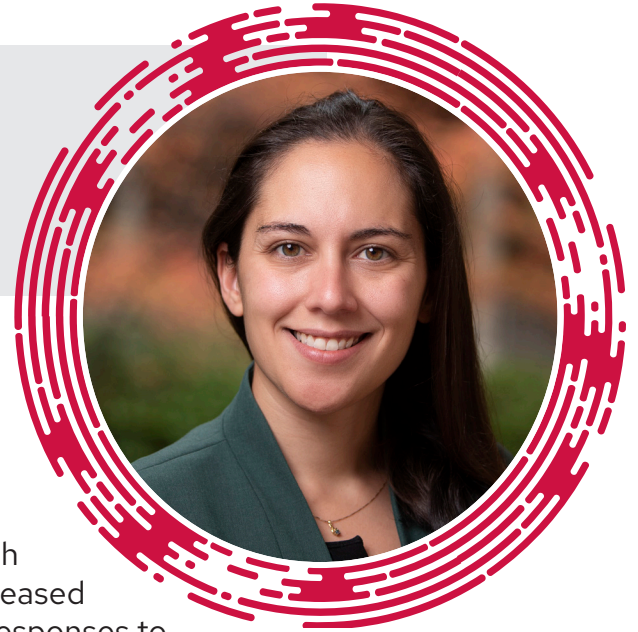




Variations in fibrosis—the importance of biologic factors

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Fibrosis affects a wide range of clinical disorders including chronic wounds, the foreign body response (FBR) to implants, and diseases such as uterine fibroids. Analysis of the 2019 Global Burden of Disease study found that mortality from fibrotic diseases has steadily increased up to 17.8% since the 1990s. Aging is a significant contributor of fibrotic disease. With aging, immunologic changes are known to occur, including increased susceptibility to inflammatory age-related diseases, reduced responses to infections and vaccines, and poor wound healing. To develop more precise immunomodulatory systems to reduce fibrosis and promote tissue regeneration our goal is to understand how biologic factors (e.g. age, sex, ancestry) alter the immune response in chronic fibrosis. In my talk, I will discuss my work in immune changes with age and sex in the FBR. To recapitulate the FBR, we use a murine model of traumatic injury (volumetric muscle loss) treated with a pro-inflammatory material (polycaprolactone) to elucidate differences by sex in the immune-mediated fibrosis across lifespan. I will then discuss the understudied fibrosis of uterine fibroids, highlighting aspects of the immune microenvironment within this disease. Together, these studies highlight the opportunity for improved understanding and targeting of fibrosis to improve human health.

ABOUT the SPEAKER

Dr. Joscelyn Mejías is a postdoctoral fellow in the Elisseeff lab at the Translational Tissue Engineering Center at Johns Hopkins University. She received a BS in Bioengineering with the Distinction in Research and Creative Works and a BA in Asian Studies from Rice University; she earned her MS and PhD from the joint Wallace H. Coulter Department of Biomedical Engineering at the Georgia Institute of Technology and Emory University. Dr. Mejías' current work is on understanding the immune microenvironment during fibrosis including the foreign body response (FBR) and human uterine fibroids. Her work on the impact of biological factors (age, sex) in the FBR has been supported by the 2022 School of Medicine Postdoctoral Research Accelerator Award and the NIH-NIA MOSAIC K99/R00; for her mentoring and work in uterine fibroids she was awarded the 2023 L'Oréal For Women in Science award.

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1003 Engineering Centers (Tong Auditorium)

