

Update

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The Council for Accreditation in Occupational Hearing Conservation



Use of Insert Earphones for Occupational Audiometric Tests

Submitted by: Laurie Wells, AuD

For decades, clinical audiologists have incorporated insert earphones into their clinical practices for conducting diagnostic hearing evaluations. Yet, these devices have rarely been used in occupational hearing conservation programs. Evidence suggests that the testretest variability and reliability with insert earphones is better than or equal to traditional headphones (Lindgren, 1990; Stuart et al, 1991; Schumziger, 2004). Not just clinical audiologists, but also CAOHC-certified occupational hearing conservationists who had no previous experience or training on using insert earphones, were found to select and position the insert earphone eartips in ear canals appropriately and obtain valid test results (Bell-Lehmkuhler et al, 2009). So the limiting factor does not appear to have been either the equipment or the audiometric operator. Rather, a regulatory requirement has helped to prevent broad acceptance of insert earphones, in spite of the many potential benefits delivered by this advanced technology. Fortunately, this regulatory barrier has been removed, creating an opportunity for routine use of insert earphones in occupational audiometric monitoring programs.

The U.S. Occupational Safety and Health Administration (OSHA) has changed its position on allowing the use of insert earphones for audiometric testing. In a letter of interpretation addressed to Mr. David Croft of the United States Mint, dated March 11, 2013, Thomas Galassi, Director of Enforcement Programs, explains that insert earphones now may be used interchangeably with the traditional supra-aural earphones and that this practice is in compliance with the requirements



An insert earphone foam eartip is being positioned in the worker's right ear canal in preparation for the annual occupational hearing test. Courtesy of 3M Auditory Solutions

specified in the hearing conservation amendment, 29 CRF 1910.95. This determination rescinds the previous OSHA requirement (1993) for parallel, comparative testing to be done with both earphone types, along with a few other procedural steps, before insert earphones could be substituted for supra-aural headphones. This OSHA reversal came after consultation with the U.S. National Institute for Occupational Safety and Health (NIOSH). NIOSH advised OSHA that previous concerns regarding calibration issues have been resolved with the updated calibration procedures in consensus standard ANSI S3.6-2010. Secondly, as per the new interpretation letter, OSHA notes there is convincing evidence that the difference in hearing thresholds found between the two earphone types are not significant enough to interfere with correctly identifying standard threshold shift. Furthermore the differences that may exist are less important than can be observed due to other variables in audiometric testing.

This new OSHA enforcement policy is now aligned with the U.S Federal Railroad Administration (FRA), which has allowed the use of insert earphones since issuing its Occupational Noise Exposure standard in 2006 (See 49 CFR Part 227.111). This conformity with diagnostic audiology practices makes it easier when referring workers to clinical audiologists for diagnostic or follow-up testing, since any concern over comparing audiometric thresholds obtained with different earphone types

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Update

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Articles should be submitted along with a photograph of the author to ghaugen@ caohc.org

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Message from the Chair

Submitted by: Laurie Wells, AuD

My neighbor is getting a new roof. I don't have to look out the window to know this. I do have to look out the window to learn which lucky neighbor it is, since the hammering sounds are ricocheting around the surrounding houses, making localization difficult. As I sit here at my desk trying to concentrate - to create a compelling, first Message from the Chair – this noise is so annoying – it is all I can think about! Trying to concentrate - to block it out – this is ridiculous! I can't work like this. Maybe I will go wash the dishes. If only they would stop – just long enough for me to think of something to write about. It's been three hours. Surely they must be getting hungry.... Ahhhh. Relief! I should have about thirty minutes of quiet contemplation.

At least I can enjoy the irony: my earnest effort to compose an essay for an audience of hearing conservation enthusiasts being corrupted by these invasive, arrhythmic, disarming, unpredictable, maddening sounds I cannot control. What timing, for this reminder of the *power of sound*, and the commitment we have made to prevent the negative repercussions of too much for too long. How different this same occupational hazard is for me, across the street in my climate controlled office, than for the workers on the hot roof wielding the *weapons of mass construction*. Actually, disruption, for me.

How significant is our work? If we, the hearing conservation community, do our work well, the roofers and countless other noise-exposed workers will all go home from their jobs in the same condition that they arrived each day – at least from a noise exposure perspective. For decades, CAOHC has embraced this challenge. In a multi-disciplinary approach, CAOHC strives to advance best practices in occupational hearing conservation, through its credentialing programs. Tens of thousands of CAOHC-certified practitioners are in action: interacting with workers in all types of jobs, in every state in the U.S., and in many other countries as well. They are checking hearing thresholds, fitting hearing protectors, teaching, modeling, and urging workers to value and protect themselves from hazardous sounds.

As each of us perform our work tasks day after day, month after month, year after year, it's helpful to remember how we contribute to this same CAOHC mission. Recently, one of my colleagues from China told me, "I could see it on the face of the worker that he remembered me - that I was the one who helped him learn how to wear his earmuffs correctly. This made me so happy!" I too have had this same uplifting experience – the recognition from a grateful worker. It keeps us going. Whether it is one worker at a time, one CAOHC course at a time, one employer at a time, one day at a time...we have the opportunity, the reach, and the tools to make a difference.

As I assume this new role as Chair of CAOHC, I especially want to acknowledge our out-going Chair. Dr. Bruce Kirchner, a giant in hearing loss prevention and a tireless CAOHC advocate: thank you for your work, past, present, and future. *You make a difference!*

From the sound of it, lunch break is over. I've got some weapons of mass disruption of my own. I'm off to check on those roofers. I'm guessing some of them will need some earplugs and most of them will need some lessons and encouragement to use them. Disrupting the cycle, one cochlea at a time.....

chEARs! Laurie

Laurie Wells is a Doctor of Audiology and Senior Regulatory Affairs Specialist for 3M Personal Safety Division, where she supports standards writing and regulatory activity pertaining to hearing protection globally. Before joining 3M, she was the Manager of Occupational Audiology and consultant for Associates In Acoustics, Inc. The experience of working directly with employees at their worksites as well as with corporate level health and safety professionals has helped her understand the real world issues of noise hazards and the challenges of protecting against them.

- continued from page 1: Use of Insert Earphones for Occupational Audiometric Tests.

will be alleviated; the type of earphone used will no longer be a factor.

Key Benefits of insert earphones

Insert earphones offer some significant advantages over traditional supra-aural headphones (Gross, 2005), such as:

- Less background noise: the foam eartip of the insert earphone seals the ear canal and blocks out the background noise in the test room. Noise reduction can be 30 dB or more, which makes it possible to test down to lower audiometric threshold levels and lessens the chances of the listener being distracted by outside sounds.
- Infection control: insert earphones are designed for single-use. This
 eliminates the need to share headphones with multiple workers and
 reduces the likelihood of spreading infection.
- Greater inter-aural attenuation: puretone test signals will cross through the head from one ear to the other by bone conduction when the sounds get loud enough. With insert earphones, the sound levels can be higher than for supra-aural headphones, before this becomes a problem. This is particularly helpful when testing workers with large differences in hearing between ears, because there are fewer instances of the cross-over signal being detected by the better ear.
- Comfort and flexibility: With no headband present, there is greater comfort by not having the weight and tension on the head. Also, there is less interference from helmets, hats, and other headgear. There is no need to adjust a headband to fit multiple sizes and shapes of heads so insert earphones are versatile for a varied workforce.
- Solution for collapsing ear canals: On some individuals, the pressure of the supra-aural headphone against the pinna will cause the ear canal to close or collapse. This condition artificially raises the hearing thresholds. Once the headphones are removed, the earcanals reopen however the hearing test results indicate a hearing loss. Having the foam eartip of the insert earphone placed in the



Courtesy of 3M Auditory Solutions

ear canal prevents the canal from collapsing so that thresholds can be measured accurately.

Other Considerations

Insert earphones carry the same regulatory requirements for calibration as do supra-aural headphones: earphones must be calibrated to a specific audiometer as part of the annual calibration (OSHA, 1983). As tempting as it is, earphones cannot be swapped from one audiometer to another without causing calibration issues. It is possible to apply correction factors based on predetermined sound pressure level values if one pair of earphones is shared between two audiometers; however, this practice is not ideal inasmuch as it invites potential risk of human error.

Federal agencies also require that the audiometer is checked for functionality each day that hearing tests are conducted (OSHA, 1983).

Two options exist: 1) testing a person with known stable hearing thresholds on each day of testing to ensure the results do not shift compared to the baseline test, and 2) use of a bioacoustic simulator to assess threshold stability. In order to take advantage of a bioacoustic simulator, special adaptors are needed to couple the simulator to the insert earphones. (Consult with the manufacturers for details.)

Occasionally there are individuals for whom insert earphones cannot be used due to anatomical deformities or medical issues. Inserting an eartip into an actively infected ear canal, for example, is not advised. Identify an alternative option, such as an outside referral source, to accommodate these exceptions. Another factor to consider before implementing insert earphones is the cost of the disposable eartips. While there is added cost for the individual-use eartips, this cost is offset by the discontinued need for protective disposable earphone cushion covers and/or maintenance and replacement of the earphone cushions. In addition, a procedure that ensures the eartips are changed for each listener and discarded properly should be practiced.

In summary, the OSHA allowance of insert earphones in audiometric monitoring programs opens the door to implement an advanced technology in audiometric testing. Managers of hearing conservation programs should weigh the benefits and practical applications of converting from supra-aural to insert earphones knowing they can feel confident that audiometric test reliability will remain consistent with their existing programs.

References

Bell-Lehmkuhler, B., Meinke, D., Sedey, A., Tuell, C. Reliability of audiometric thresholds obtained with insert earphones when used by certified audiometric technicians. *Noise & Health*, January-March, 2009, Volume 11. 59-68.

FRA, 2006. Occupational Noise Exposure for Railroad Operating Employees; Final Rule 49 CFR Part 227. US Department of Transportation Federal Railroad Administration.

Gross, A., 2005. Insert earphones for occupational hearing conservation testing. *Audiology Today*, Volume 17, Number 6, 21-24.

Lindgren, Fredrick. 1990. A comparison of the variability in audiometric thresholds measured with insert and conventional supra-aural earphones. *Scandinavian Audiology* 19:19-23.

OSHA 1983. 29 CFR 190.95. Occupational Noise Exposure; Hearing Conservation Amendment; Final Rule, effect 8 March, 1983 US Department of Labor, Occupational Safety and Health Administration.

OSHA 1993. Letter of interpretation. US Department of Labor, Occupational Safety and Health Administration. Retrieved from internet June 20, 2016.

https://www.osha.gov/pls/oshaweb/owadisp.show_document?p_ table=INTERPRETATIONS&p_id=21245

OSHA 2013. Letter of interpretation US Department of Labor; Occupational Safety and Health Administration. Retrieved from internet June 20, 2016. <u>https://www.osha.gov/pls/oshaweb/owadisp.show_document?p_table=INTERPRETATIONS&p_id=29255</u>

Schmuziger, N., Probst, R., Smurzynski, J., 2004. Test-Retest reliability or pure tone thresholds from .5 – 16 kHz using Sennheizer HDA 200 and Etymotic Research ER2 earphones. *Ear and Hearing* 25; 127-132.

Stuart, A., Stenstrom, R., Tompkins, C., Vanderhoff, S. 1991. Test-Retest variability in audiometric threshold with suprathreshold and insert earphones among children and adults. *Audiology*, 30: 82 – 90.

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Compliance with Hearing Protection and Associated Influences

Submitted by: MAJ Quentin Hecht, AuD CCC-A CPS/A

What good is a hearing protection device (HPD) if it is not worn? Wearing a HPD can be a simple decision to make and can be the deciding factor as to whether or not an individual suffers noise-induced hearing loss (NIHL). The dissemination of hearing protection and NIHL information is becoming more and more prolific, especially through the efforts of organizations such as the National Hearing Conservation Association, Council for Accreditation in Occupational Hearing Conservation, National Institute for Occupational Safety and Health, and Department of Defense Hearing Center of Excellence. Yet in the midst of hearing conservationists' best efforts, the prevalence of hearing loss among those occupationally exposed to hazardous noise in the manufacturing sector has made minimal progress over the past three decades. In fact, Masterson et al. found this prevalence to be unchanged, hovering around 19% for the past 30 years (Masterson, 2015).

Among the hierarchy of controls for eliminating and reducing hazards in the workplace, personal protective equipment (PPE) is the least effective because it relies solely on the individual. Consequently, the protective capabilities of any PPE (not just HPDs) are subject to the workers' compliance behavior and the workers' ability to properly fit and maintain wear of the PPE. However, more often than not, PPE ends up being the control method of choice in most workplaces, in combination with other controls, it is still necessary to achieve sufficient noise attenuation. Sadly, direct worker observation has shown many individuals making a conscious decision not to wear HPDs even in some of the most hazardous noise environments. For example, Bjorn et al. surveyed 301 Navy flight deck personnel from four aircraft carriers and two amphibious assault ships with noise exposure levels of 130-150 dBA for up to 16 hours a day and found that, of those surveyed, 47% (~141 individuals) self-reported never wearing earplugs (Bjorn, 2005). This raises the question: why?

A multitude of influences, attitudes, and rationales may be to blame for this lack of compliance. Anecdotally, hearing conservationists often cite seven general reasons why workers lack compliance with HPDs: non-conformity, lack of perceived efficacy of HPD, lack of leadership setting the example, machoism (machismo), poor fit/discomfort, communication concerns, and complacency/laziness.

Non-conformity can be seen in all aspects of life. Some individuals are reluctant to conform to the rules even when their health and livelihood depend on it. These could be the same individuals (but not always) who have compliance issues with other forms of PPE and other rules in the workplace. The true reason for their non-conforming behavior may be undetermined and not within the scope of the hearing conservationist to investigate; however, the overarching remedying action might be finding a way to convince and motivate them to use their HPDs via education and training.

Efficacy. Workers may wholeheartedly believe their HPDs do not actually work. They may not believe in the ability of the HPDs to safeguard them from hearing damage, "So what's the point in wearing them?" Again, education and training are needed to gain their "buy-in."

Use of hearing loss simulators and field attenuation evaluation systems (also known as fit-testing), as well as showing published research and statistics regarding hearing protection effectiveness, may help get this point across.

Leading by example can be a double-edged sword. If executed correctly it can win the compliance and respect of subordinates. If not, the rules of the workplace are devalued and the overall ability of the leader to successfully implement programs is diminished. When management or supervisory personnel do not wear HPDs themselves, it sends a message to subordinates that HPD compliance is not important, thus, not needed. Tactfully speaking with management and/or supervisors about the importance of setting the example may bring about change and could improve compliance.

Machismo. Merriam-Webster defines machismo as a strong sense of masculine pride and as an exaggerated or exhilarating sense of power or strength. However, this is not exclusive to males and can be exhibited by females as well. Personnel exhibiting machismo may perceive wearing HPDs as a sign of weakness or inferiority. Machismo can mask feelings of insecurity and fears of being labeled by others as not being tough. Counseling individuals who exhibit machismo requires very frank and fact-based conversations. Relating the experience to a friend or family member who has hearing loss and understanding how that impacts the member's life may be beneficial.

Poorly fit HPDs. Improperly selected and fitted HPDs can be a very common reason for non-compliance; workers will rarely wear something that causes pain or discomfort. Proper HPD selection and fitting cannot be overstressed! Individualized education and training combined with HPD fit-testing is highly recommended.

Communication concerns. Even when properly fitted HPDs are used, fears of not hearing vital warning signals or not being able to maintain effective communication with coworkers can cause individuals to be non-compliant or cause them to wear their HPDs incorrectly (e.g., partially remove plugs or take one earmuff off). Hearing conservationists should ensure over-protection is not causing communication concerns. Again, proper HPD selection, education, and training can remedy the problem.

Complacency and laziness. These two behaviors are often described as synonymous even though they are not exactly the same. Nonetheless, in the context of this article they are mentioned together because both can be affected by the methods employed for HPD motivation, education, and training. The key is being able to deliver the information in a manner that strikes a resounding chord with the individual, as well as conducting it frequently enough to keep it in the forefront of the individual's consciousness.

Unfortunately there is not one single solution to all of these reasons for lack of compliance. Numerous strategies should be employed, including the aforementioned recommendations. Knowing the Hearing

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Conservation Program's (HCP) population is critical to its success. Frequent interaction with HCP members may help identify the root cause of non-compliance. Self-reported information (implementation of questionnaires is recommended), supplemented with first-hand observations during visits, can help ascertain workers' thoughts, perceptions, and compliance with HPD usage. Keep in mind the "Five C's" when considering barriers to hearing protection compliance: Comfort, Convenience, Communication, Cost, Culture/Climate (Stephenson, 2009). Also, the use of fit-testing can significantly aid hearing conservationists in their HPD fitting, motivation, education, and training efforts (Schulz, T., 2011; Hager, L.D., 2011).

Ultimately, the prevention of NIHL requires a team approach by all stakeholders including shop supervisors, hearing conservationists, and individual workers. Compliance with HPDs is paramount, as it is the last line of defense to protect against NIHL.

The views expressed are those of the author and do not necessarily reflect the official policy or position of the Air Force, the Department of Defense, or the U.S. Government.

References:

CAOHC update

> Bjorn, V.S., Albery, C.B., Shilling, R., McKinley, R.L. (2005) U.S. Navy Flight Deck Hearing Protection Use Trends: Survey Results. New Directions for Improving Audio Effectiveness (pp. 1-1 – 1-20). Meeting Proceedings RTO-MP-HFM-123, Paper 1. Neuilly-sur-Seine, France: RTO.

> Hager, L.D. (2011). Fit-testing hearing protectors: An idea whose time has come, Noise & Health, 13:51, 147-151.

Masterson, E.A., Deddens, J.A., Themann, C.L., Bertke, S., Calvert, G.M. (2015). Trends in worker hearing loss by industry sector, 1981-2010. *American Journal of Industrial Medicine*, 58, 392-401.

Stephenson, M.R. (2009). Hearing protectors in the 21st century: They're not your father's earplugs, *Seminars in Hearing*, 30(1):56-64.

Schulz, T. (2011). Individual fit-testing of earplugs: A review of uses, *Noise & Health*, 13:51, 152-162.

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UPDATE Call for Articles

CAOHC Wants to HEAR from you!

CAOHC is currently accepting articles for future issues of *UPDATE*, our publication offered at no charge to the entire hearing conservation community. Each edition is posted on our new website, reaching over 22,000 occupational hearing conservationists. Writing for *UPDATE* is your chance to reach thousands of colleagues within the hearing conservation industry who are committed to occupational Hearing Conservation, just like you!

Articles that will be selected must complement CAOHC's mission and goals, as well as be relevant. We are interested in hearing about innovative hearing loss prevention programs, new innovations in training employees to be hearing conservation compliant, your challenges and your successes.

In addition, *UPDATE* places the "spotlight" on an outstanding Occupational Hearing Conservationist, Course Director, or Professional Supervisor. If you know of someone in your company deserves the "spotlight" for their commitment to hearing conservation, please craft a brief testimonial (approximately 75-100 words or less) and include that person's name, your company name and a recent head-shot photo. Your "spotlight" candidate will be added to our next issue, as well as, posted to the CAOHC website.

Submit your article or your "spotlight" testimonial along with your contact information to Kim Stanton at <u>kstanton@caohc.org</u>, or our *UPDATE* Editor, Dr. Antony Joseph, at <u>earsafety@yahoo.com</u>. Also, please let us know what you would be interested in reading in future issues of *UPDATE*. You may send your comments or questions to the CAOHC Administrative Office at <u>info@caohc.org</u>. Thank you again for your interest in *UPDATE*!







CAOHC UPDATE: Accessible and Timely Reading Material for COHCs

Submitted by: Antony Joseph, AuD PhD CCC-A CPS/A

CAOHCs Certified Occupational Hearing Conservationists (COHCs) celebrate a rich history of growth and development that emerged from a federal grant obtained by the New Jersey Association of Industrial Nurses in the 1960s. The first courses were produced by Dr. Joseph Sataloff, MD, using the Guide for Training Audiometric Technicians in Industry. By the end of the decade, over 3,000 nurses and other industrial personnel had effectively completed the training offered by Dr. Sataloff and his team of educators. By 1972, an organization named the American Board of Occupational Hearing Conservation Technicians introduced hearing conservation training materials that included formalized syllabus content with specified course duration (20 hours). At that time, the Board emphasized that its primary responsibility was to set standards, establish training policies, teach students, and prepare instructors. A year later, the name was changed to CAOHC, and the first Course Director (CD) workshop was launched. In 1976, a newsletter reference tool for OHCs and CDs was published, and was called UPDATE. Two years after the UPDATE newsletter was established, the first CAOHC Occupational Hearing Conservation Manual was published for distribution to OHCs and CDs. The early developmental years of CAOHC transpired at a ferocious pace.

Authors for *UPDATE* have continued to deliver articles of interest for our large and diverse community of hearing conservationists and hearing loss prevention personnel, including field, clinic, industry, military, and academic professionals. My aim is to point out several *UPDATE* articles that our readers should find accommodating, especially for a recharge of OHC knowledge.

Generally, baseline audiometric exams are administered on employees in the early stages of their careers. These audiograms are crucial for the accuracy of the medical surveillance of hearing and detection of temporary shift of hearing thresholds. Unreliable and inaccurate baseline data serve to diminish overall program sensitivity and may place employees at increased risk. Annual audiometric monitoring may be delivered in an array of settings, using a variety of audiometer types, and either manual or automatic test methods. The time of day, or time of work-shift, that is selected for an employee's annual audiogram may also be impactful. To learn and explore more about issues that pertain to occupational audiometric practices, refer to the following *UPDATE* articles:

- Susan Cooper & Barbara Panhorst (February 1993, Volume 4, Issue 1), Best Time for Conducting Annual Hearing Tests in the Occupational Setting
- Peter C. Weber (Summer 1997, Volume 8, Issue 2), How Tinnitus and Other Factors Contribute to Unreliable Noise-Induced Hearing Assessment
- Paul J. Brownson (Winter 2000-2001, Volume 11, Issue 4), Cerumen Management
- Deanna Meinke (Summer 2002 · Volume 14, Issue 2), Audiometric Distinctions

- Thais C. Morata (Summer 2004 · Volume 16, Issue 2), Ototoxicity: An Issue in Hearing Loss Prevention in the Workplace
- Elliott H. Berger (Winter/Spring 2006 · Volume 18, Issue 1), Options in Defining Background Noise During Audiometric Testing



According to the Occupational Safety and Health Administration (OSHA), audiograms administered each year should be compared to the worker's baseline audiogram at 2000, 3000, and 4000 Hz to determine if a standard threshold shift (STS) has occurred (OSHA, 1983). A change in hearing sensitivity on an annual audiogram is considered an OSHA-reportable, work-related STS (OSHA, 2002) when the average difference between the baseline and annual test thresholds equals or exceeds an average of 10 dB for 2000, 3000, and 4000 Hz, when absolute thresholds average 25 dB HL or greater at those frequencies (CAOHC Manual, 2015).

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When using supra-aural headphones, workers should be advised to place headphones on ears carefully, so that the receiver is approximate to the ear canal.

A fair number of occupational STSs have probably been minimized, delayed, or depreciated because of elevated and invalid baseline threshold data. Ultimately, it would be wise to reconcile the records of employees from whom audiometric data have been established under questionable conditions. The National Institute for Occupational Safety and Health (1998) and the American Academy of Audiology (2003) have aptly recommended that hearing conservation programs should not condone the use of hearing protection devices as a substitute for the noise-free (quiet-time) condition. At a minimum, individual or smallgroup hearing protection training

should be provided for employees in order to improve user skill and attenuation performance. This should be done immediately prior to the 14-hour noise-free period for a subsequent audiometric baseline test or STS confirmation audiogram (re-test). CAOHC readers are highly encouraged to administer attenuation effectiveness measurements (fittesting) following hearing protection training to quantify and document a worker's attainable protection levels.

Readers are encouraged to pursue additional references, and, to take a huge educational step forward, the CAOHC Hearing Conservation Manual (5th Edition) is a fabulous composite of information that can be used effectively in CAOHC Courses, and as a textbook for advancedlevel training, such as Doctor of Audiology programs, Occupational Health Physician residencies, or Certificate in Industrial Hygiene certification preparation. Contact CAOHC for more information.

Dr. Antony Joseph is an Assistant Professor in the Doctor of Audiology Program at Illinois State University. He has been a CAOHC Council member since 2011, and represents the American Academy of Audiology. He has been an occupational audiologist for over 25 years.



CAOHC's International Presence

Submitted by: LTC John A. Merkley, AuD CCC-A CPS/A

The Council for Accreditation in Occupational Hearing Conservation's (CAOHC) mission is to, "Advance best practice in occupational hearing conservation worldwide." Hearing loss, especially noise-induced hearing loss, is a global challenge and CAOHC believes that through forward thinking, innovative, and collaborative efforts with national and international partners, the challenge of noise induced hearing loss can be overcome.

In an effort to further develop international relationships and partnerships and with the help of Dr. Thais Morata of NIOSH, Dr. John 'Andy' Merkley, CCC-A, CPS/A, CAOHC Vice Chair of Education, was invited to speak at the 31st International Meeting in Audiology, held in São Paulo, Brazil 26 – 28 May 2016. This is the largest meeting of audiologists in the country of Brazil. Over one thousand audiologists from Brazil, Argentina, Uruguay, Holland, and the United States of America attended the conference, which was hosted by the Brazilian Academy of Audiology under the leadership of Dr. Kátia De Freitas Alvarenga and her outstanding Executive Committee. Presentation topic areas included aural rehabilitation, newborn infant screenings, diagnostic audiometry, telehealth, noise mitigation, cochlear implants, amplification, vestibular testing, hearing conservation, and many more.

Dr. Merkley's presentation provided participants with a general introduction to CAOHC and educational courses offered by CAOHC. Due to the fact that audiologists provide all audiometric services in hearing conservation programs throughout Brazil, the presentation focused primarily on providing a brief introduction to the, "Professional Supervisor of the Audiometric Monitoring Program (PS) workshop." This workshop is gaining international recognition especially in South America and has been taught multiple times in Mexico City and Lima, Peru. CAOHC is hopeful that by providing this brief introduction to the PS workshop, the value of advanced education in audiometric monitoring, audiogram review, physiology of noise-induced hearing loss, noise exposure monitoring and reporting, and in-depth case reviews will be seen and lead to future PS workshops in Brazil.

CAOHC is excited and grateful to the Brazilian Academy of Audiology for their invitation and the many opportunities that lie ahead for collaboration and partnership.

Welcome CAOHC new Administrative Staff

We would like to introduce all of you to two new staff members

Gabriela Haugen

Marketing, Education Program Manager

Gabriela will be responsible for coordination of all information related to Course Director and Professional Supervisor maintenance and education. Additionally, Gabriela will work with the Marketing Committee to coordinate all CAOHC marketing efforts. Gabriela is a recent graduate of the University of Wisconsin-Whitewater.



CAOHC update

Ostaveeya Tye

Administrative Coordinator

Ostaveeya's primary responsibilities focus on the OHC standardized exam. Additionally she provides administrative assistance to both Kim Stanton and Gabriela. Ostaveeya is currently a Junior at the University of Wisconsin-Milwaukee studying Economics and International Law.

Gabriela is a full time employee and Ostaveeya is part-time working Monday-Friday mornings.

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Leadership

The CAOHC leadership otherwise known as the Council consists of two representatives from each of the following Component Professional Organizations (CPO).

• American Association of Occupational Health Nurses (AAOHN) Elaine Brown, RN BS COHN-S/CM COHC

Bryan Topp, RN MPH COHN-S COHC

• American Academy of Audiology (AAA) Laurie Wells, AuD FAAA CPS/A *Council Chair*

Antony Joseph, AuD PhD CPS/A

 American Academy of Otolaryngology - Head & Neck Surgery (AAO-HNS) LTC James Crawford, MD CPS/A

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