

**Department of Communication Sciences and Disorders  
COLLEGE OF ALLIED HEALTH SCIENCES**

**SUMMER RESEARCH OPPORTUNITIES  
FOR UNDERGRADUATE WOMEN**

**APPLICATION DEADLINE: March 2, 2009**

*The Department of Communication Sciences and Disorders is pleased to offer the following research project for the summer of 2009. Interested students are urged to contact the faculty member(s) directing the project that most interests them. By contacting the faculty member, you can discover more about the project, learn what your responsibilities will be and, if possible, develop a timetable for the twelve-week research period.*

**THE CORTICAL AUDITORY EVOKED POTENTIALS IN COCHLEAR IMPLANT USERS**

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**PROJECT DESCRIPTION**

**Cochlear implants (CIs) are surgically implanted electronic devices that provide auditory sensation to individuals with severe to profound hearing loss, who no longer benefit from hearing aids for understanding speech. Although most deafened individuals demonstrate significant improvements in speech understanding using a CI, the benefits across CI users vary widely.**

**Our research projects focus on the neural mechanisms underlying the large variability of speech understanding in CI users. Specifically, we investigate the auditory evoked potentials (AEPs), electrical activities from the auditory brain evoked by sounds, in CI users with various speech understanding capabilities. The correlation between neurophysiological responses and behavioral performance of speech perception will be determined. Results of our projects will provide important insights into the large variability in speech understanding in CI users observed clinically and lead to the identification of poor CI performers for additional rehabilitation using AEPs as objective tools. The latter is especially important for difficult-to-test patients such as small children whose behavioral performance is not reliable.**