

# *Expanding fast scan cyclic voltammetry at carbon fiber microelectrodes to new molecular spaces*

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**Chemistry  
Seminar on fast  
scan cyclic  
voltammetry at  
carbon fiber  
microelectrodes**

**Monday  
February 16  
at 4 pm in  
126 Schrenk**

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**Abstract:** Fast scan cyclic voltammetry (FSCV) coupled to carbon fiber microelectrodes (CFMs) have numerous advantages as an electrochemical measurement technique, including typical nM sensitivity, 100 ms temporal resolution, biocompatibility, small size, renewable surfaces, and continuous recording capabilities. Due to challenges in selectivity, however, this method has been limited to the measurement a handful of analytes. This talk will cover two major areas of research in the Ou lab. These include: 1) electrodeposition of novel biogenic molecularly imprinted polymers on CFMs to enhance the selectivity of these electrodes for neuropeptides, and 2) expanding the detection space to short chain fatty acids, important molecules in the gut-brain axis. Together, these approaches extend the analytical benefits of FSCV and CFMs to two new molecular spaces and beyond.

**About the speaker:** Yangguang Ou (O.U.) is an assistant professor at the University of Vermont in Burlington, VT, where she started her independent position in August 2020. She received her dual B.S. degree in chemistry and biochemistry from Florida State University, and Ph.D. in bioanalytical chemistry from Stephen Weber's lab at the University of Pittsburgh in 2017. She then moved to the University of South Carolina in 2018 to learn and study electrochemistry and electrochemical measurements in Parastoo Hashemi's lab. In 2021, she became the inaugural co-recipient of the \$200k pilot grant from the Vermont Center for Cardiovascular and Brain Health, the COBRE center funded through NIGMS. Between 2022-2024, O.U. was the analytical chemistry consultant on a DARPA project funded between Stanford, Columbia University, and UVM. Recently, she also joined the NSF PIRE grant, which supports student exchange programs and collaborations between US and Japan.