November 2017

Hearing Loss Association of America

North Shore of Long Island Chapter

Meeting Location

Long Island Jewish Hearing & Speech Center is located on the grounds of the Long Island Jewish Medical Center.
Enter the grounds from LAKEVILLE ROAD and it is the first building on your left. Free parking is available behind the hearing and speech building: first entrance to parking lot after building. DO NOT go into the main parking building. Go to the Conference room on the Lower Level
270-05 76th Avenue
New Hyde Park,
NY 11040.

If you are in doubt as to whether there is a meeting, or if you'd like further information, please call Sal: 516-331-0231.

Meeting News

Wednesday, November 15, 2017

Refreshments and Social Time begins 6:30pm.

Meeting begins 7:00pm.

Topic: Medical Settings: Know Your Rights!

Your healthcare providers are responsible to give you the best and safest care possible. What can YOU do to make sure you can actively participate, communicate effectively, and make informed decisions in all healthcare settings? What can you ask for? And what doctors, hospitals, and other medical facilities need to provide. Know your rights and your responsibilities.

Speaker: Jody Prysock

Jody Prysock is in private practice as a nationally certified sign language interpreter with a focus working in mental health settings. It is through her former role as director of Language, Cultural & Disability Services at a large urban, academic medical center that Jody was first made aware of the significant challenges for people who are hard-of-hearing or deaf who do not communicate in sign language. As she listened to the stories of patients and families, she realized there was a great need to change the culture and practice of providing care. This is when her advocacy work and education to ensure effective communication broadened to include *all* deaf and hard-of-hearing people. Jody is co-author of the *Guide for Effective Communication* available on HLAA's website.

Hearing Loss Association of America
North Shore of Long Island Chapter

Voice: 516-331-0231
http://hearingloss-longisland.org
hlaalongisland@gmail.com

Serotonin May Worsen Tinnitus

Millions of people suffer from the constant sensation of ringing or buzzing in the ears known as tinnitus, creating constant irritation for some and severe anxiety for others. Research shows why a common antidepressant medication may worsen the condition.

By: Oregon Health & Science University: http://bit.ly/2wmsgFh

The study, to be published Aug. 22 in the journal *Cell Reports*, focused on the action of serotonin, an important neuromodulator in the brain. Researchers examined brain tissue in mice, specifically the dorsal cochlear nucleus where sensory integration and tinnitus occurs. Researchers discovered that neurons known as fusiform cells within this portion of the brain become hyperactive and hypersensitive to stimuli when exposed to serotonin.

"We saw that the activity of those neurons went through the roof," said senior author Laurence Trussell, Ph.D., a professor of otolaryngology in the OHSU School of Medicine and scientist in the OHSU Vollum Institute.

If the findings bear up to additional research, the study could have implications for a common class of antidepressants known as selective serotonin reuptake inhibitors (SSRI). SSRIs can alleviate symptoms of moderate to severe depression and anxiety by increasing the level of serotonin in the brain. Serotonin is a chemical compound that acts as a neurotransmitter thought to be responsible for maintaining mood balance.

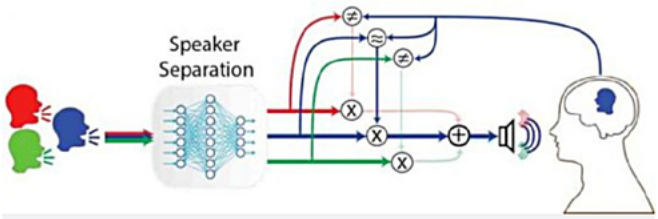
However, the research suggests that SSRIs prescribed to treat anxiety or depression may sometimes worsen patients' tinnitus. Tinnitus is defined as the chronic perception of sound when there is no internal or external acoustic source.

Continued on Page 5

Cognitive Hearing Aid Filters Out The Noise

Major advance made in helping the hearing impaired follow a conversation in a noisy environment: new method brings cognitive hearing aids a step closer to reality.

By Science Daily: http://bit.ly/2gZV1hX



A cognitively controlled assistive hearing device can automatically amplify one speaker among many. To do so, a deep neural network automatically separates each of the speakers from the mixture, and compares each speaker with the neural data from the user's brain. The speaker that best matches the neural data is then amplified to assist the user.

Credit: Nima Mesgarani/Columbia Engineering

People who are hearing impaired have a difficult time following a conversation in a multi-speaker environment such as a noisy restaurant or a party. While current hearing aids can suppress background noise, they cannot help a user listen to a single conversation among many without knowing which speaker the user is attending to. A cognitive hearing aid that constantly monitors the brain activity of the subject to determine whether the subject is conversing with a specific speaker in the environment would be a dream come true.

Using deep neural network models, researchers at Columbia Engineering have made a breakthrough in auditory attention decoding (AAD) methods and are coming closer to making cognitively controlled hearing aids a reality. The study, led by Nima Mesgarani, associate professor of electrical engineering, is published in the *Journal of Neural Engineering*. The work was done in collaboration with Columbia University Medical Center's Department of Neurosurgery and Hofstra-Northwell School of Medicine, and Feinstein Institute for Medical Research. DEMO: http://naplab.ee.columbia.edu/nnaad.html

Mesgarani's team developed an end-to-end system that receives a single audio channel containing a mixture of speakers by a listener along with the listener's neural signals, automatically separates the individual speakers in the mixture, determines which speaker is being listened to, and then amplifies the attended speaker's voice to assist the listener—all in under 10 seconds.

"This work combines the state-of-the-art from two disciplines: speech engineering and auditory attention decoding," says Mesgarani, who is also a member of the Data Science Institute and the Mortimer B. Zuckerman Mind Brain Behavior Institute. "We were able to develop this system once we made the breakthrough in using deep neural network models to separate speech."

His team came up with the idea of a cognitively controlled hearing aid after they demonstrated it was possible to decode the attended target of a listener using neural responses in the listener's brain using invasive neural recordings in humans (Nature 2012). Two years later, they showed they could decode attention with non-invasive methods as well (Cerebral Cortex 2015).

Continued on Page 5

If You're New, This is for You!

More than 48 million people in the US have a hearing loss, which can hinder daily communication. By age 65, one in three Americans has a hearing loss. This invisible condition affects the quality of life of the individuals with hear loss, as well as family, friends, coworkers and everyone with whom they interact. HLAA believes people with hearing loss can participate successfully in today's world.

Founded in 1979, the mission of HLAA is to open the world of communication to people with hearing loss through information, education, support and advocacy.

HLAA is the nation's foremost membership and advocacy organization for people with hearing loss. HLAA publishes the bimonthly *Hearing Loss Magazine,* holds annual conventions, a Walk4Hearing, and more. Check out: www.HearingLoss.org

The North Shore Chapter is a dynamic group of individuals working together as a team. To join, please fill out the Membership Form in this newsletter. Welcome!

Serotonin May Worsen Tinnitus, *Continued from Page 2*

"If you're a physician treating a patient for depression who also has hearing loss or tinnitus, you may want to be careful about prescribing a drug that compounds their feelings of anxiety," said Trussell, who also suffers from tinnitus and, in addition to his other roles, has an appointment in the Oregon Hearing Research Center at OHSU. "The SSRI may be enhancing the thing you're trying to fix."

Lead author Zheng-Quan Tang, Ph.D., a senior postdoctoral fellow in Trussell's lab, noted that a review of existing scientific literature indicated that many patients reported an increase in tinnitus soon after they began taking SSRIs.

"Estimates vary, but at least 10 percent of the U.S. population is affected by tinnitus," Tang said.

The OHSU scientists are interested in exploring another area of research focused on a type of ion channel in the membrane of neurons that is activated by serotonin. If the scientists can determine a way to deactivate those channels, they may be able to allow the beneficial effects of antidepressants while limiting the severity of tinnitus.

The study was supported by the Hearing Health Foundation and National Institutes of Health grants NS028901 and DC004450.

Cognitive Hearing Aid Filters Out The Noise, *Continued from Page 3*

"Translating these findings to real-world applications poses many challenges," notes James O'Sullivan, a post-doctoral research scientist working with Mesgarani and lead author of the study. In a typical implementation of auditory attention decoding, researchers compare the neural responses recorded from a subject's brain with the clean speech uttered by different speakers; the speaker who produces the maximum similarity with the neural data is determined to be the target and is subsequently amplified. However, in the real world, researchers have access only to the mixture, not the individual speakers.

"Our study takes a significant step towards automatically separating an attended speaker from the mixture," O'Sullivan continues. "To do so, we built deep neural network models that can automatically separate specific speakers from a mixture. We then compare each of these separated speakers with the neural signals to determine which voice the subject is listening to, and then amplify that specific voice for the listener."

The team tested the efficacy of their system using invasive electrocorticography recordings from neurological subjects undergoing epilepsy surgery. They identified the regions of the auditory cortex that contribute to AAD and found that the system decoded the attention of the listener and amplified the voice he or she wanted to listen to, using only the mixed audio.

"Our system demonstrates a significant improvement in both subjective and objective speech quality measures—almost all of our subjects said they wanted to continue to use it," Mesgarani says. "Our novel framework for AAD bridges the gap between the most recent advancements in speech processing technologies and speech prosthesis research and moves us closer to the development of realistic hearing aid devices that can automatically and dynamically track a user's direction of attention and amplify an attended speaker."

Hearing Loss Association of America

7910 Woodmont Avenue, Ste. 1200
Bethesda, MD 20814-7022
Phone: 301.657.2248 • Fax: 301.913.9413
Email: membership@hearingloss.org
Website: www.hearingloss.org

Hearing Loss Association of America
North Shore of Long Island Chapter

HLAA opens the world of communication to people with hearing loss through information, education, support, and advocacy. HLAA is a 501(c)(3) organization.

MEMBERSHIP FORM

I'd like to: ☐ Become a member of HLAA ☐ Renew my membership ☐ Give a gift membership

My Membership/Renewal

Name: _____

Address: _____

City: _____ State: _____ Zip: _____ Country: _____

Email: _____ Phone: _____-_____-_____

Chapter I belong to: _____

How did you learn about HLAA?_____

Gift Membership

Name: _____

Address: _____

City: _____ State: _____ Zip: _____ Country: _____

Email: _____Phone: _____-_____-_____

	Annual USA Membership Fees	Annual Non-USA Membership Fees
Individual	☐ **$35 (1 year)** ☐ **$95 (3 years)** ☐ **$140 (5 years)**	☐ **$45 (1 year)**
Couple/Family	☐ **$45 (1 year)**	☐ **$55 (1 year)**
Professional	☐ **$60 (1 year)**	☐ **$75 (1 year)**
Library/Nonprofit	☐ **$50 (1 year)**	☐ **$75 (1 year)**
Student	☐ **$20 (1 year)**	N/A
Corporate	☐ **$300 (1 year)**	☐ **$325 (1 year)**

My membership fee is $ _____

Plus I'm adding a tax deductible donation of $ _____

My total is $ _____

3 Ways to Join, Renew or Give a Gift Membership

1. Return this form to your chapter with your check made payable to HLAA.
2. Mail or fax this form to the HLAA office at the address above with your credit card information.
3. Visit www.hearingloss.org/content/join and use your credit card online. (this is a secure website

Credit Card Payment Information: __American Express __Discover __MasterCard __VISA

Card Number: _____ Expiration Date _____ Security Code _____

Name: _____ (as it appears on card)

Signature: _____ (Include your billing address if different than membership address above.)

Revised 5/2014

Donating Hearing Aids to the Lions Club

By Michelle Gross

If you have used hearing aids to donate, please address the package to:

John McNamara, Au.D., Ontario Hearing
2210 Monroe Ave., Rochester, NY 14618
Put on the lower left corner of the package:
"Finger Lakes Region Lions Club"

(Cleaning tools, cases, most accessories, etc. have virtually no value and are discarded.) Aids that are usable are cleaned and checked and made ready for sending to the Lions Club for qualified recipients.

You can obtain a receipt for your donation (for tax purposes) but **you must request it**. And, thanks for considering donating your used aids.

Hearing Loss Association of America
North Shore of Long Island Chapter
http://hearingloss-longisland.org

Sal Sturiale
80-38 212 Street
Hollis Hills, NY 11427

RETURN SERVICE REQUESTED

Babies With Hearing Loss Form Better Vocabulary With Early Intervention

Babies with hearing loss who are diagnosed by three months and receive interventions by six months have broader vocabularies than those treated later, a new study found. It also found that nearly half don't meet early intervention guidelines.

By Science Daily

Children with hearing loss who are diagnosed by 3 months of age and receive interventions by 6 months develop a far greater vocabulary than those whose diagnosis and treatment come later, according to a CU Boulder study published this week in the journal *Pediatrics*. Yet 17 years after early detection guidelines were established, nearly half of babies with hearing loss aren't meeting them, the study found.

"We still have some work to do," said lead author Christine Yoshinaga-Itano, an audiologist and research professor in the Institute of Cognitive Science. "Because the brain is so pliable in those early months, the sooner we can get them diagnosed and get them access to language, the more likely they will be able to develop on track with their peers."

To read more, please go to: http://bit.ly/2h5OMg0