

Dr. Ebenezer Yamoah: Remarkable Physical Properties of Hair Cells and Auditory Neurons

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/EINPresswire.com/ -- As a current Professor of Physiology and Cell Biology Director in the Communication Science Program at the University of Nevada, Reno School of Medicine, [Dr. Ebenezer Yamoah](#) [has emerged as a leading expert in the field](#) of Age-Related Hearing Loss, or ARHL, and how auditory neurons, and their connections to hair cells, can play a part in reversing deafness.

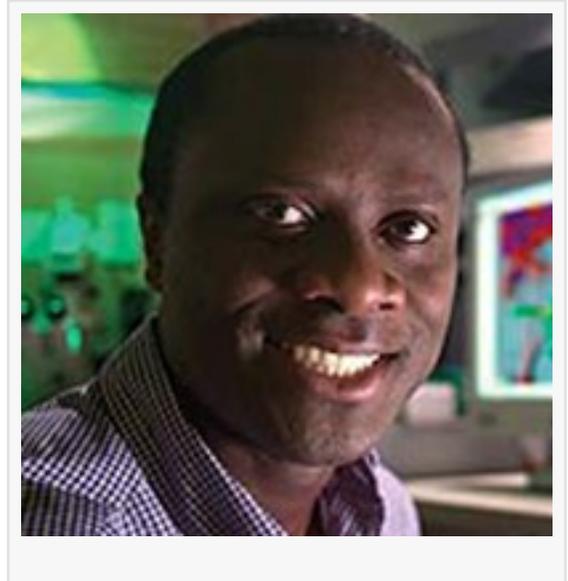
Age-related hearing loss has become the most common sensory deficit, says Dr. Yamoah, "[and] 30% of people over 65 have some form of hearing deficit, a condition shown to have devastating consequences on quality of life."

Dr. Ebenezer Yamoah's findings are a part of his most current research project, Investigating Mechanisms of the Aging Auditory Neuron, a study funded by the National Institute of Aging (NIA), a part of the National Institute of Health (NIH), that began in 2016, with a targeted end date of May 2021.

Hair Cells | Dr. Ebenezer Yamoah

Says Dr. Ebenezer Yamoah, "The inner ear is structured like an orchestral platform where the symphonic sections play distinct functions. The aging sensory epithelia in the inner ear may succumb to weakening tight junctions between hair cells and their supporting neighboring cells. This may result in the breakdown of the machinery that allows the exquisite sensitivity of hair cells and their neurons to function properly, contributing to hearing loss."

In his ongoing studies, Dr. Yamoah has sought to determine the physiological neural mechanisms of ARHL, identify candidate genes involved, and demonstrate strategies necessary to counter ARHL. This research builds upon years of work from Dr. Yamoah to pave the way towards utilizing stem cells to restore inner ear cells' functions.



Dr. Ebenezer Yamoah has recently stated that "to our surprise, we found latent neuronal degeneration of afferent spiral ganglion neuron (SGN)-hair cell (HC) synapses before any apparent manifestation of outer hair cell (HC) bundle disruption and HC loss, using a recognized and distinct ARHL mouse model...We hypothesize that silent neuronal and synaptic degeneration may be the preeminent target to alleviate ARHL."

[In a September 2020 seminar, Dr. Ebenezer Yamoah explained that](#) the primary issue that he and his team are fighting against is that our bodies cannot restore them when human inner ear hair cells degenerate. Thus, the quest for alternative cell sources began as a means to potentially eradicate ARHL, something that could benefit the 10% of the population that experiences some hearing loss in their lifetime, whether it be from genetics, infections, drug use, trauma, and age.

Recurring Presentations and Lectures | Dr. Ebenezer Yamoah

A leading voice in the scientific community regarding ARHL, [Dr. Ebenezer Yamoah has traveled the world many times over to do](#) presentations and professorial lectures, including the University of Iowa, the Association for Research in Otolaryngology in San Diego, Northeast Ohio School of Medicine, as well as abroad at the University College of London and the University of Bordeaux in France. Dr. Yamoah's research and development have potentially life-altering implications and may change humans' relationship with debilitating hearing.

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