

*Woodruff Nuclear & Radiological Engineering and  
Medical Physics Programs Seminar Series  
Georgia Institute of Technology*

**"HEAT TRIGGERED DRUG RELEASE FROM THERMALLY  
SENSITIVE LIPOSOMES: IMPLICATIONS FOR DRUG  
DELIVERY AND TUMOR PHYSIOLOGY."**

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**Thursday, February 5, 2009**

**Molecular Science & Engineering (MS&E), Room 3201A**  
*(901 Atlantic Drive – directly across from Neely building)*

**11:00 AM**

**Abstract**

The distinction between the fields of radiation and medical oncology are continually becoming more ambiguous, as chemotherapy plus radiation is commonly becoming the standard of care for many cancers. Importantly, the administration of one therapy can impact the tumor environment, thus relaying consequences for the next therapy. For instance, a chemotherapeutic given prior to radiation *may* change the oxygenation state of the tumor, thus affecting the imparted radiation damage. One current chemotherapeutic advancing into clinical trials is doxorubicin loaded into thermally-sensitive liposomes and delivered concomitantly with hyperthermia. This treatment has shown dramatic anti-tumor effects, but little is known about the drug delivery mechanisms and their possible affect on tumor physiology. We investigate the implications of this delivery system on drug delivery kinetics as well as its consequences for tumor vasculature and hypoxic response. As the clinical trials move forward, this information could be used to guide radiotherapy sequencing.

**Biosketch**

**Ashley Manzoor** is a current fourth year Medical Physics Ph.D. student at Duke University in the Department of Radiation Oncology. She is a graduate of Georgia Tech (Nuclear and Radiological Engineering '05) and a former Fellow in the Radiation Studies Branch of the Centers for Disease Control and Prevention (CDC). She is national co-chair of the New Investigators in Thermal Science section for the Society of Thermal Medicine. Her research interests include hyperthermia, drug delivery, and in-vivo imaging of the tumor microenvironment, particularly with respect to hypoxia and angiogenesis.

*Refreshments will be served*