

**DR. BRENDON BAKER's** research interests lie in understanding how physical aspects of the cell microenvironment regulate fundamental biological processes including migration, proliferation, and extracellular matrix synthesis. He is particularly interested in how cells physically remodel their microenvironment during disease progression, and how alteration of the microenvironment can in turn feedback to promote pathological cell behavior. Dr. Baker's research program focuses on developing novel biomaterials and in vitro microsystems to study the mechanobiology underlying interactions between cells and their surroundings. Beyond gaining fundamental insight into disease processes, a second aim of the group is controlling cell-microenvironment interactions to engineer better tissue replacements and regenerative therapies.



## **DR. BRENDON BAKER**

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FRIDAY, JANUARY 28, 2022 | 9:00 AM | EC 2300

### **DISSECTING CELL-SPECIFIC, MATRIX-MEDIATED CONTRIBUTIONS TO FIBROSIS USING NEW BIOMATERIALS AND MICROPHYSIOLOGIC MODELS**

**ABSTRACT:** During fibrotic diseases, functional tissue parenchyma progressively transform into stiff, disorganized, and non-functional tissue to cause organ failure. Underlying this transition are a multitude of interconnected changes in the cellular microenvironment that can only be understood by using new approaches to

interrogate cells within appropriate biomaterial settings. In this talk, I'll highlight recent efforts from my group to bioengineer 3D models of myofibroblast-driven tissue remodeling and microvascular dysregulation associated with the fibrotic progression.



Through the generous support of the Wallace H. Coulter Foundation, the Department of Biomedical Engineering facilitates weekly lectures each year during academic terms. Experts in all areas of Biomedical Engineering are invited to provide a research seminar and to meet with faculty and students to discuss the latest developments and research in Biomedical Engineering.

Friday, January 28, 2022  
9:00 AM | <https://bme.fiu.edu/seminars>