

Dept. of Biochemistry and Biophysics  
Spring 2021 Seminar Series Presents:

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# MIKE WEHR, PH.D.

## UNIVERSITY OF OREGON

What goes wrong with the auditory  
system in Alzheimer's disease?

Register here: <https://beav.es/J6Q>



Dr. Mike Wehr

**Biography** — Inspired by the communication deficits that are a hallmark of Alzheimer's disease, recent work has shown that processing of complex sounds is affected early in the progression of the disease. This could be very useful as an early diagnostic tool, which will be critical if we want to detect Alzheimer's before irreversible damage is done. What causes these early deficits? To get at this question, we've been looking at sound perception in a mouse Alzheimer's model. We find that mice show very early perceptual deficits, long before the appearance of amyloid plaques or cell death. Electrophysiological recordings show profound sound processing deficits in auditory cortex. A comprehensive look at amyloid pathology shows that the problems start very early in auditory cortex, before spreading to other auditory regions. Since this happens long before cell death, it suggests that something is going wrong with synapses, which would disrupt network function. To test this idea, we're now starting to use large-scale 2-photon imaging to look broadly at activity across auditory and other sensory, parietal, and motor areas of cortex. In particular we're interested in functional connectivity within and between auditory cortex and other cortical areas, to try to understand at a cellular and network level what is causing the "disconnection syndrome" that has been seen with fMRI brain imaging in Alzheimer's patients.

**WEDNESDAY, MAY 19th**

**3:00 P.M.**

Host: Dr. Fritz Gombart



Accommodations for disabilities may be made by contacting [tony.reyna@oregonstate.edu](mailto:tony.reyna@oregonstate.edu).

<https://biochem.oregonstate.edu/>