



NORTHWESTERN INSTITUTE
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NORTHWESTERN
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**Northwestern Institute on Complex Systems
invites you to its**

Weekly Seminar

- Speaker:** Sumitrajit Dhar, Assistant Professor,
Communication Sciences and Disorders
- Title:** Spontaneous otoacoustic emissions: A non-invasive window
into cochlear mechanics
- When:** Wednesday, January 31, 2007
- Where:** Chambers Hall, 600 Foster Street, Lower Classroom Level
- Time:** 12:00 – 1:00

***A light lunch will be available and a NICO Coffee Hour will follow for questions,
networking, and collaboration***

Abstract

The acute sensitivity and sharp frequency selectivity exhibited by the peripheral auditory system led Gold (1948) to speculate about an active element in cochlear mechanics which could generate sounds "if the feedback ever exceeded the losses". Kemp (1978) successfully recorded such signals by placing a sensitive microphone in the ear canal and otoacoustic emissions (OAEs) have since served as a promising tool for exploring cochlear mechanics.

We will discuss current models of OAE generation and explore experimental results in support of these models. Our discussion will be based on spontaneous OAEs, which are generated in the cochlea without any external stimulation. Our recent work demonstrates dynamic elements of cochlear mechanics not reported before. We are also interested in developing clinical tools capable of detecting minor insults to cochlear physiology and will share recent results from our endeavors in that direction.

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