

Danielle M. Zurcher, PhD

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Education and Professional Experience

Teaching Assistant Professor, 07/2017-Present

University of North Carolina-Chapel Hill

Post-doctoral Research Fellow/Lecturer I, 01/2016–05/2017

University of Michigan

Advisor: Anne J. McNeil

PhD in Chemistry 2010–2015

University of Michigan

Dissertation: Modifying Gelators for Sensing Applications and Developing Online Resources for Organic Courses

Advisor: Anne J. McNeil

BS in Chemistry (with an emphasis in Biochemistry) 2006–2010

Wayne State University

Advisor: Jeremy Kodanko

Teaching Experience

Lecturer on Record for Organic Chemistry II, University of Michigan, one semester, 01/2017–04/2017

- Prepare three weekly lectures on Organic Chemistry II topics
- Co-wrote and administer four exams
- Co-managed six graduate students who lead discussion sections

Lecturer on Record for Organic Chemistry Laboratory I, University of Michigan, one semester, 09/2016–present

- Prepared weekly lectures on Organic Chemistry Laboratory topics and techniques for ~460 students
- Co-managed 32 graduate students who ran lab sections
- Utilized course management software, document cameras, and i>clickers

Michigan Math and Science Scholars (MMSS) Program Instructor, two-week span, 06/2016

- Co-taught a high school polymer camp developed as research project described below
- Guest lectured during another camp focused on organic chemistry

Graduate Student Instructor, five semesters, 2010–2015

Organic I and II Lecture and Organic II Lab Course

- Taught weekly discussion sections on topics in organic chemistry; taught two weekly laboratory sections in organic chemistry laboratories

Tutoring, 4-year span, 16 students, 2012–2016

- Taught organic chemistry concepts to students in *Organic I and II lecture courses*.

Education Research Experience

Post-doctoral Research Fellow, 01/2016–present

- Developed the curriculum for the MMSS high school polymer camp, including nine laboratory experiments, activities, and administrative work
- Assessed camp through pre and post surveys and student feedback on the individual experiments

- Contributed to re-designing experiments for Organic Chemistry Laboratory 1 to have a guided-inquiry approach

Future Faculty Graduate Student Instructor, 2-year span, 2014–2015

- Developed a feedback-driven, interactive online homework resource for the first-year organic chemistry courses
- Designed a semester-long 1-credit course where enrolled students generated questions for the feedback-driven, interactive online resource
- Assessed the quality of questions generated by students

Chemistry Research Experience

Graduate Student Research Assistant, 5 ½-year span, 2010–2015

- Developed a gel-based sensor for nitrite detection in water
- Amplified the signal of gel-based sensors with depolymerizing polymer scaffolds

Undergraduate Research Assistant, 3-year span, 2007–2010

- Prepared protected amino acid residues and dipeptides for catalytic oxidative studies
- Synthesized a variety of ligands for coordination with multiple metals

Intern in the Medicinal Chemistry Department at Amgen Inc., 3-month span, 2009

Manager: Katrina Copeland

- Synthesized multiple metabolites of the drug Diclofenac to identify toxic compounds

Publications

- McNeil, A.; Nelson, M.; Zurcher, D.; Phadke, S.; Pitcairn, C. A. *Chemistry 211 Laboratory Manual*; University of Michigan: Ann Arbor, MI, 2017.
- Zurcher, D. M.; Phadke, S.; Coppola, B. P.; McNeil, A. J. "Using Student-Generated Instructional Materials in an e-Homework Platform" *J. Chem. Educ.* **2016**, 93, 1871–1878.
- Zurcher, D. M.; McNeil, A. J. "Tools for Identifying Gelator Scaffolds and Solvents" *J. Org. Chem.* **2015**, 80, 2473–2478.
- Zurcher, D. M.; Adhia, Y. J.; Romero, J. D.; McNeil, A. J. "Modifying a Known Gelator Scaffold for Nitrite Detection" *Chem. Commun.* **2014**, 50, 7813–7816.
- Tang, Y.; Li, Y. B.; Wang, B.; Lin, R. Y.; Dongen, M. V.; Zurcher, D. M.; Gu, X. Y.; Banaszak-Holl, M. M.; Liu, G.; Qi, R. "Efficient in Vitro siRNA Delivery and Intramuscular Gene Silencing Using PEG-Modified PAMAM Dendrimers" *Mol. Pharm.* **2012**, 9, 1812–1821.
- Waldon, D. J.; Yohannes, T.; Colletti, A. E.; Liu, J.; Zurcher, D.; Copeland, K. W.; Zhao, Z. "Identification of Quinone Imine Containing Glutathione Conjugates of Diclofenac in Rat Bile" *Chem. Res. Toxicol.* **2010**, 23, 1947–1953.
- Abouelatta, A. I.; Sonk, J. A.; Hammound, M. M.; Zurcher, D. M.; McKamie, J. J.; Schlegel, H. B.; Kodanko, J. J. "Synthesis, Characterization, and Theoretical Studies of Metal Complexes Derived from the Chiral Tripyridyldiamine Ligand Bn-CDPy3" *Inorg. Chem.* **2010**, 49, 5202–5211.

Mentoring Experience

Undergraduate Research Mentor, 4-year span, 3 students, 2012–2015

- Mentored undergraduate students weekly in designing projects, performing laboratory experiments and presenting their work

Graduate Student Mentor, one semester, 2015

- Mentored first-time graduate student instructors through their mid-term teaching evaluations and advised them on improvements they could make in the classroom

Graduate Student Instructor Administrator, two semesters, 2011, 2015

- Acted as a resource for other graduate student instructors
- Carried out administrative tasks

Leadership

Chemical Sciences at the Interface of Education | University of Michigan (CSIE|UM) Organizing Committee, three semesters, 2014–present

Department-level program that provides the infrastructure for preparing future faculty

- As event leader, I helped organize intradepartmental events: Future Faculty Graduate Student Project Updates Seminar, Literature Meeting (Topic: integrating real research into undergraduate laboratory), and How to Create a Demo for the General Public (creating demos about your research project).

Chemistry Professional Development Organization (CPDO), 3-year span, 2012–2014

A graduate student run organization that works to enhance the professional development of students in the department.

- Served as president (1 year) and vice-president (1 year).
- Organized events: Exploring Science Policy, Networking Workshop, Introduction to Chemical Education, Introduction to Poster Design

Professional Development

Preparing Future Faculty Seminar, 5-week Seminar, 2014

- Learned research-based inclusive teaching strategies
- Syllabus design
- Learned about assessment and institutional accountability in higher education
- Identified successful strategies for teaching to diverse student populations

Select Presentations

Oral: Zurcher, D. M. “The many hats of a graduate student: Developing gel-based sensors and educational resources” Washtenaw Community College, Ypsilanti, MI, 03/2016

Poster: Zurcher, D. M.; Coppola, B. P.; McNeil, A. J. “Student-Generated Content in Sapling Learning: A Skill-Building Resource for First-Year Organic Chemistry Courses” Gordon Research Conference, Lewiston, ME, 06/2015

Oral: Zurcher, D. M.; Coppola, B. P.; McNeil, A. J. “Developing Student-Generated Content in Sapling Learning” ACS National Meeting, Denver, CO, 03/2015

Poster: Zurcher, D. M.; Phillips, D.; McNeil, A. J. “Depolymerization as an Amplification for Gelation” ACS National Meeting, Denver, CO, 03/2015

Oral: Zurcher, D. M.; Adhia, Y. J.; Romero, J. D.; McNeil, A. J. “Development of a gel-based sensor for detecting nitrite” ACS National Meeting, Indianapolis, IN, 09/2013

Oral: Zurcher, D. M.; McNeil, A. J. “Depolymerization as an Amplification Method for Gelation” Departmental Seminar, University of Michigan, Ann Arbor, MI, 11/2011

Awards and Honors

- Henry Earle Riggs One-Term Dissertation Fellowship (2015)
- Florence Fenwick Outstanding Graduate Student Instructor Award (2015)
- “Best Poster” Award Karle Symposium (2015)
- “Best Poster” Award Vaughan Symposium (2014)
- American Chemical Society, Division of Inorganic Chemistry Award (2010)
- Wayne State Scholars Scholarship (2006-2010)
- Undergraduate Research and Creative Projects Grant (2007)