



## Institute colloquium

# Institute Colloquium: Listening to the ear

**George Zweig**

Massachusetts Institute of Technology

Host:

Information in sound is coded by the cochlea into a form appropriate for analysis by the central nervous system. The mechanics of the cochlea initiates the coding process by providing a distributed, active (energy producing), nonlinear medium in which forward traveling waves set up by sound compete for amplification and neural representation. Measurements of traveling waves are used to deduce the equation governing their propagation. Forward traveling waves are partially reflected from random mechanical inhomogeneities, creating backward traveling waves. What is not reflected at the stapes appears as sound in the ear canal. Such otoacoustic emissions, when measured, enable both a test of theory, and an accurate non-invasive determination of the mechanical state of the cochlea during the normal course of hearing.

**Monday, September 15, 2014 04:30pm - 05:30pm**

Raiffeisen Lecture Hall, Central Building



This invitation is valid as a ticket for the ISTA Shuttle from and to Heiligenstadt Station. Please find a schedule of the ISTA Shuttle on our webpage: <https://ista.ac.at/en/campus/how-to-get-here/> The ISTA Shuttle bus is marked ISTA Shuttle (#142) and has the Institute Logo printed on the side.