

**Johns Hopkins University, Department of Mechanical Engineering
2020 Fall Virtual Seminar Series: Class 530.803**

Thursday, October 29, 2020 | 3:00 PM via Zoom

<https://wse.zoom.us/j/91752450849>

Meeting ID: 917 5245 0849 | Passcode: 605594

“Soft, shape, sense: Fabricating hierarchically-patterned soft mechanical sensors”

Presented by [Professor Kristen Dorsey](#)

Assistant Professor of Engineering, Smith College

Physically-soft mechanical sensors are poised to unlock exciting new applications in wearable devices, robotics, and human-machine interfaces. This interdisciplinary area borrows from materials science, mechanical engineering, and electrical engineering to realize physically soft sensors that can measure deformations such as strain, torsion, and pressure. A promising development in soft mechanical sensors is hierarchically-patterned structures within the sensor, which enables both deformation selectivity and the ability to tune sensing properties.

I will discuss work and challenges related to fabricating hierarchically-patterned sensors. I will also present work in enhancing the selectivity of stretchable sensors, towards tuning a wearable sensor for measuring human body motions and using origami patterns to improve mechanical selectivity between pressure and strain.



Dr. Kris Dorsey is an assistant professor of engineering in the Picker Engineering Program at Smith College. She was a President’s Postdoctoral Fellow at the University of California, Berkeley and University of California, San Diego. Dr. Dorsey graduated from Carnegie Mellon University with a Ph.D. in Electrical and Computer Engineering and earned her Bachelors of Science in Electrical and Computer Engineering from Olin College. She founded The MicroSMITHie Lab at Smith College to investigate micro- and miniature-scale sensor design and to prepare undergraduates for graduate study in engineering. Her current research interests include novel morphology soft sensors, stability concerns for soft-material sensors, and sensors for soft robots and wearable devices. Dr. Dorsey has co-authored several publications on hyperelastic strain sensors, novel soft lithography processes, and the stability of gas chemical sensors. In 2019, she received the NSF CAREER award.