Susan Thomas

Associate Professor, Associate Director for Integrated Research Center, Mechanical Engineering at Georgia Tech College of Engineering

Atlanta, GA, US

Susan Thomas is an expert on the role of biological transport phenomena in physiological and pathophysiological processes.

Biography

Dr. Thomas joined Georgia Tech in November 2011 as an Assistant Professor. Prior to this appointment, she was a Whitaker postdoctoral scholar at École Polytechnique Fédéral de Lausanne (one of the Swiss Federal Institutes of Technology) developing nanomaterials for cancer immunotherapy and studying the role of lymphatic transport in immunity. Dr. Thomas received her Ph.D. from The Johns Hopkins University as a NSF Graduate Research Fellow where she studied the role of fluid flow in regulating blood-borne metastasis and identified novel biomarkers for the detection of metastatic colon cancers. Dr. Thomas?s research focuses on the role of biological transport phenomena in physiological and pathophysiological processes. Her laboratory specializes in incorporating mechanics with cell engineering, biochemistry, biomaterials, and immunology in order to 1) elucidate the role mechanical forces play in regulating seemingly unrelated aspects of tumor progression such as metastasis and immune suppression as well as 2) develop novel immunotherapeutics to treat cancer. Cancer progression is tightly linked to the ability of malignant cells to exploit the immune system to promote survival. Insight into immune function can therefore be gained from understanding how tumors exploit immunity. Conversely, this interplay makes the concept of harnessing the immune system to combat cancer an intriguing approach. Using an interdisciplinary approach, we aim to develop a novel systems-oriented framework to quantitatively analyze immune function in cancer. This multifaceted methodology to study tumor immunity will not only contribute to fundamental questions regarding how to harness immune response, but will also pave the way for novel engineering approaches to treat cancer such as with vaccines and cell- or molecular-based therapies.

Areas of Expertise

Drug Development and Delivery, Cancer Biology, Biomaterials, Drug Design

Education

The Johns Hopkins University
Ph.D.

University of California - Los Angeles
B.S.

Selected Accomplishments

Department of Defense Breast Cancer Research Program Concept Award
Department of Defense Breast Cancer Research Program Concept Award, 2009

National Science Foundation Graduate Research Fellowship
National Science Foundation Graduate Research Fellowship, 2005
