

**Department of Aerospace Engineering and Engineering Mechanics
COLLEGE OF ENGINEERING**

**SUMMER RESEARCH OPPORTUNITIES
FOR UNDERGRADUATE WOMEN**

APPLICATION DEADLINE: March 1, 2010

The Department of Aerospace Engineering and Engineering Mechanics is pleased to offer the following research project for the summer of 2010. 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.

PROJECT TITLE: Acoustic Liners

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Project Description

Acoustic liners are used in the fan inlet, fan exhaust, and turbine exhaust ducts of high bypass turbofan engines for commercial aircraft. The liners absorb the sound generated inside the nacelle by aero and thermo-acoustic sources of noise. These sources are Fan and compressor noise, combustion noise and turbine noise. Acoustic liners attenuate the noise from these sources before it can radiate out of the engine. Thus, acoustic liners are critical to achieving the low noise targets imposed by noise rules and by certain airport authorities.

The selected student is required to have a strong background in Mathematics and an interest in experimental research. The research work will entail conducting experiments in the Acoustic Liner Research section of the Gas Dynamics and Propulsion Laboratory in Rhodes 300. The student will also be exposed to acoustic wave propagation theory and will develop, based on the theory, software in MATLAB to solve acoustical problems. The student will work with other coop students in the Acoustic Liner Research Lab under the direction of Dr. Asif Syed.