of the audiology community; educates audiologists regarding audiology quality measures and PQRS reporting requirements. The following measures are currently available for audiologists to report:

- **Measure #261:** Referral for Otologic Evaluation for Patients with Acute or Chronic Dizziness
- **Measure #130:** Documentation of Current Medications in the Medical Record
- **Measure #134:** Screening for Clinical Depression and Follow-Up Plan

The AQC meets once a month via teleconference to discuss measure development and testing. Currently under consideration are measures related to vestibular testing, functional communication, cochlear implants and cochleotoxicity.

Relative Value Committee Advisory Group

The RUC HCPAC was created by the AMA to allow for participation in the development of relative values for new and revised Current Procedural Terminology (CPT® American Medical

Association) codes within the scope of practice of non-physician health care professionals. CPT codes are used to report covered services to Medicare and other organizations. In October 2013, the RUC HCPAC decided to create separate representation for speech-language pathology through ASHA. ASHA and AAA were asked to share representation for audiology. As a result the RUC advisory group was established for the various organizations to share their perspective on procedures and subsequent coding. The group meets quarterly via teleconference and is intended to serve an educational role for the member organizations. The recent CPT codes reviewed were related to vestibular testing.

Audiology Organization Meeting

Monthly teleconference of representatives from audiology organizations to discuss issues related to advocacy, coding and reimbursement. Serves an educational role for the member organizations. Most recent discussion focused on delay in deployment of ICD-10 codes which may affect codes presented by audiology. Also under consideration are the codes for newer vestibular procedures such as VEMP.

University Academic Programs, Colleen LePrell

An NHCA liaison to university academic programs is a new position, and the primary tasks are to coordinate membership recruiting efforts among hearing conservation professionals in academia, and serve as a “hearing conservation ambassador” to relevant academic programs, as NHCA believes that these programs would benefit from information and education that NHCA can provide.

Association for Research in Otolaryngology, Colleen LePrell

There is a proposal for a joint meeting of the ARO and the NHCA in 2016. February 18-20 were selected as ideal dates, as these dates would precede the ARO meeting, which will be February 20-24 at the Manchester Grand Hyatt in San Diego California. Work is ongoing to determine if this is a viable location for NHCA conference. Future work includes work with the ARO and NHCA executive councils on items such as potential joint advertising, joint registration, and registration discounts to encourage attendance at each meeting by members of the other organization. Both groups have the same goal to expose potential new members to their own organizations to increase the diversity of their membership base.

CAOHC / NHCA 2014 Remaining Webinar Series:

Thursday 7/17/2014

**CAOHC/NHCA Webinar #4: "A Shot of Prevention:
Firearms and Hearing Protection"**

Thursday 8/21/2014

**CAOHC/NHCA Webinar #5: "Economics of Hearing
Conservation Program and Noise Control"**

Thursday 9/18/2014

**CAOHC/NHCA Webinar #6: "Advocating to Reduce
the Ill-Effects of Noise Exposure"**

CEU Information:

Following the webinar there will be an evaluation distributed to the registrant indicated below which will include a link to the learning assessment questions. Individual Registration - CEUs will only be available to the paid registrant. Webinar Recording registrants will NOT be eligible to receive CEUs.

REGISTRATION INFORMATION:

Webinar Deadlines: CAOHC MUST receive each webinar registration the afternoon prior to each session, no later than 3:00 p.m. MST. If your registration is received after this time then you will only receive the webinar recording. You will receive a confirmation email from Go to Meetings the week of each webinar with login instructions and call information.

NOTE: All registrations *MUST* be completed through CAOHC at <http://www.caohc.org/education-courses/webinars> OR you may complete the printable registration form and fax to CAOHC at 414-276-2146 or email to info@caohc.org.

Cancellation Policy: CAOHC/NHCA prepay its provider for webcasting services associated with this webinar and therefore no refunds will be provided in the event of a registrant's cancellation. CAOHC/NHCA reserves the right to modify or cancel programs and/or substitute presenters. If technical difficulties or other circumstances are experienced by the registrant on the day of the webinar, the site will be given temporary access to the recorded webinar in lieu of a refund.



Hearing Center of Excellence, Kristy Casto

The Hearing Center of Excellence (HCE) delivers solutions that promote prevention, improve delivery and transition of care, and coordinate the translation of research. The HCE is focused on enhancing readiness and improving hearing health and quality of life for Service members and Veterans. The HCE is organized into five interactive directorates: Operations, Prevention & Global Outreach, Clinical Care and Rehabilitation, Research, and Informatics.

Information Management

The HCE has laid the groundwork for development of the Joint Hearing Loss and Auditory System Injury Registry (JHASIR). The JHASIR will identify and track every case of auditory injury and hearing loss in fulfillment of NDAA requirements.

Prevention & Global Outreach

With the primary objective of preventing and mitigating hearing loss and auditory injury, the HCE developed a Comprehensive Hearing Health Program (CHHP) with components in various phases of execution. This program is designed to prevent noise-induced hearing loss through effective education, monitoring, training, and hearing protection access, fitting, and use.

Clinical Care

Along with CHHP, Auditory Care Optimization (ACO) is the focus of HCE mission. With nearly 450,000 OEF, OIF, and OND Service members sustaining hearing loss and auditory system injury, HCE efforts to add awareness to the invisible and insidious injury, preserve function, streamline care, and improve hearing health and quality of life is paramount.

Research

To optimally utilize registry and data sharing capabilities and support the CHHP and ACO, the HCE Auditory Research WG (ARWG) leverages technical experts across VA, DoD, National Institutes of Health (NIH), academic, and industry partners. The ARWG constitutes a Scientific Advisory capacity for Defense Health Program programmatic research reviews and development of gaps and priorities for three research activity directorates, development of strategic HCE initiatives, and to participate in small business innovation research announcements, technical transfer activities, and capability briefs for various research-sponsoring agencies.



Membership Spotlight

Karen Tuner

Protec Hearing Inc. – Winnipeg, Manitoba Canada

protec1@mymts.net



Winnipeg ~ is in the province of Manitoba, not providence as the Americans like to say. Reminder: Providence is in Rhode Island. We have 10 provinces and 3 territories. the territories in order looking north — west to east are: Yukon , next to Alaska , Northwest Territories & Nunavik ... and yes you can see the northern lights outside of Winnipeg and sometimes in the back yard of the city — formally called the aurora borealis — awesome! Winnipeg is a city with approx. 700,000 citizens located 1 hr. straight north of the U.S. / Canada border. Grand Forks, North Dakota is 2 hrs. straight south and Fargo (the famous movie about North Dakota) is 4 hrs. straight south, additionally, to help set your bearing ... Minneapolis is exactly 8 hr. south east — all hrs mentioned above are in driving time. ... and the story begins

The testing trailer was parked on a residential street to test some sewer and water guys. The supervisor dropped off a group of 6-7 guys. I tested all their hearing and they hung around after outside of the trailer waiting for their supervisor come back to pick them up. I was at least a couple of hrs., a few phone calls and still no supervisor for a long time. The workers were getting bored waiting and I wasn't sure what to do. Then it dawned on me... this is the perfect time to do an education session with these guys! I gathered them all together right there on the street and started talking about how they can protect their hearing and the words just kept pouring out of my mouth... this is how you get noise induced hearing loss, and this is how you roll the foam plug. I impressed myself with how much I actually knew. Eventually the supervisor came by with the work truck and drove away with all the guys laughing and joking about their hearing test. That was a turning point in my life. Growing up I had always been very shy, I couldn't talk in front of groups. But here I was, teaching about hearing protection and not at all shy about it. I was convinced that day 29 years ago and since then, that this is what I really want to do, so much so that I believe strongly this is what I was meant to do. I love my work, I

love running my own business, I love all aspects of Hearing Conservation and I am good at it !

To make a long story short. It all started when Bob Turner my Audiologist husband and I, just married, moved to Laramie Wyoming in order for Bob to finish his Audiology degree. His Audiology class was rather small and often gathered in the Buck Horn Bar, of course I tagged along, this was my entertainment... I learned to shoot pool, drink American beer and listened to all the shop talk. Before I knew it... I was understanding almost everything these wanna be Audiologist were saying. So, to express my interest, I volunteered at lunch time to read stories to Autistic children. I changed my voice for each character in the story book I was reading (learned in Drama School), the kids seemed to respond to me. I looked young for my age back then, so they must have thought I was younger and may have identified with me and I am short. I can be very goofy at times when I change my voice ~ I love it. Bob wondered if I should go back to University and be a speech pathologist. When Bob graduated from the U of Wyoming we moved back to Winnipeg. My attempt at University failed, my interest was not there for speech. Bob then asked me to help him out occasionally volunteering with hear-

ing tests in schools and nursing homes. This I liked, and started to volunteer for other Audiologist. I really started to get into this testing stuff and Bob came home one day (1985) the Manitoba Dept. of Health was offering a course in Hearing Conservation because new regulations were coming into effect in 1986 and would I be interested. If you can imagine... I jumped for joy, literally jumped for joy, so high, how high — as high as my fingertips could barely touch the light fixture up on the kitchen ceiling ... this is quite amazing because I am just over 5 ft. tall. With a 7 ft. ceiling (I was always good athletically as a young person) I was over whelmed with joy! Many years later Bob told me, he saw “potential” in me. I am very grateful to him to this day. My life has been amazing. One thing led to another. Took the course, passed it and started Protec Hearing Industrial Hearing Consultants in the back bedroom of our house. We mailed out about 200 letters to who we thought would have to comply with the new provincial (here’s that word again) regulations and about half of them responded back. Bought some equipment, bought a truck and rented an Atco trailer to house the sound booth — now we’re talking business. One thing led to another, we earned enough money to rent a real office space and then Bob decided he was going to be the first Audiologist to go into private practice in the Province (not Providence) of Manitoba. It snow-balled...WOW did it ever! Our company is very successful, has a good reputation for the quality of work we do and has grown into an all resource HCP company. The first real break into understanding what Hearing Conservation was all about was our first NHCA in San Antonio Texas — we learned a lot and met a lot of knowledgeable and fantastic people. That first conference we met Gerome from Puerto Rico, Tony Miltich and Steve Eberle; the first people who greeted us and to this day, still friends. John Frank recognized we were newbies and invited us to dinner on the River walk... how exciting and he paid for dinner — thank you John... Since then, many NHCA friends have come to Winnipeg and I have visited with them in their homes. I love America and my American friends. Bob and I were business partner for about 10 years, before we divorced, and then the business became solely mine. We remain friends, that has never changed. We still share the same office and he still acts as my supervisor and consultant. Along with NHCA

Bob has been a wonderful mentor — teaching me a whole lot. Thank you Bob.

Attitudes towards hearing conservation and use of earplugs have slowly changed. Mostly the last 5 years I have noticed management has gotten on-board; they recognize it makes good economic sense to protect hearing rather than deal with a Workers Compensation claim. The workers attitudes have also changed. Years ago, guys wouldn’t ever wear pink, yellow, or orange earplugs, now they take them like candy. They realize that the “selective hearing” joke isn’t really a joke, its actual hearing loss. Not so funny anymore, eh.



The challenge of operating mobile testing units in our extreme Manitoban Canadian climate does not change from one winter to the next... We don’t get a lot of snow compared to Minneapolis or cities out in Eastern Canada or Eastern States. But, what we do get is ice C-O-L-D ... I say that shivering. Even though I live here, it is so barbaric to be here in the cold winter. You would think we would be used to it — NOT! One day last winter the temperature dropped to -52 Celcius / -52 F. The air was so cold that breathing becomes difficult — it hurts and is suffocating. BUT the sun shines brightly — wear your sunglasses. The trailer gets like a friggin’ meat locker and crap if someone unplugs the electrical — meaning a day lost — it takes hours to heat up. Planning trailer moves is an achievement in logistics! Even when everything goes smoothly and the electrical has been accidentally unplugged or a breaker hasn’t blown, there still always something. The trailer doors get cantankerous in the winter, either the locks ice

up and won't open or the door jams ice up and the doors won't close properly. We've had to get the hair dryer and WD-40 out a few times to de-ice the door.

The other extreme, during the summer in the "peg" — Winnipeggers nickname for Winnipeg. Hot, humid and +40 Celsius, translates to 104 F at least for a few months and the sound of LOTS of mosquitoes! The air conditioner does battle with the constant door opening in the mobile units and the mosquitos come inside the trailer for a break from the heat and some snacks. Summer can be a quiet time too. Many Manitoba companies shut down for a couple weeks in the summer. No hearing tests to be heard... good time for truck and mobile unit maintenance and safety inspection and heading on out to cottage country. I've spent many weekends sailing on the Lake of the Woods bordering Ontario & Minnesota. Through the years I've had the privilege of spending time at family cottages, working summer jobs for Parks Board in Cottage Country to support attending University. Cottage Country is located in North Western Ontario about 1½ hr. drive due east of Winnipeg on the TransCanada Highway, known as the #1 Hwy. I do enjoy fishing — especially with my grandfather who taught me about nature and who I love and miss dearly, add to that, fly fishing and deep sea fishing. I even have some contracts in some of these fishing areas. Working vacations are so much fun when the company puts you up in a fishing lodge—yeppers, and they pay you to boot! During the winter I do enjoy curling and many of my NHCA friends have heard my curling story about how smooth the ice is — hehhehe — for their ears only.

The remainder of my leisure time is spent volunteering on safety boards and participating in organizing conferences. For the last few years I have had the privilege of participating in the development of the 'new' standard for North America. The Canadian Standards Association (CSA) Z1007 Standard, Hearing Conservation Program Management — this standard is due to be published very soon. The most memorable and favorite conference I organized was in 2007 — Excellence in Hearing Conservation Seminar — here in Winnipeg, the first outside the U.S. in Canada. Several NHCA heavies



volunteered their time, like Beth Cooper, who gave up vacation days to come up and participate as a guest speaker. Now that/she impressed me... Theresa Schulz, Laurie Wells, Deanna Meinke, Linda Howarth, Lee Hager, Michael Stewart, and Rick Neitzel. They all became the faculty along with other cast of characters from around here. People up here still talk about how "they've been to a lot of conferences, but this was the best ever!" By the second day, word got around and they were hanging in the door way, listening and curious at the same time, knowing they missed out, on the first day, there was so much to learn on hearing, in two days enough and the best info to take back to enhance any one HCP! This does say a lot for all my NHCA friends, who took the time out of their busy life to venture up here and give it their all. Their commitment and dedication to reducing noise-related hearing loss in all sectors of our society really meant a lot to me, and I will value and treasure them for doing so forever. Again, THANK YOU from the bottom of my heart. *I'd like to put a plug in for The Canadian Acoustical Association. Their conference this year is in Winnipeg, October 8-10, 2014.* On October 7th, as Program Chair, I have arranged a meet and greet reception at the new Human Rights Museum (opening September 20, 2014). Being the president of the Incident Prevention Association of Manitoba, I have had the privilege of four working tours, plus this amazing, feel-good building, and conducted hearing tests for all the construction trades working on this project. From the very beginning, when the first hole in the ground dug over 5 years ago to the last steeple of hope placed

to finish off the building. Just the other day finalizing the program for this amazing event. For those coming to the CAA conference, please plan to come a day early — you will be pleasantly surprised and awe struck by this museum and of course Winnipeg....

A few other NHCA characters that I am aware of have flown thru here; the late Jerry Jensema always flew to northern Manitoba for fishing with his buddies and a pit stop in Winnipeg. Tim Rink and Rick Stepkin also ventured up here for some fishing. I tell you — great fishing up here guys and dolls. And lastly, the late Linda Pink lived here and she worked for me before I intro-

duced her to Michael Santuicci at a NHCA conference — Michael has been here many, many times. All good things do happen at NHCA!

Each year I'm drawn back to join the group in one city or another to learn more about hearing conservation and enjoy the company of people who have now become friends and some feel more like family to me. I think I missed 3 conferences. I don't think I will retire from this business, maybe slow down a bit, but always continue what I know and do best — hearing loss prevention is my life passion. I still count sleeps before a conference and my favorite sound is the loon.

NHCA

Annual Conference / February 19-21, 2015
NEW ORLEANS, LA

Call for Papers Now Open!

Submission Deadline: August 15, 2014

For More Information Please Visit:
www.hearingconservation.org/?page=15CallForPapers



WWW.HEARINGCONSERVATION.ORG

Linda Kathleen Pink

June 1, 1962 – February 8, 2014

written by her husband Michael Santucci michael@sensaphonics.com



Linda Kathleen Pink

Many of you fellow NHCA members knew of the passing of my wife, Linda Pink, after a valiant and courageous 10 month battle with cancer. It is an honor

and I am deeply touched that I was asked to write a few words about her in *Spectrum*, especially since our life together began at the NHCA conference in Savannah in 2007.

Linda was born and lived most of her life in Winnipeg, Manitoba CA, prior to moving to Chicago 4 months after we met. She spent almost 20 years as health and safety director at Moore Business Forms before moving to Motor Coach Industries in the same position. That's where she met NHCA member Karen Turner of Protec Hearing Inc., who offered her the opportunity to enter into a career in hearing loss prevention. She accepted the offer and attended her first NHCA conference where we met after Karen said to me "You're going to love the woman I hired." She was absolutely correct and after a trip to Mexico in April, Linda put her house up for sale, quit her job (sorry Karen), moved to Chicago in June and we got married in July. To put things in perspective, we spent our first Christmas together and had been married for almost six months. It was the craziest thing either of us had ever done yet we both agreed that our seven years together were the best years of our lives.

Linda was a major contributor to the success of my company, Sensaphonics, becoming company manager in 2009. She became very passionate about hearing loss prevention for musicians. That wasn't much of a stretch since she herself was an accomplished alto sax player and pianist and her brother Larry is a professional pianist and composer. Linda was an NHCA member and served on the Music Induced Hearing Disorders Task Force for 6 years. Her NHCA volunteering contributions involved organizing the test schedule for free hearing screenings at the Audio Engineering Society (AES) for 2 years (there was never a spot in the test van left unused due to her crazy effort) and she also served as secretary and was responsible for the budget and organization of the first AES sponsored conference on Music Induced Hearing Disorders held in Chicago in June, 2012.

For those who didn't know her, besides being a musician, Linda was an expert photographer, amateur botanist and gardening consultant to many friends, ceramic artist and could swing a hammer and run a band saw like a



Linda with grandson Odin

carpenter. Linda was always one to embrace life fully and her beautiful smile, contagious and conspicuous laugh, quick wit and positive energy could light up a room. She had a large and caring heart with seemingly endless room for her family and countless friends that she loved so dearly. When the ugly specter of cancer came knocking last year it was never a match for, nor could ever defeat her defiant and positive spirit. Despite her diagnosis, she was determined to not let the cancer define her. She remained caring and concerned for those she would too soon have to leave and she tried to put all at ease with her illness. Her courage, dignity, and determination throughout her battle were inspirational to all that knew her and continue to inspire me through my grief. Also left to cherish Linda's memory are her son Christopher Pink, grandson Odin Pink (pictured on previous page), her mother Joan, brothers Raymond and Larry, sister Barbara Pink.

Linda emanated a contagious, almost child-like joy even in the smallest things. She was loved by many NHCA members whose lives were touched in a positive way and left us all with beautiful memories. She would not want me to focus on her illness but instead would want me to thank all of you who were so supportive. Just being there to absorb some of the pain gave her so much strength knowing that so many cared so much about her. We both thank you for your e-mails, letters and cards, gifts and love that you so generously gave us.

I'll close with some kind words of condolence and friendship from fellow NHCA members:

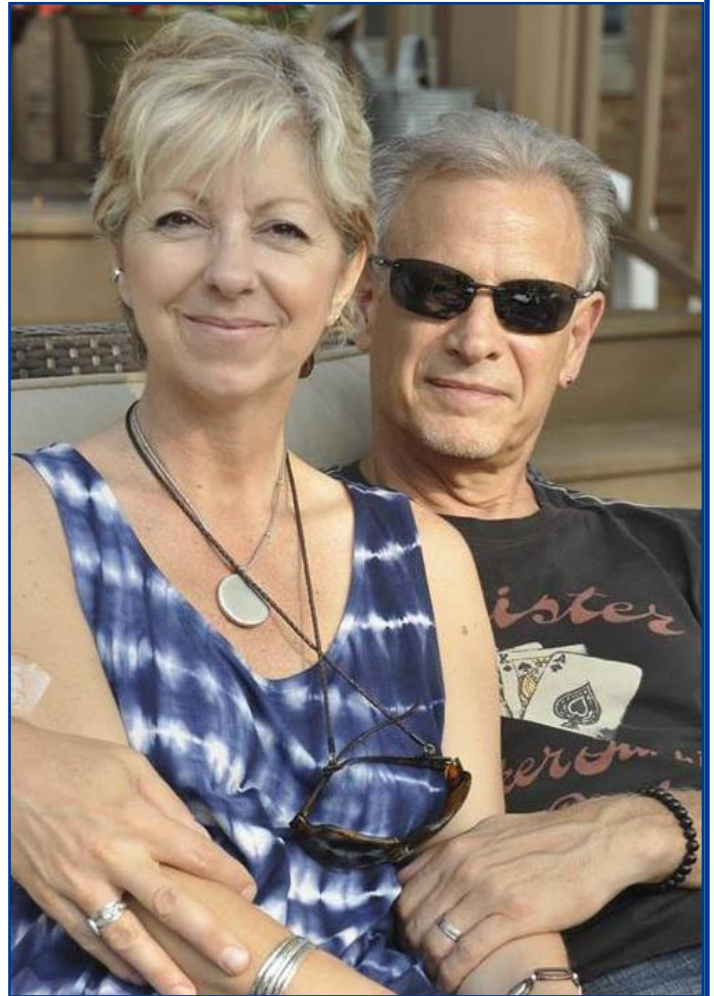
"Linda brought laughter, love and joy to all who met her. Our lives are better because of her."

"Perfect couple, perfect friends, perfect professionals. You two were always my inspiration and cheered me up whenever we met at NHCA."

"I'll never stop hearing that Canadian alto voice, totally grounded soul, always ready for a laugh. We are blessed to have known her."

"You changed our hearts."

"Linda's vibrant enthusiasm for life has touched so many and will continue to inspire and challenge us to live life full of zest and love-just as she did."



Linda and Michael



Celebrating Achievements in Hearing Loss Prevention —

by Deanna Meinke and Thais Morata

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The National Institute for Occupational Safety and Health (NIOSH), in partnership with the National Hearing Conservation Association (NHCA), acknowledged the winners of the 2014 Safe-in-Sound Excellence in Hearing Loss Prevention Awards™ at the 39th Annual NHCA Hearing Conservation Conference on March 14th, 2014 in Las Vegas, Nevada. The awards were presented by CAPT. Gregory Lotz (NIOSH, CDC)



Fig 1. "Roxy" Educational Mannequin used for NGES hearing loss prevention outreach activities.

and honored organizations that have demonstrated commitment and tangible outcomes towards the prevention of noise-induced hearing loss in the work environment and beyond.

This year's recipient of the 2014 Safe-in-Sound Award for Excellence in Hearing Loss Prevention Award is **Northrop Grumman Systems Corporation**, Electronic Systems Sector, from Linthicum, Maryland. Northrop Grumman Electronic Systems (NGES) is a developer, manufacturer, integrator and supporter of advanced electronic and maritime systems for U.S. and international customers for national security and non-defense applications. These systems include high performance sensors, intelligence processing and navigation systems that range from radar and targeting systems to tactical ground stations and navigation systems, and are designed to operate in all environments from undersea to outer space. With over 4000 employees at headquarters, NGES is being recognized for their commitment and implementation of hearing loss prevention strategies in a highly unique and challenging work environment. Specifically, NGES has implemented a process to identify and effectively control hazardous noise sources eliminating or reducing worker daily noise exposures, and have ensured that most of their workers are enrolled in a hearing loss prevention program. Enrollment has been implemented judiciously, however; employees are proactively enrolled in the hearing loss prevention program when noise sources cannot be fully controlled. The program components include; individualized training, hearing protector fit-testing and audiometric monitoring to assure workers are adequately protected. Northrop Grumman Electronic Systems is also recognized for their vision in developing a community outreach program for employees and

their families using a "Jolene" educational mannequin (www.DangerousDecibels.org/Jolene/) named "Roxy" (Fig 1).

This initiative extends their efforts to prevent noise-induced hearing loss and tinnitus beyond the workplace, and addresses non-occupational noise hazards as well. Kevin O'Connor (Sector HCP Admin) and Nancy Hall (HCP Admin) were both on-hand to accept the award on behalf of the NGES team and engaged in discussions during a Saturday Morning Round-table session (Fig 2). Mr O'Connor was exceptionally fortunate that weekend and also won the NHCA Foundation cash raffle prize.



Fig 2. Northrop Grumman Electronic Systems award winners; Nancy Hall (left) and Kevin O'Connor (right) with Greg Lotz (NIOSH, CDC). (photo credit: Jack Foreman)



Fig 3. Benjamin Kanters (3rd from the left) celebrates with the NIOSH Safe-in-Sound Expert Committee (Rick Neitzel (far left), Deanna Meinke (second left), Thais Morata (second right) and James Lankford (far right) and CAPT. Greg Lotz from NIOSH, CDC. (photo credit: Jack Foreman)

The 2014 Safe-in-Sound award for Innovation in Hearing Loss Prevention goes to **Benjamin Kanters**, founder of "HearTomorrow". Benjamin Kanters an Associate Professor at Columbia College Chicago where he teaches "Studies in Hearing," addressing hearing physiology, disorders and conservation for students studying audio engineering and acoustics (Fig. 3). In 2008, this course became the foundation for "The Hearing Conservation Workshop" which


is designed to teach hearing awareness and conservation to students and professionals in the audio, music and hearing science industries. He is being recognized for his development and widespread dissemination of the 2-hour seminar which has been delivered at 37 colleges and universities, 23 professional conferences, and as an online webinar. His passion for hearing loss prevention is tangible and positively promotes the need to educate the music and audio engineering community and those who provide hearing healthcare to them. Attendees at the NHCA conference awards ceremony experienced his sincere passion and commitment first hand during the award ceremony presentation.

To view the award recipient presentations visit <http://www.safeinsound.us/winners.html>.

Nominations for next year's awards will be accepted until September 5, 2014. This year the nomination process will continue to accept self-nominations, but will be expanded to afford NHCA members to nominate potential recipients. We encourage each of you to consider who is striving for excellence and creating innovation in their hearing loss prevention programs in your day to day encounters, and nominate them for 2015. Help us recognize those that are moving the efforts to prevent noise-induced hearing loss and tinnitus forward in tangible ways that may benefit others. For further information please visit www.safeinsound.us.

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