"Transport Barriers in the Tumor Microenvironment: Designing biomaterial-based nanotechnology for immuno-therapeutic drug delivery to sentinel lymph nodes"

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Refreshments at 3:30, 204 Thurston Hall

Abstract: The transport of fluids, biomolecules and cells from the tumor microenvironment to draining lymph nodes and into the circulation is facilitated by the concerted influence of the blood and lymphatic vascular systems. Our efforts to characterize the impact of these transport processes on disease progression, in particular by regulating both metastasis and adaptive immunity, as well as to develop novel therapeutic approaches for tumor therapy that mitigate these effects, will be described.

Biographical Sketch: Susan Napier Thomas is an Assistant Professor of Mechanical Engineering in the Institute of Bioengineering and Bioscience at the Georgia Institute of Technology where she holds adjunct appointments in Biomedical Engineering and Biology and is a member of the Winship Cancer Institute of Emory University. Prior to this appointment, she was a Whitaker postdoctoral scholar at École Polytechnique Fédéral de Lausanne (Swiss Federal Institute of Technology - Lausanne) developing nanomaterials for cancer immunotherapy and studying the role of lymphatic transport in immunity. Dr. Thomas received her B.S. in Chemical Engineering sum laude from the University of California Los Angeles and her Ph.D. in Chemical & Biomolecular Engineering from The Johns Hopkins University where she studied the role of fluid flow in regulating blood-borne metastasis and identified novel biomarkers for the detection of metastatic colon cancers. For her contributions to the emerging field of cancer immunoengineering, she was honored with the Rita Schaffer Young Investigator Award from the Biomedical Engineering Society in 2013, "in recognition of high level of originality and ingenuity in a scientific work in biomedical engineering." Her interdisciplinary research program has been supported by the National Cancer Institute, the Department of Defense, the National Science Foundation, and the Susan G. Komen Foundation, amongst others.