

Olivia Ryan

(she/her)

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Education

Ph.D. – Engineering Education

Anticipated May 2026

Virginia Polytechnic Institute and State University (VT)

Focus: Mathematics curriculum barriers in engineering

Advisor: Dr. Susan Sajadi

M.S. – Engineering Mechanics

Anticipated May 2025

Virginia Polytechnic Institute and State University (VT)

Focus: Improving homework feedback system for mechanics education

Advisor: Dr. David Dillard

B.S. – Engineering

May 2020

Roger Williams University (RWU)

(summa cum laude)

Specialization: Electrical Engineering

Minor: Mathematics

Research Experience

VT Department of Engineering Education

Aug. 2022 – Present

Graduate Research Assistant

- Collaborate with multiple colleagues to conduct research projects, analyze data, and disseminate findings through conference and journal publications
- Wrote code that automates the data cleaning process for an AI-focused project
- Developed a protocol and conducted interviews with 15 first-year engineering students about their math experiences
- Conducted 10 focus groups with first-year engineering students about conflict and psychological safety
- Developed a conflict management workshop that was presented to multiple engineering classes and engineering instructors

VT Department of Engineering Education and Engineering Mechanics

Aug. 2023 – May 2024

Graduate Research Assistant

- Developed a code that will be incorporated into an online homework system to provide individualized feedback to students in Mechanics of Materials
- Refined the homework submission system for the pilot semester

Brown University Mittleman Lab

Aug. 2020 – May 2021

Graduate Research Assistant

- Re-examined a previous experiment on a Terahertz metamaterial to try and replicate the results
- Assisted senior Ph.D. students with their Terahertz communication experiments

RWU School of Engineering

Sept. 2019 – March 2020

Undergraduate Research Assistant

- Collaborated with a mechanical engineering faculty to teach 240 local elementary school students about wind energy
- Created educational documents to communicate electrical engineering principles to non-experts
- Planned an end-of-year event to celebrate the accomplishments of the students

Bioinspired Robotics (NSF REU)

June 2019 – Aug. 2019

Undergraduate Research Assistant

- Performed experiments on Luneburg lenses under the guidance of a post-doctoral associate
- Experimentally confirmed the novel qualities of the Luneburg lenses with their simulated results
- Designed a robust system to hold the Luneburg lens during experiments

Teaching Experience

VT Rising Sophomore Abroad Program

Spring 2024

Co-Instructor for Australia and New Zealand Track

- Led Friday recitation sessions for 29 undergraduate students enrolled in a class about global engineering

VT Rising Sophomore Abroad Program

Spring 2023

Co-Instructor for UK & Ireland Track

- Led Friday recitation sessions for 22 undergraduate students enrolled in a class about global engineering
- Traveled with students to the UK/Ireland for a study-abroad experience

Schuler Scholar Program

Nov. 2021 – July 2022

STEM Program Associate

- Provided supplemental math and science education to students across 4 different Chicago Public Schools
- Identified algebra gaps and delivered curriculum to overcome those gaps
- Created STEM resources for students and colleagues

Brown Sheridan Teaching Seminar

Fall 2020

- Completed level one of Brown University's teaching seminar

RWU Tutoring Center

Aug. 2016 – May 2020

Math Peer Tutor

- Assisted math classes by taking notes and conducting exam review sessions
- Hosted tutoring hours with students to review homework and clarify concepts from class
- Continued assisting students virtually throughout the spring of 2020

Other Work Experience

Sargent & Lundy

June 2021 – Oct. 2021

Associate I

- Collaborated with multiple engineering disciplines to provide substation design packages to clients
- Collected information from external vendors to create proper specification sheets

RWU Department of Resident Life and Housing

Aug. 2019 – May 2020

Resident Assistant

- Supported 40 first-year students in their transition to college
- Created an inclusive community among the Honors Program resident hall
- Enforced all University rules and policies in the residential community

ComEd – An Exelon Company

June 2018 – Aug 2018

Intern – Voltage Optimization (VO) Team

- Developed a method to choose appropriate Bellwether meters for feeders throughout Chicago that ComEd anticipated implementing voltage optimization in 2018
- Performed data analysis for over 3000 critical meters that will implement VO in 2018
- Built one-line displays for 6 stations on a new data system for the implementation of VO

Park Ridge Soccer

March 2011 – June 2022

Referee, Coach, and Data Entry

- Obtained USSF Grade 8 referee certification and officiated over 250 soccer games for 10 different age groups.
- Planned and implemented training sessions for groups of new soccer players, aged 5 to 10
- Input data for over 500 players in the soccer program

Maine South High School

Aug. 2014 – Aug. 2017

Bookstore Summer Employee

- Managed the packing, organization, and delivery of 2,400 boxes to students each summer
- Communicated information about the updated computer system and order progress from the bookstore to the administrative office

Certifications

Engineer in Training (EIT) – *Illinois*

May 2021

Journal Publications

1. **Ryan, O.**, Fisher, M., Schibelius, L., Huerta, M., Sajadi, S., & Drinkwater, K. (Major Revisions). *A Scenario-Based Approach: Helping Engineering Students Manage Conflict*. *Advances in Engineering Education*.
2. Sajadi, S., Huerta, M., **Ryan, O.**, & Drinkwater, K. (Accepted). *Harnessing Generative AI to Enhance Feedback Quality in Peer Evaluations within Project-Based Learning Contexts*. *International Journal of Engineering Education*.
3. Huerta, M., Sajadi, S., Schibelius, L., **Ryan, O.**, & Fisher, M. (Major Revisions). *An Exploration of Psychological Safety and Conflict in First-Year Engineering Student Teams*. *Journal of Engineering Education*.
4. Guerboukha, H., Shrestha, R., Neronha, J., **Ryan, O.**, Hornbuckle, M., Fang, Z., & Mittleman, M. (2020) *Efficient Leaky-Wave Antennas at Terahertz Frequencies Generating Highly Directional Beams*. *Applied Physics Letters* 117(26).
5. Zhao, L., Laredo, E., **Ryan, O.**, Yazdkhasti, A., Kim, H-T., Ganye, R., Horiuchi, T., & Yu, M. (2020). *Ultrasound Beam Steering with Flattened Acoustic Metamaterial Luneburg Lens*. *Applied Physics Letters*, 116 (7).

Peer-Reviewed Conference Papers

1. **Ryan, O.**, & Sajadi, S. (2024, June). *Understanding Students in Times of Transition: The Impact of the COVID-19 Pandemic on Engineering Students Math Readiness and Transition into Engineering*. American Society of Engineering Education (ASEE) Conference, Portland, OR
2. **Ryan, O.**, & Benitz, M. (2024, June). *Evaluating Fourth-Grader's Perception of Engineering Through a Community-Engaged Project*. American Society of Engineering Education (ASEE) Conference, Portland, OR
3. Drinkwater, K., **Ryan, O.**, Fisher, M., Sajadi, S., & Huerta, M. (2024, June). *Improving Peer Feedback in Project-Based Learning Contexts: An Investigation into a First-Year Engineering Intervention*. American Society of Engineering Education (ASEE) Conference, Portland, OR
4. **Ryan, O.**, & Sajadi, S. (2024, February). *Beyond Math Readiness: Understanding Why Some Women Pursue Engineering*. 2024 Collaborative Network for Engineering & Computing Diversity (CoNECD), Arlington, VA
5. Sajadi, S., **Ryan, O.**, Schibelius, L., & Huerta, M. (2023, October). *WIP: Using Generative AI to Assist in Individual Performance Feedback for Engineering Student Teams*. 2023 IEEE Frontiers in Education Conference (FIE), College Station, TX
6. Schibelius, L., **Ryan, O.**, & Sajadi, S. (2023, October). *Student perceptions of teamwork, conflict, and industry preparedness in engineering interdisciplinary capstone design*. 2023 IEEE Frontiers in Education Conference (FIE), College Station, TX

7. **Ryan, O.**, Fisher, M., Schibelius, L., Huerta, M., & Sajadi, S. (2023, June). *Using a scenario-based learning approach with instructional technology to teach conflict management to engineering students*. American Society of Engineering Education (ASEE) Conference, Baltimore, MD

Conference Poster and Workshop Presentations

1. Fisher, M., Huerta, M., **Ryan, O.**, Sajadi, S., & Schibelius, L. (2023, June). *Dysfunctional Teams, Functional Teaching Approaches: Implementing Conflict Management Training in the Classroom for Engineering Teams*. American Society of Engineering Education (ASEE) Conference, Baltimore, MD
2. **Ryan, O.**, Levesque, H., Harkins, M., Hysong, N., & Gallagher, P. (2020, October). *Improving Children's Bicycle Safety Through the Use of 'Smart' Technology*. American Society of Engineering Education (ASEE) Northeast Section Conference, Bridgeport, CT
 - **First place in the student poster competition**
3. Dunn, B., & **Ryan, O.** (2019, November). *Education Fourth Graders on Winder Energy and Engineering Design*. National Collegiate Honors Council Conference, New Orleans, LA
4. DelSanto, A., Phetteplace, E., & **Ryan, O.** (2017, September). *Drinking Water Project in Anconcito, Ecuador*. Northeast Graduate Student Water Symposium, Amherst, MA

Academic Achievements and Awards

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| 1. VT Pratt Fellowship | Fall 2022 – Spring 2023 |
| 2. Brown University Graduate School Fellowship | Fall 2020 – Spring 2021 |
| 3. RWU Top Engineering Graduate | May 2020 |
| 4. RWU Presidential Core Values Medallion | May 2020 |
| 5. RWU Honor Program Graduate | May 2020 |
| 6. Henderson Outstanding Math Tutor Award | May 2020 |
| 7. RWU Robotics Award Co-Recipient | May 2020 |
| 8. RWU Presidential Scholar | Fall 2016 – Spring 2020 |
| 9. RWU Corporate Scholar | Fall 2018 – Spring 2020 |
| 10. RWU Dean's List | Fall 2016 – Spring 2020 |
| 11. Harold G. Way Scholarship Award Recipient | May 2019 |

Academic Service, Leadership Experience, and Other Projects

VT Engineering Education Fall 2023 – Spring 2024
Ambassador

- Participated and engaged in prospective student recruitment events at Open Houses and Admitted Students Day

Women in Engineering: A Review of the 2022 Literature Fall 2022
Society of Women Engineers

- Read articles and wrote summaries about papers featuring women in engineering, which was used to write a literature review for the SWE magazine

RWU Engineers Without Borders (EWB) Spring 2017 – Spring 2019
President; Secretary

- Planned and participated in 6 international service trips, oversaw the project meetings, and helped maintain a strict budget
- Collaborated with multiple faculty and campus community members to ensure the success of the project

RWU Electrical Engineering Club (IEEE) Fall 2017 – Fall 2019
President

- Organized group meetings, managed club fundraisers, and planned a trip to the regional conference

RWU Food Recovery Network (FRN)

Fall 2019 – Spring 2020

Social Media Coordinator

- Packaged leftover, otherwise wasted, food from the dining hall to deliver to local shelters two times a week

RWU School of Engineering (SECCM)

Fall 2017 – Spring 2020

Student Ambassador

- Aided the School of Engineering by conducting tours and answering questions about the school for prospective students in over 20 different in-person and virtual events
- Hosted prospective students for lunch and a shadow day
- Informed first-year students of various ways they can get involved in the School of Engineering

Service-Learning Project on Food Insecurity

Spring 2018

- Studied food insecurity in Rhode Island through a weeklong community engagement experience.
- Developed recommendations on food insecurity and presented them to RI state legislators.

Professional Affiliations

1. American Society of Engineering Education (ASEE)
2. Society of Women Engineers (SWE)