

Lehigh Bioengineering Seminar Series presents:

Dr. Taneka D. Jones, PhD

**Research Assistant Professor
Department of Bioengineering, Lehigh University**

“The Development and Characterization of Bioplatforms for Uterine Tissue Engineering Applications”



April 24, 2026
10:45 AM – 11:45 AM
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Abstract:

Women’s health remains one of the most underserved frontiers in regenerative medicine, with gynecologic conditions such as uterine fibroids and placenta accreta spectrum disorders disproportionately affecting patient populations and lacking physiologically relevant models for mechanistic study. Our research program integrates tissue decellularization, biomaterials science, and extrusion-based bioprinting to develop uterine-specific bioplatforms that recapitulate the structural and biochemical complexity of native gynecologic tissue. We focus on optimizing human uterine tissue processing for precursor gel formulation, quantifying extracellular matrix preservation during decellularization, and identifying ECM biomarkers associated with uterine fibroid racial disparities. These platforms are engineered to support patient-specific modeling of both healthy and diseased uterine microenvironments, enabling interrogation of disease progression and evaluation of therapeutic strategies with translational relevance.

In this talk, I will present recent progress in characterizing decellularized uterine scaffolds, formulating printable precursor gels, and building engineered disease–healthy tissue model systems for gynecologic disease. I will also highlight ongoing clinical collaborations across academic medical centers, health networks, and NIH-funded consortia that position this work to advance equitable, bench-to-bedside solutions in women’s health.

Personal Bio:

Dr. Taneka D. Jones is a Research Assistant Professor of Bioengineering at Lehigh University, where her laboratory advances tissue engineering and regenerative medicine approaches to address persistent disparities in women's health. Her current research program focuses on uterine fibroid racial disparities, placenta accreta spectrum disorders, and the development of bioprinted gynecologic tissue models, supported by active collaborations with investigators at the University of Michigan, Northwestern University, Lehigh Valley Health Network, St. Luke's University Health Network, and Ann & Robert H. Lurie Children's Hospital. Dr. Jones earned her Ph.D. and M.S. in Bioengineering from the University of Illinois Chicago, where her doctoral work in hydrogel scaffolds and stem cell biomaterials laid the foundation for her translational research today. She is currently a principal investigator on an NIH P50-funded subaward identifying extracellular matrix biomarkers in uterine fibroids, and her scholarship has been disseminated through peer-reviewed journals, national conferences, and a widely viewed TED-Ed lesson on 3D bioprinting human tissue.

Dr. Jones brings an unusually broad perspective to bioengineering, having worked across four sectors over her career: academia, government, industry, and K–12 education. Prior to her faculty appointment, she served as a Medical Science Liaison at Vericel Corporation supporting autologous cell therapy across the West and Pacific Northwest, completed a graduate research appointment in additive biomanufacturing at Lawrence Livermore National Laboratory, and spent a decade as a science educator and IB Program Coordinator in the Chicago Public Schools. This integrated background informs her commitment to bridging bench science with clinical application and to mentoring the next generation of researchers — she has advised undergraduate, master's, and visiting scholars, and contributes regularly to NSF SBIR/STTR review, NIST biofabrication standards work, and community-facing programming on women's health.