

**Dr. Kathryn P. Kohn**  
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## EDUCATION

Wayne State University August 2018 – Present  
Master of Library and Information Science

Michigan State University August 2011 – May 2018  
Ph.D. Chemistry Specialization: Chemistry Education  
Dissertation: “Connecting Chemistry and Biology: Exploring Students’ Perceptions of College Courses”  
Committee: Dr. Melanie Cooper, Dr. Vashti Sawtelle, Dr. Lynmarie Posey, Dr. Tammy Long

University of Pittsburgh August 2007 – May 2011  
B.S. Chemistry with Departmental Honors *magna cum laude*

## RESEARCH EXPERIENCE

Student Perceptions of the Relationship between their Science Courses April 2014 – May 2018  
Michigan State University Dr. Melanie Cooper  
Semi-structured interviews were conducted with students co-enrolled in the general chemistry course sequence and the introductory cell and molecular biology course to understand how they viewed their introductory science courses as being related. Analysis of the thirty-six interviews focused on student perceptions of the utility of their content knowledge between courses and the perceived similarities and differences regarding how their courses discussed content such as energy and the structure-property-function relationship.

Student Understanding of Mechanistic Arrows May 2013 – August 2014  
Michigan State University Dr. Melanie Cooper  
Using the online assessment tool beSocratic, student use of mechanistic arrows was evaluated for multiple organic mechanisms. Analysis focused on the direction and function of students’ mechanistic arrows and how this changed over time, and differences between students who had taken a reformed versus a traditional general chemistry course sequence.

Bio-based Synthesis of Terephthalic Acid November 2011 – April 2013  
Michigan State University Dr. John Frost  
Worked toward the optimization of a Diels-Alder reaction between isoprene and acrylic acid to selectively obtain the 1,4-substituted product. Identified conditions for a high yielding, selective aryl methyl oxidation of *p*-toluic acid to terephthalic acid that was at milder temperature and less corrosive conditions than the standard industry process.

Summer Internship: Valspar Corporation

May – August 2010

Worked in research and development to synthesize new polymers for coatings used in food and beverage packaging. The polymers were screened with different cross-linkers for basic properties such as adhesion and corrosion resistance.

Undergraduate Research: SAR of Marpin

January 2010 – May 2011

University of Pittsburgh

Dr. Kay Brummond, Dr. Baptiste Manteau

Synthesized four structural analogues of Marpin, a biologically active parent compound, to determine the structure activity relationship. Select functional groups were replaced while the remainder of the compound was left unchanged.

## **TEACHING AND MENTORING EXPERIENCE**

Graduate Teaching Assistant

August 2014 – May 2018

MSU: CEM 141/142 beSocratic Administration

Dr. Amy Pollock, Dr. Melanie Cooper

Prepared and organized online homework assignments, and provided feedback on assignment design and content. Acted as primary contact for students having technical difficulties. Provided insight and feedback regarding the rebuild of the beSocratic homework system.

Private Tutor

January 2013 – May 2017

Helped to guide the learning of five high school students, including one with developmental and educational disabilities, for a total of over 400 hours of one-on-one tutoring. The courses I have worked with represent the full range of standard math and science courses required in high school as well as AP Calculus, Statistics, Chemistry, and Environmental Science. Also mentored in problem solving, study skills, and ACT prep, as well as monitored progress in an online independent study course.

Graduate Teaching Assistant

August 2013 – May 2015

MSU: CEM 141/142 General Chemistry Course Sequence

Dr. Melanie Cooper

Led weekly recitations for a reformed general chemistry course (Chemistry, Life, the Universe, and Everything) the goal of which was to facilitate student development of conceptual understanding through group work. Additionally, I participated in the iterative and collaborative improvement of recitation worksheets and exam questions.

Graduate Teaching Assistant

January – May 2012

MSU: CEM 255 Organic Chemistry Lab

Dr. Ardeshir Azadnia

Oversaw three sections of approximately 20 students, helping students improve laboratory technique and understand the conceptual underpinnings of each experiment.

Graduate Teaching Assistant

August – December 2011

MSU: CEM 143 Survey of Organic Chemistry (lab included)

Dr. John Frost

Reviewed weekly quizzes and monitored student laboratory experiments. Helped facilitate connections between lecture and laboratory content.

Undergraduate Teaching Assistant (lead) January – May 2011  
Pitt: CHEM 0330, Organic Chemistry I Lab Dr. Ericka Huston  
Supervised students during three-hour laboratory sessions, prepared and presented pre-talks given before each lab to demonstrate techniques and expound on the underlying theory, and graded lab reports and worksheets worth 65% of a student's grade.

Undergraduate Teaching Assistant (co-teacher) August 2009 – December 2010  
Pitt: CHEM 0330, Organic Chemistry I Lab Dr. Ericka Huston  
Assisted students with laboratory techniques and answered questions during three-hour labs.

## **PUBLICATIONS**

**Kohn, K. P.;** Underwood, S. M.; Cooper, M. M. (2018) "Connecting Structure-Property and Structure-Function Relationships across the Disciplines of Chemistry and Biology: Exploring Student Perceptions" *CBE-Life Sciences Education*, 17(2), ar33.

**Kohn, K. P.;** Underwood, S. M.; Cooper, M. M. (2018) "Energy Connections and Misconnections across Chemistry and Biology" *CBE-Life Sciences Education*, 17(1), ar3.

## **SELECT PRESENTATIONS**

**Kohn, K. P.;** Underwood, S. M.; Cooper, M. M. "Considering the Relationship between Structure, Properties, and Function: How Students Connect these Ideas across their Introductory Chemistry and Biology Courses." Talk at the 253<sup>rd</sup> American Chemical Society National Meeting in San Francisco, CA. April 2017.

**Kohn, K. P.;** Underwood, S. M.; Cooper, M. M. "The Role of Energy in Chemistry and Molecular Biology." Poster at the CREATE for STEM MiniConference at Michigan State University, East Lansing, MI. February 2016.

**Kohn, K. P.;** Underwood, S. M.; Cooper, M. M. "Connections and Conflicts Students Perceive between Chemistry and Molecular Biology." Talk at the 251<sup>st</sup> National American Chemical Society Meeting in San Diego, CA. March 2016.

**Kohn, K. P.;** Underwood, S. M.; Cooper, M. M. "Exploring Student Understanding of Mechanistic Arrows." Talk at the 23<sup>rd</sup> Biennial Conference on Chemical Education, Allendale, MI. August 2014.

**Kohn, K. P.;** Underwood, S. M.; Cooper, M. M. "Approaches to the Assessment of Student Expertise in Mechanism Drawing." Poster at the CREATE for STEM MiniConference at Michigan State University, East Lansing, MI. February 2014.

## HONORS AND AWARDS

MSU Student Life Leadership Awards: Graduate Student Leader	April 2017
Council of Graduate Students: Flame Award	March 2017

## PROFESSIONAL SERVICE AND MEMBERSHIPS

American Chemical Society September 2011 – *Current*

American Library Association February 2017 - *Current*

Chemistry Graduate Student Orientation Committee

Fundraising Chair

May – August 2013, 2014

Member

May – August 2012, 2013, 2014

Michigan Library Association

February 2017 - *Current*

Michigan State University Council of Graduate Students (COGS)

Vice President of Internal Affairs

June 2016 – April 2017

Acting VP of Internal Affairs

June – October 2016

- Worked with past representatives, graduate student organizations, and department chairs to recruit new representatives to the 2016/2017 assembly of the COGS Full Council. Through these efforts, and those of our President, the Full Council had the most filled seats in our organization's history.
- Served as *president pro tempore* for four weeks in July/August 2016 while the COGS President conducted research in Africa.
- Organized the final preparations for the Fall Welcome Back Cook-out (COGS kick-off event for the year). Served as the volunteer and vendor coordinator for this event.
- Oversaw the Council of Graduate Students website and social media.
- Participated in the hiring and training of four undergraduate office staff.

Chair of the Representation Committee

June 2016 – April 2017

- The Representation Committee reviewed and discussed applications for representative seats on the COGS Full Council. The committee submitted two recommendations to the Full Council: African Graduate Student Association and the Arts & Cultural Management and Museum Studies program. The Full Council voted to grant these seats.

Recording Secretary

March 2016 – October 2016

- Initial planning and organization of the 9<sup>th</sup> Annual Graduate Academic Conference.
- Reformed the organizational procedures of the COGS Office, trained office staff, and served as technical support.
- Oversaw the Council of Graduate Students website and social media.

- Facilitated communication between the Executive Board and the Full Council Representatives. Maintained detailed notes and minutes for Full Council and Executive Board meetings.

Chemistry Department Representative

August 2015 – March 2016

Younger Chemists' Committee

MSU Local Section President

January 2013 – May 2015

- Notable successes include improvement of the section's record keeping and organization, and the establishment of subcommittees including a move to increase the professional development focus of the section.

Chair of the 7<sup>th</sup> Annual Battle of the Chemistry Clubs (BCC)

November 2013 – January 2014

- Organized the planning and running of a competition between seven undergraduate chemistry clubs from across the state of Michigan.

Member

August 2011 – May 2018

- Designed and ran two new events for the 6<sup>th</sup> and 8<sup>th</sup> Annual BCC (2013, 2015). (1) An organic unknown challenge (semi-final event) where students used simple chemical tests and NMR spectra to identify their unknown structure. (2) A (bio-)chemistry photo-scavenger hunt completed by teams in the week before attending the competition, the goal of which was to encourage students to become more familiar with the resources of their university and some chemistry history. About 100 photos and descriptions were submitted, compiled, and put on display during the competition to generate conversation among teams.
- Initiated the return of Merit Badge Day, a one-day event that allowed ~ 30 Boy Scouts and Girl Scouts to obtain their Chemistry badge. Scouts participated in a variety of chemistry related experiments and a poster presentation on 'Chemistry in the Home'.
- Headed the running of a variety of other local section events including the Holiday Food Drive and graduate student welcome breakfast.

## **ADDITIONAL SKILLS AND EXPERIENCES**

Proficient with Microsoft Office suite, Nvivo, Qualtrics, ChemDraw, SciFinder, Google Scholar, and the Education Research Information Center.

Familiar with Reaxys, Web of Science, SPSS and R with interest in further experience.