



HYPERACUSIS RESEARCH

Stop Noise-Induced Pain

Donor Newsletter

Volume 9, Winter 2022-23

Letter from the President of Hyperacusis Research

Dear friends and supporters,

It is with great sadness that we note the passing of our founder, Bryan Pollard. Bryan was a force of nature, single-handedly creating an entirely new diagnosis in the field of otology—pain hyperacusis—and working tirelessly on behalf of those who suffered from it. He started the Hyperacusis Research foundation and became the most prominent patient-activist and driving force for promoting research focused on this condition. To honor Bryan's memory and enable scientists to further their knowledge of hearing disorders, please consider signing up for an ear donation with the temporal bone registry at Mass Eye and Ear at <https://masseyeandear.org/tbregistry>.

Over the past 11 years, Hyperacusis Research has been on the front lines of sponsoring research on hyperacusis. We have been able to fund a \$100,000 grant every other year working with our partner, the Hearing Health Foundation. In 2022, a significant donation from the Gary Saltz Foundation brought our fundraising to \$64,000 through September 30, 2022.

We have set an ambitious goal of \$100,000 for our annual fundraising, which will enable us to fund an Emerging Research Grant every year instead of every other year. We are an entirely volunteer organization, and 91% of our income goes directly to research.

Our current grant recipient, Megan Beers Wood, Ph.D., of Johns Hopkins University, is researching causes of painful hyperacusis. Details of her research are on the next page of this newsletter.



*Michael Maholchic,
President of
Hyperacusis Research*

This year we have added three new members to our Scientific Advisory Board (SAB) and given it new responsibilities. The SAB will have a voting representative in awarding our research grants with our partner, the Hearing Health Foundation, and will select the recipient of a \$1,000 Bryan A. Pollard award for contributions to research.

The Midwinter meeting of the Association for Research in Otolaryngology will feature discussions on hyperacusis. During the five-day conference, we will host informal gatherings in addition to scheduled symposia.

We continue to spread the word about the reality of hyperacusis and research the causes of this condition, and pathways to a cure. We aim to double the pace of research and award a grant every year. Our small, all-volunteer non-profit is getting close to that goal, and with your help we can achieve it.

Thank you,

Michael Maholchic
President, Hyperacusis Research Limited
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Hyperacusis Research Supports 2022 Research Grant

Along with our partner, the Hearing Health Foundation, we have funded an exciting Emerging Research Grant for 2022. This grant demonstrates our commitment to uncovering the mechanisms associated with hyperacusis on our path to a cure. We are grateful for the donor support that makes this grant possible. The grant went to Megan Beers Wood, Ph.D., of the Johns Hopkins University School of Medicine, who is studying type II auditory nerve fibers as instigators of the cochlear immune response after acoustic trauma.

A subset of patients with hyperacusis experience pain in the presence of typically tolerated sound. Little is known about the origin of this pain. One hypothesis is that the type II auditory nerve fibers (type II neurons) of the inner ear may act as pain receptors after exposure to damaging levels of noise (acoustic damage). Dr. Wood's lab has shown that type II neurons share key characteristics with pain neurons: They respond to tissue damage; they are hyperactive after acoustic damage; and they express genes similar to pain neurons, such as the gene for CGRP- α . Type II neurons, however, are not the only cell type that responds to acoustic damage. The immune system responds quickly after damaging noise exposure. In other systems of the body such as the skin, CGRP- α can affect immune cell function. This project looks at the expression of CGRP- α in type II neurons after noise exposure. CGRP- α is blocked during noise

"Patient stories are very helpful in our trying to understand the human perception of noise-induced pain. It is really important to understand what people are experiencing and to learn what has helped, like protecting their hearing."

Quote from [interview with Dr. Wood](#) on our website.

exposure to see if this affects the immune response to tissue damage.



Megan Beers Wood, Ph.D., Johns Hopkins University

The long-term goal is to understand the role of CGRP- α in the neurons and immune response of the inner ear, which may illustrate a role for type II neurons in pain and inflammation following tissue damage. CGRP- α has been a target for therapeutics for painful conditions such as migraine, making it an attractive therapeutic target for pathologies of the inner ear.

Overview of the 2022 ARO Ear Research Meeting

The annual mid-winter meeting of the Association for Research in Otolaryngology (ARO), where research scientists gather to present and discuss new findings, was held in February 2022. The mission of ARO is to encourage and promote basic research in otolaryngology, hearing and balance, and related fields.

While in-person ARO attendance was still affected by the Covid pandemic, Hyperacusis Research attended relevant presentations with great interest. Dr. Iver Juster, the Chair of the Scientific Advisory Board, prepared a detailed overview. The conference touched on a wide range of topics and perspectives important to understanding—and potentially

treating—hyperacusis. The understanding of hyperacusis will greatly benefit from research in genetics, metabolism, immunology, pharmacology, neuroscience, anatomy, and how all of the above influence perception and its interpretation. Everything in science is in some way connected, so you might think of these categories as faces of the same mountain, Dr. Juster writes.

As always, ARO not only presented fascinating research directly or potentially relevant to hyperacusis, but also both illuminated and raised questions about the extent to which basic science research methods do or can illuminate the biology and the varied expressions of the human condition.

Dr. Juster's full write-up of the 2022 ARO meeting may be found at this link: <https://hyperacusisresearch.org/overview-and-key-questions-from-the-2022-aro-ear-research-meeting/>.

Tributes to Bryan Pollard, Founder of Hyperacusis Research

As most friends of Hyperacusis Research are aware, Bryan Pollard sadly passed away in May 2022.

Our tribute to our beloved founder appears in the summer issue of the magazine of our partner, the Hearing Health Foundation. Our gratitude toward Bryan, and our love for him, will always remain unbounded.

"Especially important was his influence on changing the harmful myth that quiet was bad for patients with hyperacusis, and his emphasis on the importance of avoiding setbacks, which result from additional noise exposure."

Click this link to read the full text of the tribute: <https://hyperacusisresearch.org/wp-content/uploads/2022/07/HHF-Bryan-Pollard-In-Memorial.pdf>.

Another tribute to Bryan appeared in Tinnitus Today, the magazine of the American Tinnitus Association: <https://issuu.com/tinnitustoday/docs/tinnitustoday-summer2022-07-web>.

Patient Stories from Hyperacusis Central



Hyperacusis Central was created by a group of hyperacusis patients to improve awareness of the condition. We at Hyperacusis Research applaud their efforts and encourage visits to their blog site (with written patient stories) and their YouTube channel (with video patient stories).

The written stories are found at this link: <https://hyperacusiscentral.blogspot.com/>. The video stories are found at this link: <https://www.youtube.com/c/HyperacusisCentral>.

The video stories have closed captions, so those who cannot listen may safely watch the videos by turning the volume to low or zero and enabling the captions.

Looking Ahead to 2023

Our work is made possible thanks to your generous support. In 2023, we plan to continue our work to raise funds to award grants for research.

As always, we are grateful for contributions by check mailed to our address (printed on the last page of this newsletter) and for online contributions by credit card via our website, www.hyperacusisresearch.org and via our Facebook page, facebook.com/hyperacusisresearch.

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