

Dr. Daniel Steyer
Dean's Post-Doctoral Scholar
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Personal Statement:

I am a dedicated scientist and take pride in my ability to critically analyze complex problems and create innovative solutions. Through this ability and by putting great importance on being kind and approachable, I have striven to be a teacher and researcher that is readily available to enable the scholarly pursuits of others. Instructing chemistry has been a source of great satisfaction to me, and I am excited to create a career out of both teaching chemistry and helping prepare students for life-long success.

Education:

Bachelor of Science in Chemistry, Minor in Mathematics, University of Toledo, 2010-2014

Masters in Chemistry, University of Michigan, 2014-2016

Doctor of Philosophy in Analytical Chemistry, University of Michigan, 2014-2019

Teaching and Service Experiences:

STEM tutor and general volunteer, International Boxing Club of Toledo (IBC), 2011-2014

- Volunteered with the IBC, a group that seeks to provide a productive after school environment for at-risk youths. Roles included STEM tutor, youth mentor, and fund-raising event worker.

Volunteer, Females Excelling More in Math, Engineering and the Sciences (F.E.M.M.E.S.) capstone events, 2016, 2019

- Helped to prepare and present "Arduino stoplights" (2016) and soap making (2019) to local elementary level girls with F.E.M.M.E.S. program to promote interest in STEM fields.

Laboratory Instructor – General, Organic and Analytical Chemistries, University of Michigan, 2014-2019

- Acted as instructor for assorted undergraduate teaching labs; established and implemented grading rubrics, gave prelab lectures, and aided in development of student designed lab projects.

Graduate Student Researcher, Ginger Shultz Group, 2018-2019

- Worked on fundamental pedagogy project to help explain instructor development in ¹H-NMR education

Instructor of Record, Introductory Analytical Chemistry, Florida State University, Ongoing

Research Experiences and Associated Publications

Undergraduate Researcher, Jared Anderson Group, University of Toledo, 2011-2013

- Synthesized and applied glucaminium-based ionic liquids for extraction of boron species from aqueous environments
 - Joshi, M.K.; Steyer, D.J.; Anderson, J.L. *Analytica Chimica Acta*, **2012**, 740, 66-73
- Examined interfacial properties of imidazolium-based, polycationic ionic liquids
 - Nacham, O.; Martín-Pérez, A.; Steyer, D.J.; Trujillo-Rodríguez, M.J.; Anderson, J.L.; Pino, V.; Afonso, A.M. *Colloids and Surfaces A; Physicochem. Eng. Aspects.*, **2015**, 469, 224-234

Undergraduate Researcher, Robert Kennedy Group, 2013

- Designed capillary electrophoresis-based assays for monitoring enzymatic activities
 - Guetschow, E.D.; Steyer, D.J.; Kennedy, R.T. *Anal. Chem.*; **2014**, 86, 10373-10379

Graduate Student Researcher, Robert Kennedy Group, 2015-2019

- Established nanoelectrospray ionization-mass spectrometry assay for direct analysis of high saline droplet samples and paired with novel microfluidic probe for the high spatiotemporal resolution monitoring of neurochemicals in rat brain tissue
 - Ngernsutivorakul, T.; Steyer, D.J.; Valenta, A.V.; Kennedy, R.T. *Anal. Chem.*; **2018**, 90(18), 10943-10950
- Created system for the robust, high-throughput nanoelectrospray ionization-mass spectrometry analysis of picoliter volume droplets
 - Steyer, D.J.; Kennedy, R.T. *Anal. Chem.*, **2019**, 91(10), 6645-6651
- Collaborated with Corey Stephenson Group at the University of Michigan to develop combined droplet microfluidic/mass spectrometry platforms for assessing visible light-driven reactions.
 - Manuscripts in preparation

Post-Doctoral Researcher, Michael Roper Group, 2019-Present

- Developing novel microfluidic systems for monitoring secretion dynamics from islets of Langerhans

Representative Academic Presentations:

Oral Presentation - *Segmented Flow Nanoelectrospray Ionization-Mass Spectrometry as a High-Throughput Method for Analyzing Visible Light-Driven Reactions*; June 2019; Green Chemistry & Engineering Conference; Reston, Va

Invited Speaker - *Nanoelectrospray Ionization-Mass Spectrometry Analysis of Microfluidic Droplets*; September 2018; Microfluidics in Biomedical Sciences Student Organization Seminar Series, University of Michigan

Poster Presentation - *Sensitive and Robust Analysis of Microfluidic Droplets by Nanoelectrospray Ionization-Mass Spectrometry*; May 2018; Microfluidics in Biomedical Sciences Student Organization Symposium, University of Michigan

Oral Presentation - *Sensitive and Label-Free Detection from Droplet Samples by Nanoelectrospray Ionization-Mass Spectrometry*; March 2018; Pittcon; Orlando, FL

Grants and Awards:

Named Dean's Postdoctoral Scholar in Florida State University's Chemistry Department, October 2019

Travel award from ACS GCI Pharmaceutical Roundtable to attend and present at Green Chemistry & Engineering Conference in June 2019

- One of 8 grants awarded

Outstanding presentation award from Microfluidics in Biomedical Sciences Student Organization Symposium, May 2018

National Science Foundation REU fellow at University of Michigan Chemistry Department, Summer 2013
Under 10% acceptance rate

David Hostetler Scholarship for achievement in Freshman Chemistry, 2011-2012