



APPOINTMENTS

UNIVERSITY OF VERMONT

Burlington, VT

Assistant Professor of Chemistry

Faculty Member in Neuroscience Graduate Program

Faculty Member in Cellular, Molecular, and Biomedical Sciences Program

Pipeline Investigator in the Vermont Center for Cardiovascular and Brain Health

August 2020 - present

UNIVERSITY OF SOUTH CAROLINA

Columbia, SC

Postdoctoral Researcher

Advisor: Prof. Parastoo Hashemi (joint position at Imperial College London)

March 2018 – July 2020

EDUCATION

UNIVERSITY OF PITTSBURGH

Pittsburgh, PA

Doctor of Philosophy in Analytical Chemistry

Advisor: Prof. Stephen G. Weber

Graduation Year: 2017

FLORIDA STATE UNIVERSITY

Tallahassee, FL

Bachelor of Science in Biochemistry

Bachelor of Science in Chemistry

Graduation Year: 2011

Minors: Biology and English (with a focus in Creative Writing)

GRANTS/AWARDS/ORGANIZATIONS

GRANTS

- Vermont Center for Cardiovascular and Brain Health Pilot Grant Co-Recipient \$200,000 – October 2021 – September 2023
- OVPR Express Award, \$3,000 – November 2020 – June 2021

HONORS/AWARDS

- *RSC Advances* Outstanding Reviewer of 2021 (January 2022)
- Selected to attend the 2020 National Science Foundation Directorate for the Mathematical and Physical Sciences Workshop (November 2020)
- MUACC Travel Award (November 2019)
- Andrew Mellon Predoctoral Fellowship (September 2015 – May 2016)
- Department nominee for Anna Louise Hoffman Award for Outstanding Achievement in Graduate Research (February 2015)
- Arts & Sciences Fellowship (June 2011 – May 2013)



ORGANIZATIONS/SOCIETIES

- VT chapter of Society of Neuroscience (January 2023 – present)
- Society for Redox Biology and Medicine (June 2022 – present))
- The Electrochemical Society (September 2020 – present)
- Society for Electroanalytical Chemistry (May 2019 – present)
- Greater Pittsburgh Area Women Chemists Committee (February 2015 – present)
- American Chemistry Society (June 2013 – December 2017, February 2021 - present)
 - Analytical Chemistry Technical Division (August 2019 – present)
- Society for Neuroscience (January 2013 – December 2017)

PUBLICATIONS AND PRESENTATIONS

PUBLICATIONS

13. Harper, M., Nudurupati, U., Workman, R., Lakoba, T., **Ou, Y.**, Punihaole, D. (2022) “Toward Determining Amyloid Fibril Structures Using Experimental Constraints from Raman Spectroscopy.” *ChemRxiv*. Cambridge: Cambridge Open Engage. This content is a preprint and has not been peer-reviewed. DOI: 10.26434/chemrxiv-2022-zrzmf-v2
12. Schapira, I., Russo-Savage, L., Narla, T., O’Neill, M., Laprade, K., Stafford, J., **Ou, Y.** (2022) “Measurement of Tryptophan in Cell Cultures Using Fast Scan Cyclic Voltammetry at Carbon Fiber Microelectrodes with Improved Sensitivity and Selectivity.” *ChemRxiv*. Cambridge: Cambridge Open Engage. This content is a preprint and has not been peer-reviewed. DOI: 10.26434/chemrxiv-2022-tfdn8
11. Hersey, M., Reneaux, M., Berger, S., Mena, S., Buchanan, A.M., **Ou, Y.**, Tavakoli, N., Reagan, L.P., Clopath, C., Hashemi, P.A. (2022) “Tale of Two Transmitters: Serotonin and Histamine as *In Vivo* Biomarkers of Chronic Stress in Mice. *Journal of Neuroinflammation* 19(1): 1-20.
10. Witt, C.E., Mena, S., Honan, L.E., Batey, L., Salem, V., **Ou, Y.**, Hashemi, P. (2022) “Low-Frequency Oscillations of *In Vivo* Ambient Extracellular Brain Serotonin. *Cells*, 11(10): 1719.
9. Faraji, A., Jaquins-Gerstl, A., Valenta, A., **Ou, Y.**, Weber, S.G. (2020) “Electrokinetic Convection-Enhanced Delivery of Solutes to the Brain.” *ACS Chemical Neuroscience*. 11: 2085-2093.
8. **Ou, Y.**, Buchanon, A.M., Witt, C.E., Hashemi, P. (2019) Frontiers in Electrochemical Sensors for Neurotransmitter Detection: Towards Measuring Neurotransmitters as Chemical Diagnostics for Brain Disorders. *Analytical Methods*. 11: 2738-2755. **Featured on back cover.**
7. Siriwardhane, T., **Ou, Y.**, Pathirathna, P, Hashemi, P. (2018) Analysis of Electrochemically Elusive Trace Metals with Carbon Fiber Microelectrodes. *Analytical Chemistry* 90 (20): 11917-11924.
6. **Ou, Y.**, Wilson, R.E., Weber, S.G. (2018) Methods of Measuring Enzyme Activity *Ex Vivo* and *In Vivo*. *Annual Review of Analytical Chemistry* 11: 509-533.
5. **Ou, Y.**, Weber, S.G. (2018) Higher Aminopeptidase Activity Determined by Electroosmotic Push-Pull Perfusion Contributes to Selective Vulnerability of the Hippocampal CA1 Region to Oxygen-Glucose Deprivation. *ACS Chemical Neuroscience* 9 (3): 535-544.
4. **Ou, Y.**, Weber, S.G. (2017) Numerical modeling of Electroosmotic Push-Pull Perfusion and Assessment of its Application to Ectoenzyme Measurements in Mammalian Tissue. *Analytical Chemistry* 89: 5864-5873.
3. **Ou, Y.**, Wu, J., Sandberg, M., Weber, S. G. (2014) Electroosmotic Perfusion of Tissue: Sampling the Extracellular Space and Quantitative Assessment of Membrane-Bound Enzyme Activity in Organotypic Hippocampal Slice Cultures. *Analytical and Bioanalytical Chemistry* 406: 6455-6468.



2. Rupert, A. E., **Ou, Y.**, Sandberg, M., and Weber, S. G. (2013) Assessment of Tissue Viability Following Electroosmotic Push-pull Perfusion from Organotypic Hippocampal Slice Cultures. *ACS Chemical Neuroscience* 4: 849-857.
1. Rupert, A. E., **Ou, Y.**, Sandberg, M., and Weber, S. G. (2013) Electroosmotic Push-pull Perfusion: Description and Application to Qualitative Analysis of the Hydrolysis of Exogenous Galanin in Organotypic Hippocampal Slice Cultures. *ACS Chemical Neuroscience* 4: 838-848.

REVIEWER FOR JOURNALS

- *ACS Chemical Neuroscience*
- *Journal of Neurophysiology*
- *Hypoxia*
- *RSC Advances*
- *Analytical and Bioanalytical Chemistry*
- *Journal of the Electrochemical Society*
- *Metabolomics*
- *ACS Applied Materials & Interfaces*

INVITED TALKS AND SELECTED PRESENTATIONS

- 2023 – **Invited talk** to 3rd annual VCCBH conference, University of Vermont.
- 2023 – **Invited talk** to Pittsburgh Conference & Expo, Philadelphia, PA, USA.
- 2023 – **Invited talk** to the Biomedical Engineering Research Conference (Marilyn Cipolla), University of Vermont.
- 2022 – **Invited talk** at the Department of Chemistry, SUNY Potsdam, Potsdam, NY
- 2022 – **Invited talk** at the 2nd annual VCCBH conference, University of Vermont.
- 2022 – **Invited talk** at the Department of Biochemistry, University of Vermont.
- 2022 – **Invited talk** at the Redox Biology Seminar series, University of Vermont.
- 2022 – **Invited talk** at the Pittsburgh Conference & Expo, Atlanta, GA. *Cancelled due to COVID.*
- 2021 – **Invited talk** at the Department of Chemistry, Skidmore College, Saratoga Springs, NY.
- 2021 – **Invited talk** at the Department of Neurological Sciences, biobehavioral cluster subgroup, University of Vermont.
- 2021 – **Invited talk** at the Department of Neurological Sciences, University of Vermont.
- 2021 – **Invited talk** at the Vermont Center for Cardiovascular and Brain Health (VCCBH) Conference, University of Vermont, Burlington, VT.
- 2021 – **Invited talk** at the Department of Chemistry, University of Minnesota by the Women in Science and Engineering (WISE) chemistry chapter for the CWC lunch series.
- 2020 – **Oral presentation** at the annual Pittcon Conference and Expo, Chicago, IL
- 2019 – **Invited talk** at the Department of Chemistry, Colorado State University, Ft. Collins, CO
- 2019 – **Invited talk** at the Department of Chemistry & Biochemistry, Miami University, Oxford, OH
- 2019 – **Invited talk** at the Department of Chemistry, University of Louisville, Louisville, KY
- 2019 – **Chalk talk** at Midwest Universities Analytical Chemistry Conferences, IUPUI, Indianapolis, IN
- 2019 – **Poster presentation** at the Winter Conference on Brain Research, Snowmass, CO
- 2018 – **Chalk talk** at The Midwest Universities Analytical Chemistry Conference, Michigan State University, East Lansing, MI



TEACHING EXPERIENCE

UNIVERSITY OF VERMONT

Burlington, VT

Instructor for CHEM396B, Biosensing (Spring 2021, Spring 2022)

Designed and taught a brand new course offering to a class of 11-18 undergraduates (with backgrounds in chemistry, environmental science, bioengineering) and graduate students (all from chemistry) about electrochemistry theory, various electrochemical methods used in biosensing, and related applications in biological and environmental sensing.

UNIVERSITY OF VERMONT

Burlington, VT

Instructor for CHEM121, Quantitative Analysis (Fall 2020, Fall 2021, Fall 2022)

Taught a class of 42 undergraduate students from a range of backgrounds (mathematics, biology, chemistry, physics, geology, etc) about quantitative methods in chemistry, including titrations, statistics, buffers, activity, as well as introduction to analytical instrumentation and techniques. Has an accompanying lab component.

UNIVERSITY OF SOUTH CAROLINA

Columbia, SC

Regular guest lecturer for CHEM112, General Chemistry II (Spring 2019)

Instructor for CHEM321, Quantitative Analysis (Fall 2018)

Regular guest lecturer for CHEM322, Analytical Chemistry (Spring 2018)

UNIVERSITY OF PITTSBURGH

Pittsburgh, PA

Teaching assistant for CHEM960, General Chemistry for Engineers (Fall 2011)

RECENT OUTREACH

2022 – present

TEEN SCIENCE CAFÉ

Faculty volunteer for the Teen Science Café through UVM 4-H. In spring 2023, will be hosting a workshop/demo called “Excited for Electrochemistry,” in which students from K-12 will learn about electrochemistry by making batteries from fruits/vegetables and watching a demo on sugar oxidation (gummy bear explosion).

2021- present

WOMEN IN STEM

Faculty advisor to the UVM Women in STEM graduate student group.

2021

ESSEX STEM ACADEMY

Hosted a local high school student, Colin Gorman, who interned in my lab for 6 weeks. He learned how to fabricate carbon fiber microelectrodes, run simple electrochemistry experiments, attended group meeting, and presented what he learned at his high school poster session.

2018 – 2020

ANALYTICAL CHEMISTRY JOURNAL CLUB

Invited speaker: Dr. Fenella France, Chief of Preservation Research and Testing Division, the Library of Congress