

# Jacob Rodgers

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## Education

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### Oregon State University

M.S. Physics

Corvallis, OR

September 2024–June 2026 (*expected*)

- Graduate Certificate in College and University Teaching

### Michigan State University

B.A. Physics

East Lansing, MI

April 2024

- Minor in Computational Mathematics, Science and Engineering

## Research Experience

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### Oregon State University – Dept. of Physics

Graduate Research Assistant – OSU Physics Education Research  
Advisor: Elizabeth Gire, Ph.D.

Corvallis, OR

March 2025–Present

- 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.
- Designed and conducted semi-structured interviews with faculty across multiple institutions to investigate approaches, challenges, and attitudes surrounding program assessment practices in higher education physics programs.

### Michigan State University – Dept. of Physics and Astronomy

Undergraduate Researcher – Physics Education Research Lab  
Advisor: Marcos “Danny” Caballero, Ph.D.

East Lansing, MI

September 2022–August 2024

- Employed a qualitative interview process to try to understand computation being integrated into high school physics classrooms.
- 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

Undergraduate Researcher – Physics Education Research Lab  
Advisors: Paul Irving, Ph.D. & Daryl McPadden, Ph.D.

East Lansing, MI

March 2022–September 2022

- Deployed a card sort interview format to analyze a student’s experience, in order to gain insight on how the class is perceived.
- Deduced 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.

## Teaching Experience

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### 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  
**Summer 2025** PH 211 General Physics with Calculus (ECampus), Graduate Teaching Assistant, 28 Students  
**Fall 2025** PH 201 General Physics (Recitation), Graduate Teaching Assistant, 150 students  
**Winter 2026** PH 202 General Physics (Recitation), Graduate Teaching Assistant, 170 students  
**Spring 2026** PH 211 General Physics with Calculus (Studio Lead), 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

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### 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.

## Presentations

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### 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.

### Posters

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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.

## Extracurricular Activities

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- **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 being graduate teaching assistants.*
- **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

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### Programming

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

### Software

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

## Awards

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- Undergraduate Learning Assistant Award 2024