

LAUREN REIMNITZ

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Education

PhD Chemical Engineering

University of Texas at Austin

August 2015-Present

B.S./M.S. Chemical Engineering, Summa cum Laude

University of Oklahoma, Norman, OK
Minor in Mathematics, Minor in Chemistry
Overall GPA 3.97, Master's GPA 3.75

May 2014/August 2015

Research Experience

Doctoral Dissertation Research

Synthesis and characterization of colloidal semiconductor nanocrystals under Dr. Delia Milliron

- Mastered several methods of colloidal nanocrystal synthesis using standard Schlenk line techniques
- Developed understanding for manufacturing and processing with mixed nanocrystal films containing vanadia
- Gained proficiency in scanning and transmission electron microscopy, powder X-ray diffraction, Raman spectroscopy, TGA, Scattering-type scanning near-field infrared optical microscopy (s-SNOM), UV-visible spectroscopy, Fourier transform infrared spectroscopy (FTIR) and other materials characterization techniques
- Learned lab management skills through coordinating group purchases, installing and maintaining lab equipment, and teamwork with researchers in and outside of the research group

Fall 2015-Present

Master's Thesis Research

Heterogeneous Catalysis DFT Modeling Researcher under Dr. Bin Wang

- Thesis: "DFT Study of Transition Metal Chalcogenides as Catalysts for the Hydrogen Evolution Reaction"
- Modeled catalyst surface behavior of molybdenum disulfide for hydrogen evolution reaction
- Gained proficiency using Unix systems and molecular modeling software

Fall 2014-Summer 2015

Undergraduate Independent Research

Heterogeneous Catalysis Experimental Researcher under Dr. Friederike Jentoft

- Independently developed experimental procedures for safe, informative investigations
- Analyzed kinetic and surface chemistry data to gain insights on catalysis with mordenite and sulfated zirconia
- Gained proficiency in generating and analyzing FTIR, UV-Vis-NIR, GC-MS data
- Presented results to specialized research groups, e.g., catalysis, biofuels

Fall 2012-Spring 2014

Publications

"Impacts of surface depletion on the plasmonic properties of doped semiconductor nanocrystals". Omid Zandi*, Ankit Agrawal*, Alex B. Shearer, **Lauren C. Reimnitz**, Clayton J. Dahlman, Corey M. Staller, Delia J. Milliron. *Nature Materials*. 2018. 17 (8) p. 710-717.

"Deliquescent chromism of nickel (II) iodide thin films". Timothy D. Siegler, **Lauren C. Reimnitz**, Mokshin Suri, Shin Hum Cho, Amy J. Bergerud, Michael K. Abney, Delia J. Milliron, Brian A. Korgel. *Langmuir*. 2019. 10.1021/acs.langmuir.8b03979

"Influence of dopants on oxygen storage capacity and stability of bixbyite phase vanadium sesquioxide nanocrystals". **Lauren Reimnitz**, Mario Lopez, Delia Milliron. *In preparation*.

"Synthesis of monodisperse, colloidal vanadium dioxide nanocrystals using a core-shell intermediate." **Lauren Reimnitz**, Tushti Shah, Brian Korgel, Delia Milliron. *In preparation*.

Mentorship and Teaching Experience

Research Experience for Undergraduates (REU) Mentor, Summer 2018

Research mentor to Mario Lopez, chemistry student at University of Illinois Chicago

- Trained in nanocrystal synthesis, annealing, data analysis
- Developed new protocol for handling colloidal nanocrystals as powders rather than in solution
- Helped student prepare slides and present in group meeting, prepare poster and oral presentation
- Greatly increased understanding of underlying influences of thermal stability in bixbyite vanadium sesquioxide nanocrystals

Chemical Engineering Materials, Spring 2018

Teaching Assistant of Delia Milliron, University of Texas at Austin

- Wrote homework sets and homework solutions, and one quiz question each week
- Maintained one-hour recitation section weekly for all 49 students.

- Held weekly office hours
- Proctored, graded, and helped write and craft three exams
- Received 4.2/5 overall teaching assistant rating, as evaluated through course feedback survey

Undergraduate Research Mentor, Fall 2017-Spring 2018

Research mentor to Thiri Lwin, chemical engineering undergraduate student at UT Austin

- Trained in nanocrystal synthesis, spin coating, annealing, profilometry, XRD measurements, data analysis
- Student prepared slides and presented in group meetings
- Contributed to efforts to increase thermal stability of bixbyite vanadium sesquioxide nanocrystals with potential applications for low temperature oxygen storage

Undergraduate Research Mentor, Fall 2016

Research mentor to Bryant Sugg, recent chemical engineering graduate from UT Austin

- Trained in nanocrystal synthesis, spin coating, annealing, profilometry, in situ UV-vis measurements
- Student prepared slides and participated in group meetings independently
- Advanced work done the previous summer by Joel Abraham

Engineering Economic Decisions, Fall 2016

Teaching Assistant of Dr. C. T. Sciance, University of Texas at Austin

- Graded 10 homework assignments for 70 enrolled students
- Proctored and graded four exams
- Held one office hour weekly, and by appointment

High School Research Experience Mentor, Summer 2016

Research mentor to Joel Abraham, rising senior at Westwood High School in Austin, Texas

- Trained in spin coating, annealing, profilometry, and in situ UV-vis measurements
- Exposed student to wet lab practices and Schlenk line synthesis techniques
- Research culminated in report and presentation, was continued by another student

Chemical Engineering Design Laboratory, Fall 2014

Teaching Assistant of Dr. M. U. Nollert, University of Oklahoma

- Maintained equipment and provided necessary materials to one lab section containing 20 students
- Supervised and mentored 20 chemical engineering seniors in this lab section for one 5-hour lab session weekly

Chemical Engineering Unit Operations Laboratory, Spring 2014

Teaching Assistant of Dr. M. U. Nollert, University of Oklahoma

- Maintained equipment and provided materials to one lab section containing about 20 students
- Supervised and mentored those 20 chemical engineering juniors for this 5-hour lab session weekly

Freshman Engineering Experience, Spring 2014

Teaching Assistant to Dr. M. U. Nollert, University of Oklahoma

- Designed, set up, and led introductory engineering lab experiments with 3 other engineering students
- Served as teacher and mentor to about 60 engineering freshmen twice weekly

Awards and Fellowships

Exxon Mobil Fellowship	Fall 2017-Present
T.W. Whaley, Jr. Friends of Alec Endowed Fellowship	Spring 2016-Summer 2016
Gary and Teresa Binning Engineering Fellowship	Fall 2015
Outstanding Senior, School of Chemical, Biological, and Materials Engineering	Spring 2014
Outstanding Returning Dean's Leadership Mentor	Spring 2014
Outstanding Junior Researcher	Spring 2013
Program of Excellence Undergraduate Research Scholarship	Spring 2013-Fall 2013
ConocoPhillips SPIRIT Scholarship	Fall 2012-Spring 2014
Chevron Phillips Program Mentorship	Fall 2012-Spring 2013
Sooner Engineering Education Center Scholarship	Spring 2012-Fall 2012
NASA Women in Science Conference 2011 Fellowship	Fall 2011
Mildred Phillips Kerr Program of Excellence Scholarship	Fall 2011-Spring 2014
National Merit University of Oklahoma Scholarship	Fall 2010-Spring 2015
Oklahoma Regents Scholarship	Fall 2010-Spring 2014

Internship Experience

Center for the Creation of Economic Wealth Projects

- **Team Leader and Design Engineer for ToeTronics** Spring 2015
 - Led interdisciplinary team of four engineers in creating a novel medical measurement device
 - Gained experience in rapid prototyping techniques including machining, experiential prototyping
 - Tested intermediate prototypes in realistic market testing scenarios
 - Created a device being used by health professionals at the OU Health Sciences Center to help treat cancer
- **Marketing Analyst and Engineer at Lawrence Livermore National Laboratory** Summer 2014
 - Conducted cold calls to gauge market problems and interest
 - Worked closely with a small, diverse team of business and engineering students
 - Gained exposure to startup environment in California's Bay Area
- **Co-Inventor and Engineer at Levaté, LLC** Spring 2014
 - Worked with diverse team of engineers from varying disciplines
 - Created a wheelchair accessory device to help improve mobility for users of wheelchairs
 - Gained experience with field marketing, cold calling, experiential prototyping, presenting to investors
- **Co-Inventor and Marketing Analyst at Siren, LLC** Fall 2013
 - Worked on diverse team of business, science, and engineering majors to build a novel software package
 - Ideated and built a software package for predicting weather impact on long distance truck routes
 - Built functional business relationships with professionals from software, trucking, meteorology industries

Lauderdale Environmental Engineering, Engineering Intern

Summer 2011, Summer 2012

- Streamlined company database and storage
- Designed and built sustainable outdoor features
- Conducted scientific research for specific cases
- Conducted field interviews of clients

International Experience

Disruptive Technologies Ideation

Arezzo, Italy

June 21 to July 21, 2012

- Studied revolutionary and incremental innovation business models

Computer Skills

Experienced in use of VASP, Accelrys Materials Studio, VMD, OriginLab software, WaveMetrics Igor Pro
Proficient programmer in Java, VBA, MathCAD, Polymath, Python

Clubs, Campus Involvement, and Outreach

Materials Research Society UT Austin Student Chapter

Executive Member, Fall 2017-present

- Volunteered for Introduce a Girl to Engineering day MRS exhibit
- Helped organize and advertise events with MRS to multiple departments at UT Austin

McKetta Department of Chemical Engineering Graduate Leadership Council

Graduate Student Safety Liaison, Fall 2017-Fall 2018

- Organized monthly meeting for safety representatives for every group in the department to share safety information
- Attended monthly meeting with department safety committee to convey information to faculty and staff
- Organized semesterly meeting for entire department to share safety information
- Helped implement brand new Lab Safety Fellowship Program to reward students who contributed lasting positive influence on safety culture in McKetta Department of Chemical Engineering

NASCENT Center

Researcher, Spring 2016-Fall 2017

- Attended 2016 annual NSF site visit in Albuquerque, NM and 2016 Industrial Advisory Board meeting in Austin, TX
- Attended and contributed to weekly student seminars on semiconductor manufacturing research
- Volunteer for Introduce a Girl to Engineering Day NASCENT exhibit

McKetta Department of Chemical Engineering Graduate Leadership Council

Recruitment Chair, Fall 2016-Fall 2017

- Coordinate vendors, new recruits, existing students and faculty during recruitment events
- Contributed creative recruitment weekend event ideas

McKetta Department of Chemical Engineering Graduate Leadership Council

Public Relations Chair, Fall 2015-Fall 2016

- Created and maintained Twitter and Facebook page
- Updated social media to publicize council events
- Published meeting minutes and council deliverables to council members and relevant external parties

Materials Research Society University of Texas Chapter

Member, Fall 2015-present

- Volunteered for Environmental Science Institute Interactive Community Science Fair Oct. 16

University of Oklahoma Dean's Leadership Council

Mentor, Recruitment Chair, Fall 2012-Fall 2014

- Helped freshman and transfer engineering students connect to a new campus
- Coordinated group events for mentors and freshmen
- Served as teaching assistant for introductory engineering classes

Science Museum Oklahoma

Exhibitor, Spring 2013

- Ran demonstrations with liquid nitrogen at science fair for Oklahoma middle school students

ConocoPhillips SPIRIT Scholars Program

Fall 2012-Spring 2013

- Painted low income housing with Rebuilding Together OKC
- Gathered donated food supplies with the Oklahoma Food Bank

Sooner Engineering Education Center

Mentor, Spring 2012-Fall 2012

- Designed science and engineering activities for K12 students
- Led K12 science experiences
- Initiated outreach to local K12 groups