

Alyssa Travitz

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EDUCATION

- 2016 – present **University of Michigan** | Ann Arbor, MI
Ph.D. Candidate, Macromolecular Science and Engineering, Scientific Computing
M.S. Macromolecular Science and Engineering, April 2018
GPA: 4.00
- 2013 - 2016 **Cornell University** | Ithaca, NY
BS Materials Science and Engineering, April 2016
GPA: 3.34
- 2012 – 2013 **Northeastern University** | Boston, MA
College of Engineering
GPA: 3.85

RESEARCH & PROFESSIONAL EXPERIENCE

- 2017 - present **Graduate Research Assistant** | University of Michigan
Thesis Advisor: Professor Ronald G. Larson
Thesis Project: Multiscale modeling of dynamic polymer-colloid systems.
- Performing molecular dynamics simulations to model the long time-scale rheological behavior of polymer-colloid networks in waterborne coatings
 - Implemented dynamic bonding functionality in [HOOMD-blue](#) to enable computationally efficient modeling of dynamic polymer/colloid interactions in experimental systems
 - Collaborating with polymer theorists and industry experimentalists to develop and validate models
 - Mentored three undergraduate students, introducing them to molecular simulations and computational research methods
 - Contributing new features, leading documentation rewrites, and mentoring students through Google Summer of Code as a committer for [signac](#), a data management framework
- Fall 2016 **Graduate Rotation Student** | University of Michigan
Rotation Advisor: Dr. Mark Banaszak Holl
Rotation Project: Dielectric Enhancement of Polypropylene/Polyethylene Composites
- 2015 – 2016 **Senior Thesis Student** | Cornell University
Senior Thesis Advisors: Dr. Lara A. Estroff and Dr. Ulrich Wiesner
Thesis Title: Effects of Shear on Self-Assembly of Triblock Terpolymer-Directed Preceramics

- Fall 2014 & Summer 2015 **Product Design Co-op** | Johnson & Johnson Consumer Division
Facial Moisture Team
- Designed a lightweight sunscreen for face using organic sun-filters
 - Developed an inorganic sunscreen chassis for use in Neutrogena, Aveeno, and RoC brands
- 2013 – 2016 **Undergraduate Researcher** | Cornell University
Research Advisor: Dr. Ulrich Wiesner
- Investigated and characterized a dynamic system of functional core-shell silica nanoparticles (C-Dots)
 - Functionalized C-Dots for drug delivery applications
- 2012 – 2013 **Undergraduate Researcher** | Northeastern University
Research Advisor: Dr. Thomas Webster
- Cultured fibroblasts to study the effects of lubricin on ocular fibroblast adhesion

LEADERSHIP & SERVICE

- 2017 - present **Co-Founder and Event Lead** | REACT K-12 Educator Workshop
- Organized the first REACT Workshop (Research Education and Activities for Classroom Teachers), a student-led workshop for K-12 educators
 - Led reorganization into a distributed, committee-style org-structure and initiation as a U-M student organization
 - Managed as many as 30 graduate students annually to host more than 90 educators over three years, leading expansion of REACT to Cornell University for summer 2020
- 2018-2019 **Co-President** | ACS POLY/PMSE Student Chapter at the U of M
- Led a cross-disciplinary team to create a community of polymer researchers at U-M.
 - Acquired funding through grants and industry partnerships to support workshops, industry recruiting, outreach initiatives, and social events
- 2017 - 2018 **K-12 Outreach Co-Chair** | ACS POLY/PMSE at the U of M
- Facilitate UM students and faculty visits to the classrooms of ~1700 K-12 students each year in the Ann Arbor and Detroit Public Schools
 - Develop curriculum, acquire funding, and organize classroom teaching visits by students and faculty
- Summer 2017 **Science Communication Fellow** | UM Museum of Natural History
- Fall 2016 **Presenter** | Polymer Bootcamp at the University of Michigan
- Presented an "Introduction to Polymer Science" lesson to graduate and undergraduate students from multiple departments throughout U of M

- Fall 2016 **Committee Member** | U-M Engineering Graduate Symposium
- Organized tours and social events for prospective engineering graduate students
- Spring 2016 **Course Grader** | Electronic, Magnetic, and Dielectric Properties of Materials
Cornell MSE Department
Instructor: Professor Darrell Schlom
- Fall 2015 **Undergraduate Teaching Assistant** | Thermodynamics of Condensed Systems
Cornell MSE Department
Instructor: Professor Michael O. Thompson
- Fall 2015 –
Spring 2016 **Corporate Relations Chair** | Cornell Materials Society
- Coordinated with companies and graduate programs to host info sessions
 - Member of event planning committee to educate 1st year students about MSE
- Fall 2015 **Orientation Leader** | Cornell University
- Facilitated group orientation for 18 incoming transfer students
 - Selected as a panelist to represent the College of Engineering at a transfer student information session

PEER-REVIEWED PUBLICATIONS

[1] **A. Travitz**, A. Muñiz, J. Beckwith, R. Cersonsky, “Bringing Science Education and Research together to REACT,” American Society for Engineering Education Virtual Conference, June 2020.

[2] W. Zhang and **A. Travitz**, R. G. Larson, “Modeling Intercolloidal Interactions Induced by Adsorption of Mobile Telechelic Polymers onto Particle Surfaces,” *Macromolecules*, vol. 52, no. 14, pp. 5357–5365, Jul. 2019.

CONFERENCE TALKS

Travitz, A. and Dice, B. (2019, October) *REACT: Connecting K-12 STEM Educators with Current Research*. Talk presented at the Michigan Section of the American Association of Physics Teachers, Flint MI.

Travitz, A., Zhang, W. and Larson, R.G. (2019, June) *Modeling of polymer-induced colloid interactions at multiple length scales*. Talk presented at 93rd American Chemical Society Colloid and Surface Science Symposium, Atlanta, GA.

Travitz, A., Zhang, W. and Larson, R.G. (2018, November) *Multiscale Modeling of Polymer-Colloid Interactions in Water-based Coatings*. Talk presented at Materials Research Society Fall Meeting, Boston, MA.

POSTER PRESENTATIONS

Travitz, A., Zhang, W. and Larson, R.G. (2018, November) *Modeling interactions between polymers and colloids in waterborne coatings*. Poster presented at University of Michigan Macromolecular Science and Engineering Symposium, Ann Arbor, MI.

Travitz, A., Hajizadeh E., Wang, S., Zhang, W. and Larson, R.G. (2018, May) *Multiscale Modeling of Telechelic Polymer-Colloid Interactions*. Poster presented at Detroit Society for Coatings Technology FOCUS conference.

Travitz, A., Hajizadeh E., Wang, S., Zhang, W. and Larson, R.G. (2017, October) *Multiscale Modeling of Telechelic Polymer-Colloid Interactions*. Poster presented at University of Michigan Macromolecular Science and Engineering Symposium, Ann Arbor, MI.

Travitz, A., Ethan Susca, Lara A. Estroff, and Ulrich Wiesner (2016, May). *The Effect of Shear and solvent Annealing on the Self-Assembly of a Triblock Terpolymer Directed Preceramic*. Presented at Cornell University Materials Science and Engineering Poster Session, Ithaca, NY.

HONORS & AWARDS

Rackham Predoctoral Fellowship, Summer 2020 - Spring 2021

Detroit Society of Coatings Technology FOCUS Scholarship 2020, Spring 2020

Nonna L. Hamilton Student Service Award, Fall 2019

3M Fellowship, Spring/Summer 2019

Oral Presentation Award, MRS 2018 Fall Meeting Symposium Session BM03

PPG Award for Best Poster in Polymer Engineering, University of Michigan Macromolecular Science and Engineering Symposium 2018

1st prize in University of Michigan division poster competition, Detroit Society for Coatings Technology FOCUS Conference

Student Ally for Diversity, Rackham Graduate School, University of Michigan, 2017

James A. and Hazel L. Hughes Fellowship, Rackham Graduate School, University of Michigan, 2016

Outstanding Senior Thesis Award, Cornell University, Materials Science and Engineering, 2016.

Gordon CenSSIS Scholar, Northeastern University, 2012

Connections Scholarship, Northeastern University, 2012