

COLLEGE OF ENGINEERING
Department of Biomedical Engineering

SUMMER RESEARCH OPPORTUNITIES FOR UNDERGRADUATE WOMEN
APPLICATION DEADLINE: MARCH 1, 2005

The Department of Biomedical Engineering is pleased to offer the following research project for the summer of 2005. 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.

Image-Guided Ultrasound Ablation

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The Biomedical Acoustics Laboratory at the Department of Bioengineering, University of Cincinnati, is a new laboratory devoted to research on use of sound for medical imaging, therapy, and monitoring of therapeutic procedures. A major focus is development of ultrasound-based devices and techniques for treatment of cancer, which will improve upon existing methods such as radiofrequency ablation. This approach will employ the same ultrasound arrays to image the target region of tissue, selectively kill targeted tissue by thermal ablation, and monitor the ultrasound therapy in real time to ensure complete, specific treatment.

In this summer project, the student will work with a novel image-guided ultrasound ablation system to perform experimental imaging and thermal ablation treatment on *ex vivo* tissue, investigating methods for optimizing this therapy and for monitoring therapy progress using ultrasound imaging.