

Sarah C. Bevilacqua

Ph.D. Candidate in Chemistry
California Institute of Technology

email: sarah@caltech.edu

LinkedIn: www.linkedin.com/in/sarahcbevilacqua

EDUCATION

2017 – Present	California Institute of Technology Ph.D. Candidate in Chemistry	Pasadena, CA
2017	Pennsylvania State University B.S. in Chemistry, <i>summa cum laude</i>	University Park, PA
2014, May – July	Institut Américain Universitaire Study abroad	Aix-en-Provence, France

RESEARCH EXPERIENCE

2017 – Present	Graduate Student Researcher Advisor: Prof. Kimberly See Synthesis of electrolytes to investigate electrodeposition mechanisms and Mg speciation in Mg metal batteries	California Institute of Technology, Pasadena, CA
2016 – 2017	Undergraduate student researcher Advisor: Prof. Raymond Schaak Synthesis of colloidal mixed metal nitrides and investigation of formation mechanisms; synthesis of organic ligands to study nanoparticle assembly	Pennsylvania State University, University Park, PA
2016, May – Aug	Unilever R&D Product Development Advisor: Jamie Miller Modeled lather characteristics of different surfactant formulations; created dissipative particle dynamics (DPD) model of surfactants in parallel with Port Sunlight Laboratory	Unilever, Trumbull CT
2014 – 2015	Undergraduate student researcher Advisor: Prof. Michael Green Grew and characterized cytochrome P450 variants using stopped-flow UV-Vis, freeze-quench preparation of intermediates, Mössbauer spectroscopy, and EXAFS; synthesized ⁵⁷ Fe-heme to modify and characterize horseradish peroxidase	Pennsylvania State University, University Park, PA
2013 – 2014	Undergraduate student researcher Advisor: Dean Douglas Cavener Studied the role of protein SDF2L1 and EIF2AK3 in the PERK signaling pathway in mice through gene expression techniques	Pennsylvania State University, University Park, PA

PUBLICATIONS

3. [Sarah C. Bevilacqua](#), Kim H. Pham, Kimberly A. See, “The Effect of Electrolyte Solvent on Redox Processes in Mg-S Batteries,” *Inorg. Chem.* **2019**, *accepted*. [[doi](#)]
2. Andrew J. Martinolich, Cheng-Wei Lee, I-Te Lu, [Sarah C. Bevilacqua](#), Molleigh B. Preefer, Marco Bernardi, André Schleife, and Kimberly A. See, “Solid State Divalent Ion Conductivity in ZnPS₃,” *Chem. Mater.* **2019**, *31*, 3652-3661. [[doi](#)]
1. Carrie R. Sowers, Rong Wang, Rebecca A. Bourne, Barbara C. McGrath, Jingjie Hu, [Sarah Bevilacqua](#), James C. Paton, Adrienne W. Paton, Sophie Collardeau-Frachon, Marc Nicolino, and Douglas R. Cavener, “The protein kinase PERK/EIF2AK3 regulates proinsulin processing not via protein synthesis but by controlling endoplasmic reticulum chaperones,” *J. Biol. Chem.* **2018**, *293*, 5134-5149. [[doi](#)]

ORAL PRESENTATIONS

2019 May	Inorganic Organometallic Seminar, <i>Pasadena, CA</i>
2019 May	Materials Chemistry for Energy Storage and Conversion, <i>Santa Barbara, CA</i>
2017 May	Schreyer Honors Thesis Defense, <i>University Park, PA</i>

POSTER PRESENTATIONS

2018 November	CCE Chair's Council Meeting, <i>Pasadena CA</i>
2017 September	Penn State Undergraduate Exhibition, <i>University Park, PA</i>
2016 March	American Chemical Society Spring Meeting, <i>San Diego, CA</i>
2015 September	American Chemical Society Central PA Section, <i>University Park, PA</i>
2015 May	Penn State Undergraduate Exhibition, <i>University Park, PA</i>

OUTREACH AND LEADERSHIP

2018 - Present	Chemistry Graduate Studies Committee	California Institute of Technology, Pasadena, CA
	Improve quality of graduate program and maintain its policies	
2018	High School Outreach	California Institute of Technology, Pasadena, CA
	Lecture about redox chemistry and perform battery related demos to 80 high schoolers.	
2017 – Present	Women in Chemistry Committee	California Institute of Technology, Pasadena, CA
	Organize events with women chemists and aid in networking	
2016	PA Junior Academy of Science State Competition	Pennsylvania State University, University Park, PA
	Student judge and reviewer	
2013 – 2017	Science-U, volunteer	Pennsylvania State University, University Park, PA
	Worked with the Discovery Space Children's Science Museum to organize science exhibits free to the public	
	Organized hands-on science activities at the Central Pennsylvania Festival of the Arts to teach the public about scientific principles	
2013 – 2017	Science LionPride, webmaster and volunteer	Pennsylvania State University, University Park, PA
	Talked to groups of ~200 prospective college students about my research at Penn State	
	Worked with the Honors College to recruit prospective science students	
	Created and maintained a current website for our club	
2013 – 2017	Student Mentor	Pennsylvania State University, University Park, PA
	Founded a mentoring program within Science LionPride to help students with classes, tutoring, and internships/REUs	
	Served as a mentor for underclassmen through the Honors College mentoring program	

AWARDS AND HONORS

2019	The Resnick Sustainability Institute at Caltech Fellowship
2018	National Defense Science and Engineering Graduate Fellowship, top 200 applicants
2018	NSF Graduate Research Fellowship Program, honorable mention
2017	Caltech Internal Fellowship
2017	ACS Undergraduate Award in Inorganic Chemistry
2017	NSF Graduate Research Fellowship Program, honorable mention
2017	Chemistry Student Marshal
2016	Penn State Travel Grant
2016 – 2017	John and Elizabeth Holmes Teas Scholarship
2013 – 2017	Dean's List
2015	3M Grant Recipient
2015	President Sparks Award
2014	President's Freshman Award

TEACHING EXPERIENCE

2019	Introduction to Electrochemistry	California Institute of Technology, Pasadena, CA
	Developed homework and exam questions as well as in-class activities	
	Organized weekly office hours and review sessions for exams	
2017	Organic Chemistry II	Pennsylvania State University, University Park, PA
	Held biweekly office hours and review sessions for exams	
	Graded homework and exams	
2016	Advanced Organic Mechanisms	Pennsylvania State University, University Park, PA
	Developed homework and exam questions through literature searches of relevant organic papers	
	Held review sessions for exams	
2016	Fundamentals of Organic Chemistry Lab	Pennsylvania State University, University Park, PA
	Taught organic lab techniques including distillation, extraction, recrystallization, chromatography	
	Graded all lab reports, quizzes, and assignments	
2015 – 2017	Instrument Room	Pennsylvania State University, University Park, PA
	Taught students how to operate and analyze NMR, IR, GC, UV/Vis, and MEL-TEMP	
2015 – 2017	Exam and Homework Grader	Pennsylvania State University, University Park, PA
	Graded exams and homework for Quantum Chemistry, Fundamentals of Organic Chemistry, and Organic Chemistry II	
	Head Grader for Fundamentals of Organic Chemistry	