

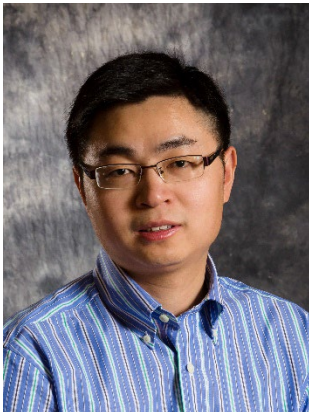
# NEURAL ENGINEERING SEMINAR SERIES

## Soft Electronics to Seamlessly Integrate with Tissues and Organs

<https://psu.zoom.us/j/92405373420>

**September 6, 2023**

12:15 -1:15 p.m. (ET)  
W306 Millennium Science  
Complex



### Cunjiang Yu

Associate Professor  
Engineering Science and  
Mechanics, Biomedical  
Engineering

Penn State University

### ABSTRACT:

Electronics that can seamlessly integrate with human body could have significant impact in medical diagnostic, therapeutics. However, seamless integration is a grand challenge because of the distinct nature between electronics and human body. Conventional electronics are rigid and planar, made out of rigid materials. Human body are soft, deformable and curvilinear, comprised of biological materials, organs and tissues. This talk will introduce our solution to address the challenge through a few emerging electronics and bioelectronics technologies, such as flexible electronics, stretchable electronics and most recently rubbery electronics. On one hand, by taking the advantage of the enable mechanics of ultra-thin, open-mesh structures, conventionally non-stretchable electronic materials could become mechanically stretchable. On the other hand, rubbery electronics is constructed all based on elastic rubber electronic materials, which possesses microscopic tissue-like softness and mechanical stretchability to allow seamless integration with soft deformable tissues and organs.

### BIOGRAPHY:

Dr. Cunjiang Yu is the Dorothy Quiggle Career Development Associate Professor of Engineering Science and Mechanics, Biomedical Engineering at Penn State. His lab research concerns the fundamentals and applications of soft electronics and bioelectronics. His work has been recognized by numerous awards, including the CAB Mid-Career Award, ASME 2023 ASME Chao and Trigger Young Manufacturing Engineer Award, ASME Thomas J. R. Hughes Young Investigator Award, the Society of Engineering Science Young Investigator Medal Award, NSF CAREER Award, ONR Young Investigator Award, NIH Trailblazer Award, MIT Technology Review TR35 Top Innovator, AVS Young Investigator Award, etc.