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Immerse Yourself in a Special Exhibition at NC Museum of Natural Sciences

The HLAA Wake Chapter invites you along with your spouse or another friend to experience the **James Cameron – Challenging the Deep** special exhibition at the [North Carolina Museum of Natural Sciences](#) in downtown Raleigh on Saturday, April 29.

The chapter has arranged a special-rate group admission to the exhibition, which takes you into a deep-ocean environment using cinema-scale projections (that include captions), artifacts and specimens from explorer and filmmaker James Cameron's expeditions to the shipwrecks of the Titanic and the German battleship Bismarck. You'll also see original film props and costumes from "The Abyss" and "Titanic," including the iconic Heart of the Ocean diamond.



Our exhibition entry time is 1:00 p.m. You will be free to explore the exhibition at your own pace. Anyone interested in eating lunch prior to the entry time is welcome to meet in the museum's Acro Café (fourth floor of the Nature Exploration Center) at noon. The museum also is featuring showings of the [DeepSea Challenge](#) movie in its WRAL 3D Theater. Show times for the 40-minute movie are 11 a.m. and 3 p.m.

Advance registration for the exhibition is required. Send an email to Steve Latus (slatus@comcast.net) by April 15 indicating how many tickets you wish to purchase.

You will pick up and pay for your tickets when you arrive at the museum. Our group rate is \$10 plus tax per exhibition ticket. There is an additional charge for a ticket to the DeepSea Challenge movie.

The museum's main entrance is located in its Nature Exploration Center at 11 West Jones Street. There is abundant parking near the museum, and it's free on weekends.

Don't miss this opportunity to meet or reconnect with chapter friends and enjoy the special exhibition!

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[Upcoming Meetings and Events \(Continued\)](#)

HLAA National 2023 Convention: The 2023 HLAA national convention will be held June 29 - July 1 in New Orleans. There will be so many great presentations you can choose from that it is often difficult to decide which to attend. The huge vendor area will be filled with companies and non-profits introducing their products and services ... often letting you try them out.

Finally, one of the greatest benefits of the convention is the chance to meet hundreds of others and instantly feel that you are kindred spirits with your shared interests in hearing loss learning and advocacy. Plus, New Orleans is one cool city to visit. See the [HLAA 2023 Convention web page](#) for details and plan your 2023 summer adventure.



[Chapter Scholarship Program Applications Under Review](#)

The selection committee is reviewing applications for the 2023 Hearing Loss Association of America (HLAA) Wake Chapter Scholarship Program and will announce one or more recipients before the end of April.

High school seniors with moderate hearing loss or more who reside in Wake County and are seeking acceptance at an accredited university, college or community college are eligible to apply for the program. The \$500 scholarship is a one-time award.

The generous support of participants in the North Carolina Walk4Hearing, a hearing health awareness and fundraising event conducted by HLAA, makes the scholarship program possible.

[2023 Bluetooth® Market Update](#)

Previous Wake Chapter Newsletters have covered the future of Bluetooth Low Energy (LE), but the Bluetooth SIG (short for "Special Interest Group") has released a report that provides some insight into how the market is transitioning from traditional Bluetooth to Bluetooth LE. Manufacturers and installers of Bluetooth devices are dealing with which type of Bluetooth transmitters and receivers to include in their products as users are deciding which devices to buy.

Over the next few years, manufacturers of audio transmitters could include either standard or LE versions of Bluetooth, but many audio sources may include both types of Bluetooth in TVs, radios, cars, movie theaters, live theaters, churches, and other public venues. Manufacturers of user devices (such as ear buds, headphones, speakers, hearing aids and cochlear implants) will include whichever Bluetooth receivers best meet the needs of their customers.

Time will tell, but if you'd like to learn more about what might happen in the future, you can read the Bluetooth SIG's [2023 Market Update](#).

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Tech Focus: Types of Hearing Devices

There are many types of hearing devices that can help you hear better. Here are several different types.

Hearing Aids That Amplify Sounds To Your Eardrum: These are the most common types of hearing aids. These hearing aids rely on a mostly working cochlea ... that is a cochlea with mostly working hair cells. They can be useful for sensorineural losses and for conductive losses where enough cochlear and conductive function exists. They come in various styles including:

- **Small Models That Fit In Your Ear Canal:** These are available in various sizes but are often small enough that they may lack certain desirable features like telecoils, Bluetooth, rechargeable batteries, and directional microphones. These aids must be custom molded to match your ear canal.
- **In The Ear Aids That Fit In The Pinna:** ITE models usually fill the area in the pinna (the outer part of your ear). They may have more features, but often lack the same features missing in canal-type aids.
- **Behind The Ear Models:** BTE models have everything (microphones, amplifier, and “receiver”) behind the ear except for a hollow tube to a dome or ear mold in your pinna or ear canal. These are generally small, but can offer most or all of the features missing in the smaller aids.
- **Receiver In The Canal Models:** RIC aids look like BTE aids, but the “receiver” (the part that converts the amplified electrical signal to actual sound) is not in the part behind the ear, but in the canal as part of a “dome” or a custom ear mold. A very thin wire connects from the BTE piece to the receiver.
- **Single Use Aids:** One brand of hearing aid (Lyric) is a deeply in-the-canal aid that is installed by your audiologist and not removed until a few months later when the battery dies. You must replace the aid.

Middle Ear Implanted Hearing Aids: A MEI uses an external processor attached magnetically to a surgically implanted device behind the ear. The processor amplifies the sound vibrations and sends that signal to the internal device which then causes a tiny transducer to vibrate the ossicles (hammer, anvil and stirrup) in the middle ear. These hearing aids rely on a structurally functional middle ear, and mostly functional cochlea ... that is a cochlea with enough working (but possibly impaired) hair cells.

Totally Internal Hearing Aids: One type of hearing aid is totally implanted. A processor is placed under the skin and receives electrical signals sent by a tiny transmitter attached to your ossicles. The processor then sends the amplified signal back to a transducer that transmits the vibrations to your good cochlea.

Bone Anchored Hearing Aids: Bone anchored hearing aids have an external processor that vibrates the mastoid bone causing hair cells in the cochlea to be stimulated. Some bone anchored hearing aids are externally attached to a titanium transdermal screw in the mastoid bone. Newer bone anchored hearing aids are attached by a magnet to a surgically implanted device that vibrates the mastoid bone. These conductive aids require at least one cochlea to have sufficient working hair cells and are used in two cases:

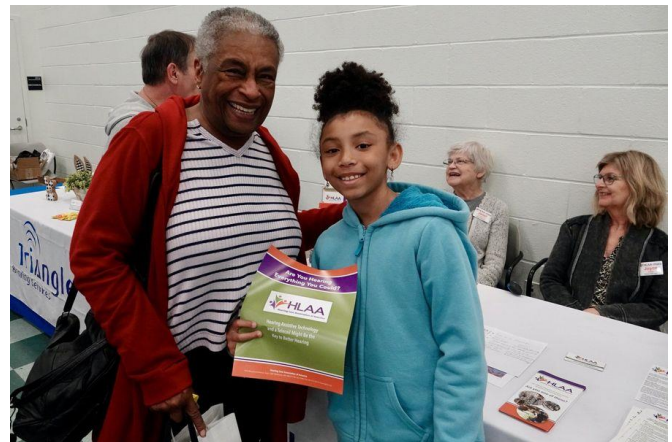
- Conductive losses where enough usable hair cells in the cochlea exist.
- Single sided deafness (SSD) where the aid is placed on the deaf side and stimulates usable hair cells by vibrations of the mastoid bone in either cochlea that still works.

Cochlear Implants (CIs): For profound losses and total deafness that the above hearing aids can't help, cochlear implants may be able to provide hearing. An external processor — either a BTE style or an “Off The Ear” (OTE) style — is connected to a surgically implanted device under the skin behind the ear. The internal device sends electrical signals electromagnetically through the skin to an electrode array that's inserted into the cochlea. The electrodes stimulate the nerve cells at the base of (mostly non-functional) hair cells. Those nerve cells send their signals up the auditory nerve to the brain, which interprets the signals as sounds. CIs completely bypass the most common causes of hearing loss (both conductive and sensorineural), and now provide usable (and in many cases, near normal) hearing for many people who are unable to benefit from hearing aids. CIs aren't an instant fix, but usually require time for the brain to learn (or relearn) how to process the new signals it hasn't had to deal with for a while (or ever). A similar device called an Auditory Brainstem Implant (ABI) works like a CI, but directly stimulates the brainstem for people that can't have a CI.

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Past Event: Cary Senior Center Health Fair

Several HLA Wake board members staffed the Wake Chapter table at the Cary Senior Center 2023 Annual Health Fair on March 31. Below are some photos from the popular event.



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