DEPARTMENT OF CHEMICAL AND BIOCHEMICAL ENGINEERING

Translational Research for Auditory Pathologies

Biotherapeutic Interventions for Sensorineural Hearing Loss:

- Currently, there are no drugs for any type of hearing loss, including age-related hearing loss, noise-induced hearing loss, and drug-induced hearing loss – ototoxicity.
- We aim to develop the pre-clinical regimes leading to successful clinical trials for a particular type of hearing loss.

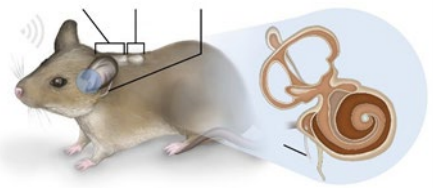
Developing Clinically Relevant Imaging Protocols for Inner Ear Functionality:

- We are developing the imaging protocols to identify and develop new diagnostics tools for hearing loss
- The imaging techniques in focus are nuclear/molecular imaging techniques – SPECT and PET, and fMRI.

Research Programs Geared Toward Smarter Solutions of Sensorineural Hearing Loss

Identifying Early Biomarkers for Hearing Loss

Drug discovery for hearing loss



Microsystems for localized drug delivery

Next-Generation Thermo-Electric Cochlear Implant Devices

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Keywords:

- Sensorineural Hearing Loss, Aging, Noise-Induced Hearing Loss, Pre-Clinical Research, *In-Vivo* and *In-Vitro* Electrophysiology, Molecular Biology, Next-Generation Biomedical Devices, RT-PCR, Western Blotting, Immunohistochemistry, Microsurgery, *In-Vivo* small animal imaging
- Links to Publications

Selected Honors:

- University of South Florida (USF) Dissertation Completion Fellowship – 2016
- USF 3-Minute Thesis Award – 2015