

Rebecca L. Pinals

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EDUCATION

University of California, Berkeley Berkeley, CA	2016 - Present
Ph.D. Student in Chemical and Biomolecular Engineering; GPA: 4.0 Advisor: Markita Landry	
Brown University Providence, RI	2012 - 2016
B.S. in Chemical and Biochemical Engineering with Honors; GPA: 3.86	
University of Melbourne Melbourne, Victoria, Australia	Spring 2015
Semester Abroad, Chemical Systems; GPA: 3.92	

AWARDS AND HONORS

Ford Foundation Fellowship Honorable Mention, 2017
Outstanding Graduate Student Instructor Award, 2016-2017
NSF Graduate Research Fellowship Program Honorable Mention, 2016
Tau Beta Pi Engineering Honor Society, 2015
Sigma Xi Honor Society of Science and Engineering, 2015
REMRSEC NSF-REU Grant DMR-0220518, 2014
Best Technical Achievement REU Award in Poster Competition, 2014
3rd place in Materials Section of Student Poster Competition at AIChE Annual Meeting, 2014
Valedictorian, Billerica Memorial High School, 2012

PUBLICATIONS

Beyene, A. G., McFarlane, I. R., **Pinals, R. L.**, Landry, M. P. (2017). Stochastic Simulation of Dopamine Neuromodulation for Implementation of Fluorescent Neurochemical Probes in the Striatal Extracellular Space. *ACS chemical neuroscience*. Advance online publication. DOI: 10.1021/acscchemneuro.7b00193.

Anderson, R. T., Zang, X., Fernando, R., Dzara, M. J., Ngo, C., Sharps, M. C., **Pinals, R.**, Pylypenko, S., Lusk, M. T., Sellinger, A. (2016). Direct Conversion of Hydride to Siloxane Terminated Silicon Quantum Dots. *The Journal of Physical Chemistry C*, 120(45), 25822-25831.

POSTERS AND PRESENTATIONS

Jeong, S., **Pinals, R.** (2017, August). *Molecular recognition using biomimetic-polymer-coated graphene oxide quantum dots*. Poster presented at: Berkeley Lab Molecular Foundry User Meeting, Berkeley, CA.

Pinals, R. (2016, April). *Understanding catalyst-support effects and the role of non-stoichiometric hydrogen in the decarboxylation of fatty acids*. Undergraduate honors thesis and oral presentation. Brown University, Providence, RI.

Pinals, R., Kuldipkumar, A., Bransford, P. (2016, August). *Intestinal Precipitation Modeling of In Vitro Data to Predict In Vivo Behavior of Poorly Soluble Drugs*. Poster presented at: Vertex Pharmaceuticals Summer Intern Capstone Presentations, Boston, MA.

Pinals, R., Anderson, R. T., Sellinger, A. (2014, November). *Band-gap Tuning of Colloidal Silicon-based Quantum Dots by Surface Functionalization using Conjugated Organic Ligands*. Poster presented at: AIChE Student Poster Competition, Atlanta, GA.

Pinals, R., Anderson, R. T., Sellinger, A. (2014, July). *Surface Functionalization of Colloidal Silicon-based Quantum Dots*. Poster presented at: REMRSEC REU Poster Session, Golden, CO.

RESEARCH EXPERIENCE

- UC Berkeley Landry Lab**, Graduate Student Researcher | Berkeley, CA 2016 - Present
- Studying protein corona formation around nanomaterials in biological environments to better understand the interactions of polymer-wrapped single-walled carbon nanotube (SWCNT) sensors in cerebrospinal fluid
 - Developing a new platform of optical biosensors for molecular recognition by synthesizing, functionalizing, and characterizing graphene quantum dots
- Vertex Pharmaceuticals**, Materials Discovery and Characterization Intern | Boston, MA Summer 2016
- Established an in vitro transfer assay to study the precipitation of weakly basic model compounds and developed a mathematical model for the in vitro data using Classical Nucleation Theory (CNT) for the quantitative prediction of drug precipitation kinetics
- Brown University Peterson Catalyst Design Lab**, Student Researcher | Providence, RI Feb. 2014 - May 2016
- Researched the direct conversion of vegetable-based feeds into hydrocarbon biofuels by decarboxylation
 - Completed an honors thesis investigating the role of catalyst-support effects on reaction rate and selectivity
 - Helped design and build a gas-phase continuous flow reactor with direct mass spectrometry (MS) analysis
- University of Tennessee, Knoxville Steen Lab**, Student Researcher | Knoxville, TN Summer 2015
- Applied high performance liquid chromatography (HPLC) to research bioavailability of nutrients in deep subsurface sediments to extracellular enzymes
- Colorado School of Mines Renewable Energy Materials Research Science and Engineering Center (REMRSEC) NSF-REU in Sellinger Lab**, Student Researcher | Golden, CO Summer 2014
- Researched electronic band-gap tuning of silicon-based quantum dots by surface functionalization of synthesized organic ligands

OUTREACH AND TEACHING

- Expanding Your Horizons**, UC Berkeley, Logistics Planning Committee Member Sept. 2017 - Present
- Planning and implementing a daylong conference that introduces middle school girls to STEM career opportunities
- Landry Lab**, UC Berkeley, Undergraduate Research Mentor of Tanya Chaudhary Sept. 2017 - Present
- Bay Area Scientists in Schools (BASIS)**, UC Berkeley, Volunteer Teacher Sept. 2016 - Present
- Teaching an hour-long, hands-on science lesson on phase transitions in Bay Area public elementary schools
- Dinner with a Scientist**, Oakland Unified School District, Volunteer Scientist April 2017
- STEM NIGHT**, Grant Elementary School, Volunteer Teacher March 2017
- Girl Scouts Norcal Engineering Fun Day**, UC Berkeley, Catapult-Building Workshop Leader March 2017
- Introduction to Chemical Engineering Design (CBE40)**, UC Berkeley, Graduate Student Instructor Fall 2016
- Taught a 90-minute weekly discussion section with 21 students, held weekly office hours, and developed new course material
- Society of Women Engineers**, Brown University, Outreach Coordinator Oct. 2013 - May 2016
- Coordinated and led biweekly lessons for a math mentoring program with Providence MET High School students
 - Collaborated with the SWE Executive Board to achieve our three primary goals of building an active community of female engineers at Brown, leading outreach activities, and hosting professional development events
- New Scientist Program**, Brown University Peer Advising and Leadership, Mentor Sept. 2013 - May 2016
- Mentored underrepresented minority and women STEM students in an academic and personal capacity

ACTIVITIES

Brown AIChE Executive Committee, Brown University Orchestra (4 years), University of Melbourne Engineering Orchestra, "What's on Tap?" Brown Tap Dance Group, UC Berkeley Danceworx Tap Dance Group, Brown EcoReps, Brown Climate Action Forum, hiking, yoga