



East Bay Chapter Newsletter

❄️ **December 2023** ❄️

Our December Meeting will be held Saturday, Dec. 9, in person! Members will be receiving an e-vite or a letter in the mail. Feel free to bring your spouse or significant other. NO ZOOM will be held.

TOPIC: HOLIDAY PARTY! HLAA-East Bay Chapter will cater this party with delicious food and other holiday goodies! Come socialize with your fellow HLAA members and enjoy the ambiance and food! After everyone gets a plate, there will be an informal discussion of devices that we are using or have our eye on. Please bring a device that you are using or an ad you are looking at for our discussion and sharing. We look forward to seeing you! There will also be time for questions that you may have been saving up.

You're welcome to come socialize at 9:30 a.m.; Party begins at 10:00 a.m. The party will be held at the Kaiser Fabiola Building, 3801 Howe Street, Oakland, in the basement. Take elevator down to basement, turn right down the hall to the end, Room G26. PARKING is available at the parking structure across the street.

Once you receive your invitation e-vite or letter in the mail, please RSVP so we know how many to prepare for.

HLAA-EB posts our newsletters to the California State Association webpage and a link on our website. **VOLUNTEER! Contact us to let us know you are available!** Check out our website at: <http://www.hearinglosseb.org/> Contact us at: info@hearinglosseb.org



Here's to hearing all the wonderful sounds of the season!

Meeting Notes: *Locating Sound and Neural Plasticity*

At the Nov. 11, 2023 HLAA-EB meeting, our guest speaker was Dr. Elizabeth (Liz) McCullagh, Ph.D., who discussed how sounds are located in the environment and may lead to neural plasticity. She discussed her past and current research on brainstem level sound processing in a genetic form of autism, FXS. Dr. McCullagh also talked about new work occurring in her lab using a comparative approach to better understand hearing with two ears



Dr. McCullagh's Background

Dr. McCullagh is currently an assistant professor in the Department of Integrative Biology at Oklahoma State University where her research is focused on auditory processing, specifically the sound localization circuit in the brain. Her research and support are funded by both the National Institute of Health (NIH) and the National Science Foundation (NSF).

Presentation Agenda

Commencing with a video of sounds that we might hear in our everyday lives, Dr. McCullagh set out her agenda for her current presentation, as follows:

- Highlights of the Auditory Brainstem Circuit
- Binaural Hearing in Autism Fragile X Syndrome (FXS)
- The McCullagh Lab Research Projects

Auditory System Development

Research has shown that the auditory system is one of the first sensory systems to fully develop in many animals and is critical for many types of interactions, such as avoiding predators, finding mates, social communication, and basic survival. The process of locating a sound starts by integrating acoustic cues received by both ears which are then compared in the auditory brainstem of mammals. The auditory brainstem circuit has classically been treated as hardware that rarely gets updated or altered due to its essential task of locating sounds.

Research on How the Auditory Brainstem Evolves

However, more recent research by Dr. McCullagh and other scientists have discovered that there is on-going modulation of this auditory circuit throughout life, as well as variability in how the circuit has evolved based on an animal's social needs, environment, life stage, and genetic status among other factors. In fact, the auditory brainstem can be used as a model circuit to study different factors that may alter basic neural computations in the brain that lead to neural plasticity.

Sound Information in Listening Environments:

Dr. McCullagh identified the 3 types of sound information that are present in a listening environment.

- ✓ Frequency
- ✓ Intensity (loudness)
- ✓ Location

Using pictures and diagrams, she pointed out the differences in size and shape of various mammalian ears which can affect knowing the location from which a sound is coming: She then demonstrated how different types of sound location information can be behaviorally relevant (e.g., mice vs. predator hawks vs. humans). She then presented a model for calculating excitation/inhibition (E/I) balance, as well as known transmitters for E/I.

Binaural Hearing in Autism Fragile X Syndrome (FXS)

Dr. McCullagh explained how her lab has been studying binaural hearing in different types of mammals ranging from mice to humans with a genetic form of autism called Fragile X Syndrome (FXS). This particular form of autism has been chosen as a research model because many of those with FXS often demonstrate a lot of communication problems in binaural hearing and other senses, as well as hypersensitivity to sensory stimuli (e.g., intense sounds), and even epilepsy and susceptibility to audio-genetic seizures.

Comparative research studies in the auditory processing field have been especially important in providing a synthetic perspective of sound information processing by ears and brains. Therefore, research using diverse organisms, such as amphibians, mice and naked mole rats with some showing hearing similarities and others showing differences, have proven to be powerful models for human hearing and helped to move research forward.

The McCullagh Lab Research Areas of Interest

The McCullagh lab has 3 areas of interest in gaining a better understanding of how the brain processes sound information, as follows:

- Understanding how different organisms process sound information based on their physiology, environment, genetics, and other factors.
- Using autism, aging and other changes that occur in the brain to understand how processing is different under those conditions, as well as to understand the basic circuitry and how it functions.
- Implementing modern techniques to manipulate the circuits involved in sound source processing to better understand the circuitry involved.

Current Research Focus on Locating Sound and Neural Plasticity at the McCullagh Lab

In spite of some of the major challenges of linking phenotypes across genetic background strains of mouse models to humans, Dr. McCullagh emphasized that the McCullagh lab plans on continuing to apply standard scientific controlled quantitative methods for conducting and assessing their neural anatomy research. Their research pertaining to locating sound as related to neural plasticity is organized around and centered primarily on these specific issues:

- Behavioral Phenotypes;
- Physiology;
- Underlying Mechanisms (Excitatory/Inhibitory Balance & Myelination).

The McCullagh Lab's Future Directions

Dr. McCullagh then proceeded in citing some of the future directions of her lab's on-going research on locating sound, as guided by several specific questions that have not yet been fully addressed or answered. For example:

- ✚ Are their LSO spines, and if so, are they inhibitory or excitatory?
- ✚ Are there myelination changes, and if so, how do they affect node dynamics, electro physiology, and manipulating LSO?
- ✚ Is development of physiological and behavioral responses altered?
- ✚ What drives sex differences?
- ✚ Is loss of FMRP responsible for these phenotypes?
- ✚ Are mitochondria of FXS mice a related factor in auditory brainstem processing differences?
- ✚ Is skeletal muscle a related factor in behavioral phenotypes?

Wrap-Up

As Dr. Liz McCullagh concluded her excellent presentation, she said that she wanted to remind us that she and her colleagues in the McCullagh lab are concurrently conducting several types of projects, including:

- ❖ Auditory system projects (as described above).
- ❖ Non-auditory system projects (for example, how gut function affects brain function).
- ❖ Outreach projects (for example, The Sound of Science – Mobile Interact Exhibit).

Finally, Dr. McCullagh offered us a list of several references and their citations, which describe in detail some of the recent research studies being conducted at the McCullagh lab. She also opened up a Q & A session at which time she invited audience members to ask questions, make comments, or contact her later via her email below if someone would like further information.

For More Information or Questions: Contact Dr. Liz McCullagh at her email: elizabeth.mccullagh@okstate.edu

~ *Kathy Fairbanks*

How was your Veterans Day? Do you have relatives who are veterans and have hearing loss? Read this story about one of our HLAA veterans.

By HLAA Communications

An active member of HLAA's Veterans Across America Virtual Chapter (VAAVC) since 2021, Vietnam vet Steven Sterry and his then-new hearing service dog, Zochi, were profiled in Hearing Life magazine's [Fall 2022 issue](#). In honor of Veterans Day, we asked him for an update on his many activities supporting veterans, both with and without hearing lo

A Long Career Serving Veterans

Steven Sterry with his hearing service dog, Zochi.

Rev. Steven Sterry, 80, developed hearing loss and chronic tinnitus through exposure to repeated naval gunfire from the U.S.S. Galveston (CLG-3), while stationed on this guided missile cruiser over a nine-month period during the Vietnam War. Subsequently, he worked for 20 years assisting veterans with employment related issues as a Veterans Employment Representative with the State of California Employment



Development Department (EDD). There, he helped military veterans find work and deal with physical and psychological issues that prevented them from keeping long-term jobs.

After retiring, Steven pursued his calling to the ministry and was eventually ordained first as a deacon, then as a priest in the Anglican Church of North America. Currently, in addition to his role as associate pastor of a local Anglican church, the Whittier, California resident serves as director of ministry and education for the United States Conference of Chaplains, is an affiliate member of Cru Military Ministry and serves as an ombudsman and military outreach member for the Employer Support of the Guard and Reserve, a voluntary military support agency under the U.S. Department of Defense.

Prior to the COVID-19 pandemic, he was also community sponsor to three Veterans in Prison (VIP) groups at the California Institution for Men, in Chino and one at the California Institution for Women in Corona, which are open to all inmates who have served in the military.

Currently, Steven is involved with a U.S. Department of Defense project, under a contract to General Dynamics Corporation, which he learned about through HLAA's [Veterans Across America Virtual Chapter](#) (VAAVC). He participates as a panel member in peer reviews of medical study proposals related to hearing restoration or prevention of noise-induced hearing injuries.

Discovering HLAA and the Veterans Chapter



Attendees of the HLAA 2023 Convention luncheon for members of the Veterans Across America Virtual Chapter, including military veterans, their families and HLAA staff and board members.

Daisy, a Chihuahua/Terrier mix trained to alert his wife to the onset of migraine headaches. In a conversation about their service dogs, a classmate (Raegene Castle) shared information about HLAA. While attending online meetings of the HLAA Peninsula Chapter in San Francisco during the pandemic, Steven learned about, joined and became actively involved in the VAAVC in 2021.

In 2015, Steven and his second wife, Jeannie, attended his 55th high school reunion in Belmont, CA, with both their service dogs in tow: Montera, his first hearing dog—a Labrador/Golden Retriever mix from [Canine Companions](#) (CCI), and

“My ministry is supporting military veterans, and the HLAA Virtual Veterans Chapter gives me the opportunity to hear about other issues with which I can help them,” he says. “I believe there are many veterans with hearing loss who would benefit from membership in HLAA and the VAAVC. Although the U.S. Department of Veterans Affairs (VA) provides first-rate equipment, it provides very little focused morale or emotional support to veterans with hearing disabilities. The HLAA Virtual Veterans Chapter has the potential to reach all those veterans with hearing loss who need us.”

Recently, Steven has joined with other VAAVC members to advocate for the VA to provide assistive technology like live captioning for online telemedicine services and activation of telecoils in VA-provided hearing aids, so that recipients may take advantage of [hearing loops](#) in public settings.

Hearing Dogs for Veterans

Steven and Zochi.

Steven received Zochi, his second hearing assistance dog, from CCI in June 2022, and is an enthusiastic proponent of the organization. As a team, they are often invited to attend local military fundraisers, including an annual veterans' charity golf tournament each November.

Steven encourages other veterans, both with and without hearing loss, to consider getting a service dog, and often helps them apply for the Service Dog Veterinary Health Insurance Benefit (VHIB), a special VA program that provides veterans with veterinary care and medications for their service dogs.



“It’s important to know that eligibility for this program is restricted to service dogs that have been trained and gifted by a nonprofit member organization of [Assistance Dogs International](#), like Canine Companions. A medical doctor must recommend the veteran and their dog and demonstrate that there is no more suitable assistive technology available to them through the VA. Because benefits are not retroactive, they need to apply for the program as soon as they get their service dog.”

HCAA Salutes and Supports Our Veterans

The mission of the HCAA Veterans Across America Virtual Chapter is to provide education, be an advocate for veterans with hearing loss and provide a support system to help them to return and adjust to civilian life.

Hearing loss and tinnitus are the most common military service-connected disabilities, affecting an estimated [3.6 million American veterans](#). If you are a veteran with hearing loss, or serve as a caregiver, you are invited to attend the online VAAVC meetings, every third Tuesday of the month. [Visit our website](#) for more information and [join the online discussion forum](#).

Any veteran who would like to attend the annual HCAA Convention for the first time will have their registration fee waived—please reach out to convention@hearingloss.org.



By Teri Breier, communications specialist, [Hearing Loss Association of America](#). Thank you for your story Teri!

**We need your help! Can you volunteer? Contact us at:
info@hearinglosseb.org**

Here is a list of volunteer positions we are seeking to fill:

- **Volunteer Coordinator**: Contact people who said they could volunteer and tell them about volunteer needs. Recruit for those positions.
- **Outreach Coordinator**: Organize a table for our chapter at various street fairs and other venues. Set up the table. Recruit volunteers to help with the events. Reach out to people who participate in our meetings. Let people know about our chapter.
- **Program Team**: Work with Robin Miller to contact potential speakers and arrange for them up to speak at one of our meetings.
- **Just want to help?** All of our committees need helpers! All volunteers are welcome!

East Bay Leadership Team

The chapter is run by a Steering Committee, Acting Leader: Len Bridges
Outreach, National Chapter Coordinator/Liaison: Linda Gee, linda.gee4@gmail.com
Treasurer: Len Bridges, lenbridges3993-hlaa@outlook.com
Programs: Robin Miller, robin@robinmillerlaw.com
Technology and AfterWords Small Group: George Chin, Sr., georgechinsr@gmail.com
Membership: Connie Gee, cbgee2014@yahoo.com; Marlene Muir, muircmc@comcast.net
Volunteer Coordinator: (need a volunteer)
Newsletter Editors: Nancy Asmundson, nasmundson@comcast.net; Kathy Fairbanks, mkathyfairbanks@att.net
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Website updates: George Chin, Sr., georgechinsr@gmail.com; Peter G. Townsend, peterg.townsend@gmail.com

JOIN HEARING LOSS ASSOCIATION OF AMERICA (HLAA) – THEY ADOCATATE FOR YOU!

NEW on hearingloss.org: Your decision to do something about your hearing loss begins with understanding what is happening. The Hearing Loss Association of America contracted with Knowlera Media to produce a series of seven, four-minute, captioned videos on hearing loss. Information you need to be adequately briefed on the topic is all in one place in an easy-to-access format. If you think you have a hearing loss or know someone who does, please point them to the videos where hearing health care professionals and people with hearing loss talk about what you can do about it.

Go to this URL to join: <https://www.hearingloss.org/make-an-impact/become-a-memberrenew/>

OR, if you prefer to pay by check or card thru the mail, Nancy Asmundson has membership forms to send to you, or contact HLAA at 301-657-2248 or e-mail membership@hearingloss.org. Your membership form & payment go to HLAA, 6116 Executive Blvd., Suite 320, Rockville, MD 20852.

COSTS: Regular Membership/year (will receive *Hearing Life* magazine in print and digital format): Individual - \$45; Couple/Family - \$55; Professional - \$80; Nonprofit - \$80;

Veteran Membership: Complimentary 1-Year Regular Membership & Lifetime Online Membership.