

Council Seat Candidate
Brianne K. Connizzo, Ph.D.
Assistant Professor in Biomedical and Mechanical Engineering
Boston University

Background: Dr. Brianne Connizzo is an Assistant Professor in the Departments of Biomedical Engineering and Mechanical Engineering at Boston University. Dr. Connizzo received her Ph.D. in Bioengineering from the University of Pennsylvania in 2015 and completed her postdoctoral training in the Department of Biological Engineering at MIT. Her research has been continuously supported by the National Institutes of Health, including a K99/R00 Pathway to Independence Award and an NIGMS R35 MIRA, as well as private foundations. Dr. Connizzo has been highly productive in the field, with over 40 peer-reviewed publications and more than 2,000 citations. In addition to her research contributions, Dr. Connizzo is deeply invested in mentorship and leadership, devoting time to curricular development, advisory committees, and various student organizations on campus. She was recently recognized with the 2026 Early Career Excellence in Research Award from BU's College of Engineering. She currently serves on the editorial board of *Matrix Biology* and *Matrix Biology Plus*, and on the organizing committee for the upcoming ASMB Biennial Meeting.

Research Program: The long-term goal of my research program is to understand the key factors involved in regulation of the physiological microenvironment such that cells maintain their native function throughout life. In particular, my work centers on understanding maintenance of the extracellular matrix and how this process changes in response to biological changes (age, sex), physical changes (disuse, exercise), and environmental changes (endocrine signaling, metabolism, inflammation). To do this, we have built novel tools to stimulate, visualize, and quantify matrix turnover, enabling mechanistic understanding the pathways underlying normal and pathological tissue remodeling. This includes explant models of age- and sex-related pathologies, custom-built bioreactors that control the mechanical loading environment of tissue explants and biological factors in the medium, and novel assays for multiplexed protein quantification. Ultimately, our goal is to understand how to enhance intrinsic tissue maintenance to prevent degenerative tissue disease.

Vision for the Society: ASMB has always brought together people from many disciplines around a shared interest in the matrix, and I would like to help build on that. I would love to see more opportunities for engineers and biologists to work side by side, through joint sessions, workshops, and training that pair mechanics, modeling, and sensing with molecular approaches. I would also like to help grow interest in how sex, hormonal state, and age shape matrix biology, which I think can lead the field toward a more personalized view of the ECM. I am excited about the use of new tools that measure matrix synthesis and degradation together in living tissue and in real time, and I think the society could be a great place to share and teach them. Finally, but perhaps most importantly, I have been dedicated to mentoring throughout my career and would be thrilled to develop initiatives that support trainees and early-career investigators who are building careers between disciplines. ASMB has quickly become a research home for me and my lab, and I'm honored to give back to this community.