



ACS Local Section
New York
Long Island Subsection

Electrochemical Approaches for High-Resolution Neurotransmitter Detection in Vivo

Dr. Jaqueline Keighron

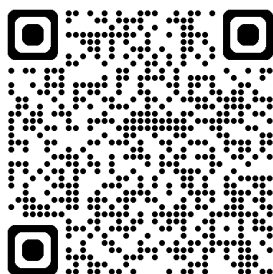
Assistant Professor of Chemistry

New York Institute of Technology

Thursday, September 11th, 2025, 6:30 PM

St. John's University, DAC Ballroom (4th floor)
and online (Zoom)

Registration required
prior to the event.
Click [here](#) or
scan the QR code
to register.



Abstract: Electrochemical techniques have advanced the study of dopamine signaling in vivo. Carbon fiber electrodes combined with fast-scan cyclic voltammetry provide sub-second resolution of release, uptake, and transporter regulation, providing insight into how psychostimulants such as cocaine alter synaptic transmission. These tools have yielded important insights into transporter dynamics, vesicle mobilization, and the modulation of dopamine signaling under pharmacological challenge. Continued refinement of electrode design is aimed at improving temporal resolution, chemical selectivity, and spatial precision, which may allow future studies to probe neurotransmitter signaling at finer scales and expand our understanding of neurotransmitter dynamics in the intact brain.

Biography: Dr. Jacqueline Keighron is an Assistant Professor of Chemistry at the New York Institute of Technology (Department of Biological and Chemical Sciences). She earned her PhD in Chemistry from Penn State University. She was then a postdoctoral researcher at the Chalmers University of Technology (Department of Chemistry and Chemical Engineering) in Gothenburg, Sweden. She then returned to the U.S. to work as a fellow in the National Institute on Drug Abuse (Medications Development Program) in Baltimore, MD. Her research focuses on using ultrafast and multianalyte biosensors to study the dynamics of glutamate and dopamine in vivo, as well as the neurochemical effects of drug molecules that have both therapeutic and abusive properties.