Jacob Rodgers

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Education

Oregon State University — Corvallis, OR
Ph.D. Physics Education Research — September 2024–Current

- Graduate Certificate in College and University Teaching

Michigan State University — East Lansing, MI
B.A. Physics — April 2024

- Minor in Computational Mathematics, Science and Engineering

Research Experience

Oregon State University — Corvallis, OR
Graduate Research Assistant — Spring 2025–Current

- Modeling Pathways Through the Physics Major at Oregon State
- Conducted quantitative analysis of student enrollment and performance data to represent pathways through the physics major at Oregon State University, which features a unique upper-division curriculum: Paradigms in Physics. Focused on identifying common course sequences, dropout points, and retake patterns to inform curriculum development and student support strategies.

Michigan State University – Dept. of Physics and Astronomy — East Lansing, MI
Undergraduate Researcher – Physics Education Research Lab — Fall 2022–Fall 2024

- Advisor: Dr. Marcos "Danny" Caballero
- Project: "Cataloging Engagement In Computational Practices In A High School Physics Classroom"
- *Employed a qualitative interview process to try to understand computation being integrated into high school physics classrooms. Through this interview, we explored insights into how the students perceive and interact with computation, as well as the practices employed in the classroom.*

Michigan State University – Dept. of Physics and Astronomy — East Lansing, MI
Undergraduate Researcher – Physics Education Research Lab — Spring 2022–Fall 2022

- Advisors: Dr. Paul Irving & Dr. Daryl McPadden
- Project: "Computation in High School Physics: How the pieces fit together."
- *Using a card sort interview format, we were able to analyze a students experience to gain insight on how the class is perceived. This lead to conclusions like how there are dissonances in the way this teacher taught physics based on the practice they may be trying to teach, and how a student interacts with those dissonances.*

Posters

1. **J. Rodgers**, P.C. Hamerski, D. McPadden, L. A. H. Wood, M.D. Caballero, "Cataloging Engagement In Computational Practices In A High School Physics Classroom", *University Undergraduate Research and Arts Forum (UURAF)*, East Lansing, Michigan. April 2023.
2. **J. Rodgers**, P.C. Hamerski, D. McPadden, M.D. Caballero, P.W. Irving, "How do curriculum design decisions influence student expectations around physics and computation in a computation-integrated physics high school classroom?", *American Association of Physics Teachers Summer Meeting (AAPT)*, Grand Rapids, Michigan. July 2022.
3. **J. Rodgers**, P.C. Hamerski, D. McPadden, M.D. Caballero, P.W. Irving, "How do curriculum design decisions influence student expectations around physics and computation in a computation-integrated physics high school classroom?", *Oslo PER Summer Institute (OPSI)*, Oslo, Norway. June 2022.

Presentations

Contributed Talks

1. **J. Rodgers**, P.C. Hamerski, D. McPadden, M.D. Caballero, P.W. Irving, "Computation in High School Physics: How the pieces fit together", *American Association of Physics Teachers Summer Meeting (AAPT)*, Grand Rapids, Michigan. July 2022.

Teaching Experience

Oregon State University

'PH' *indicates the classes taught in the Physics department*
'X students' *indicates the number of students with whom I interact directly*

Fall 2024 PH 211 General Physics with Calculus (Recitation), Graduate Teaching Assistant, 30 students
Winter 2025 PH 202 General Physics (Recitation), Graduate Teaching Assistant, 210 students
Spring 2025 PH 211 General Physics with Calculus (Studio), Graduate Teaching Assistant

Michigan State University

'PHY' *indicates the classes taught in the Physics department*
'X students' *indicates the number of students with whom I interact directly*

Spring 2024 PHY 183B Physics for Science and Engineers I, Undergraduate Learning Assistant, 65 students
Fall 2023 PHY 183B Physics for Science and Engineers I, Undergraduate Learning Assistant, 45 students
Spring 2023 PHY 183B Physics for Science and Engineers I, Undergraduate Learning Assistant, 39 students
Fall 2022 PHY 183B Physics for Science and Engineers I, Undergraduate Learning Assistant, 40 students

Curriculum Development

Accessibility Focus, PH 211 (Fall 2024)
Implemented new recitation worksheets to improve accessibility.

Physics Projects Redesign, PHY 183B (2023-2024)
Reconstructed in-class projects to cultivate improved physics learning.

Extracurricular Activities

- **Mentor** Oregon State University 2025–Current
  Served as a graduate student mentor in the departmental mentorship program, supporting first-term graduate students in their transition to graduate school
- **Member** Coalition of Graduate Employees 2024–Current

- **Executive Board Member** Michigan State University Special Olympics 2023–2024
  Worked closely with other members of E-Board to maintain a stream of communication between E-Board and the members of the club.
- **Mentor** Michigan State University WaMPS Mentoring Program 2023–2024
  Mentee: Sachet Jain, Physics Major, Michigan State University
- **Volunteer** Michigan State University Special Olympics 2022–2024
  Facilitate individuals with intellectual disabilities in participating in inclusive sports and other activities.
- **Member** Society of Physics Students (SPS) Michigan State Chapter Member 2021–2024

Technical Experience

Programming

- **Proficient:** Jupyter, Mathematica, Python, R Studio, SQL

Software

- **Proficient:** Microsoft Office, LaTeX, MAXQDA

Awards

- Undergraduate Learning Assistant Award 2024