

# RACHEL MOGLEN

 <https://rmoglen.github.io/>

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## EDUCATION

**University of Texas**, Austin, TX

Ph.D. Operations Research and Industrial Engineering, GPA: 4.0

Fall 2019 – Present

**University of Maryland**, College Park, MD

M.S. Mechanical Engineering, GPA: 3.80

Fall 2017 – Spring 2019

B.S. Civil and Environmental Engineering, GPA: 3.68

Fall 2013 – Spring 2017

**EIT Environmental Engineering**, MD

June 2017

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## AWARDS AND SERVICE

**Cockrell School of Engineering Fellowship**, University of Texas at Austin

Fall 2019 – Spring 2020

**INFEWS Scholar**, University of Texas at Austin

Fall 2019 – Present

- Selected to participate in A National Science Foundation Research Traineeship (NRT) focused on Innovations at the Nexus of Food-Energy-Water Systems (INFEWS)

**Scientific Committee Member**, Trans-Atlantic Infraday Conference

Fall 2018, Fall 2019

- Helped organize an international conference with 30 presentations and approximately 80 attendees

**INFORMS Student Chapter MEGSB Representative**, University of Texas at Austin

Fall 2019 – Present

- Representing ORIE program concerns to the Mechanical Engineering Student Board

**Society of Women in Engineering Mentor**, University of Texas at Austin

Fall 2019 – Present

**Dean's M.S. Research Award Competition Department Finalist**, University of Maryland

Spring 2019

**Engineering Honors Student**, University of Maryland

Spring 2016 – Spring 2017

**College of Engineering Most Outstanding Research Award**, University of Maryland

Spring 2017

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## RESEARCH AND PROFESSIONAL EXPERIENCE

**University of Texas at Austin**, Austin, TX

Fall 2017 – Present

**Research Assistant for Dr. Benjamin Leibowicz**

*Python*

- Studying optimization of the Food-Energy-Water Nexus for a resilient, sustainable, economical future

**Washington Gas**, Springfield Virginia

Summer 2019

**Pipeline Risk Intern for the Distribution Integrity Management Team**

*R, ArcGIS*

- Developed ArcGIS-based risk model for natural threats to natural gas distribution pipelines
- Created scripts in for extracting relevant natural features

**University of Maryland**, College Park, MD

Fall 2017 – Spring 2019

**Research Assistant for Dr. Steven Gabriel**

*R, Python*

- Applied Stochastic and Deterministic Optimization to the energy sector for improved flexibility
- A 3-minute video describing my research can be found [here](#)

**University of Maryland**, College Park, MD

Spring 2018, Spring 2019

**Teaching Assistant for Simulation and Design of Experiments**

*R, MATLAB*

**Whisker Labs**, Germantown, MD

Summer 2017

**Research and Development Intern for Demand Response Team**

*Python, R, AWS*

- Coded and deployed tool on AWS Lambda to notify users of extreme energy prices in ERCOT

**University of Maryland**, College Park, MD

Fall 2016 – Spring 2017

**Research Assistant for Dr. Kaye Brubaker**

*MATLAB*

- Developed life cycle predictive model of algae bloom probabilities on the Chesapeake Bay

**LimnoTech**, Washington, D.C.

Summer 2016

**Engineering Intern for a Water Resources Consulting Firm**

*ArcGIS, Excel*

- Researched and documented data sources as part of a Harmful Algal Bloom (HAB) modeling project

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## RELEVANT COURSES

Production and Inventory Control	Applied Machine Learning
Probability and Statistics	Operations Research Models
Simulation and Design of Experiments	Applied Multivariate Analysis
Probabilistic Optimization	Microeconomics
Multivariate Statistical Analysis	Decision Analysis

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## PRESENTATIONS

<b>A Deterministic and Stochastic Dynamic Programming Approach to Demand Response Planning</b> Trans-Atlantic Infraday Conference Federal Energy Regulatory Commission, Washington, DC	Nov 2018
<b>Using Dynamic Programming for Real-Time Residential Demand Response Scheduling</b> Invited Lecture for Probabilistic Optimization (Graduate-level course) University of Maryland, College Park, MD	Nov 2018
<b>Using Dynamic Programming for Real-Time Residential Demand Response Scheduling</b> Computational Management Science Conference Norwegian University of Science and Technology, Trondheim, NO	May 2018
<b>Bloom and Bust: Modeling <i>Karlodinium veneficum</i> Growth Dynamics</b> Undergraduate Engineering Honors Thesis Presentation University of Maryland, College Park, MD	May 2017

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## PUBLICATIONS

- Chanpiwat, P., Gabriel, S. A., **Moglen, R. L.**, and Siemann, M. J. (2020). Using Cluster Analysis and Dynamic Programming for Demand Response Applied to Electricity Load in Residential Homes. ASME. J. Eng. Sustain. Bldgs. Cities. February 2020; 1(1): 011006. <https://doi.org/10.1115/1.4045704>
- Moglen G. E., McCuen R. H., & **Moglen R. L.** (2018). Consequences of Changes to the NRCS Rainfall-Runoff Relations on Hydrologic Design. Journal of Hydrologic Engineering, 23(8), 04018032. [https://doi.org/10.1061/\(ASCE\)HE.1943-5584.0001681](https://doi.org/10.1061/(ASCE)HE.1943-5584.0001681)
- Moglen R. L.**, Chanpiwat P., Gabriel S. A., Blohm A. (2020). A Dynamic Programming Approach to Optimal Residential Demand Response Scheduling in Real-Time. (in review)