

David Seiden

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EDUCATION

University of Georgia

Bachelor of Science in Physics

Bachelor of Science in Science Education

Athens, GA

May 2023

RESEARCH EXPERIENCE

Graduate Research Assistant, *University of Georgia*

Athens, GA

August 2024-Present

- Aid in various research projects related to physics and astronomy education
- Mentor undergraduates participating in physics and astronomy education research

Physics Education Post-Baccalaureate, *University of Georgia*

Athens, GA

August 2023- July 2024

- Participate in research surrounding course structure and pedagogical improvement for introductory physics classes at the University of Georgia
- Attend introductory mechanics classes to aid in answering questions, hosting office hours, and aid in instruction when necessary
- Mentor undergraduate students participating in physics and astronomy education research

Undergraduate Physics Education Research, *University of Georgia*

Athens, GA

Undergraduate Research Assistant

January 2023- May 2023

- Analyze student feedback on labs and lectures to develop curriculum suggestions for physics instructors
- Analyze quantitative and qualitative data relating to student performance and satisfaction after curriculum interventions

Joint Motivation Lab, *University of Georgia*

Athens, GA

Research Assistant

August 2021-May 2023

- Participate in motivation research in areas of educational psychology
- Identify motivational constructs in recorded videos of parents teaching their children
- Design and execute individual research project, including literature reviews and data analysis

Physics and Astronomy REU, *Michigan State University*

East Lansing, MI

Research Affiliate

May 2022-July 2022

- Participate in Physics Education Research projects
- Cleaned and analyzed quantitative self-efficacy data from a large N study
- Developed a new self-efficacy survey item

PRESENTATIONS

Poster Presentations:

1. **Seiden, D.**, Bork, S.J., Young, N., Weliweriya, N., Examining the Experiences of Physics and Astronomy Graduate Teaching Assistants using Photovoice. American Association of Physics Teachers and Physics Education Research Conference (AAPT/PERC) Summer Meeting, Boston, MA. July 2024
2. **Seiden, D.**, Sargent, J., Charania, Z., Weliweriya, N., Enhancing Student Learning through Video-Based Exam Corrections (Pencasts) in Introductory Physics Courses. South-Atlantic Coast Section of American Association of Physics Teachers (SACS-AAPT) Spring Conference, Columbia, SC. April 2024
3. **Seiden, D.**, Allen, R., Weliweriya, N., Laboratory Instruction Enhancement: Utilizing QR Codes and Digital Resources in Introductory STEM Courses. South-Atlantic Coast Section of American Association of Physics Teachers (SACS-AAPT) Spring Conference, Columbia, SC. April 2024
4. **Seiden, D.**, Sargent, J., Charania, Z., Weliweriya, N., Enhancing Student Learning through Video-Based Exam Corrections (Pencasts) in Introductory Physics Courses. Southeastern Section of the American Physical Society (SESAPS), Richmond, KY. November 2023

5. **Seiden, D.**, Allen, R., Weliweriya, N., Laboratory Instruction Enhancement: Utilizing QR Codes and Digital Resources in Introductory STEM Courses. Southeastern Section of the American Physical Society (SESAPS), Richmond, KY. November 2023
6. Allen, R., **Seiden, D.**, Weliweriya, N., Song, I., Enhancing Astronomy Education: Demonstrating Astronomical Phenomena using Immersive 3D Learning Experiences. Southeastern Section of the American Physical Society (SESAPS), Richmond, KY. November 2023
7. Pickett, M., **Seiden, D.**, Weliweriya, N., Abdeen, S., Cai, M. Integrating Well-Aligned Pre-Lecture videos in Student-Centered Large Enrollment Undergraduate Physics Courses. UGA Center for Undergraduate Research Opportunities (CURO), Athens, GA, April 2023
8. Song, Y., Barger, M. M., Rosenzweig, E. Q., **Seiden, D. J.**, Pottorff, G. A., Brown, M. L., Sampson, M. K., Jokay, C., Levin, A., Pomerantz, E. M. (2023). Observing parents' behaviors that foster or undermine children's motivation in math learning. American Educational Research Association, Chicago, IL, United States
9. **Seiden, D.**, Myers, C., Henderson, R., Sawtelle, V. Creating a Dictionary from an ESM Survey. Physics Education Research Conference (PERC) Summer Meeting, Grand Rapids, MI, July 2022
10. **Seiden, D.**, Myers, C., Henderson, R., Sawtelle, V. Creating a Dictionary from an ESM Survey. Mid-Michigan Symposium for Undergraduate Research Experiences (Mid-SURE), East Lansing, MI, July 2022

Oral Presentations:

1. **Seiden, D.**, Ogle, M., Kuchibhotla, A., Weliweriya, N., Wiegert, C., Evolution of Graduate Teaching Assistants' Educational Practices. American Association of Physics Teachers (AAPT), Boston, MA, July 2024
2. **Seiden, D.**, Weliweriya, N., Wiegert, C., Investigating Lab Teaching Quality of Graduate TAs as Novice Instructors. University System of Georgia Teaching & Learning Conference, Athens, GA, April 2024
3. **Seiden, D.**, Rosenzweig, E., Do People Who Change Their Career Plans Experience Higher Career Motivation? UGA Center for Undergraduate Research Opportunities (CURO), Athens, GA, April 2022

Workshops:

1. Weliweriya, N., Allen, R., **Seiden, D.**, Charania, Z., Effective Active Learning: Exploring Both Challenges and Solutions. South-Atlantic Coast Section of American Association of Physics Teachers (SACS-AAPT) Spring Conference, Columbia, SC. April 2024

Invited Lectures:

1. Observing Lectures to Develop Teaching Styles: Developing a Tool for Graduate Students, **University of Georgia** GRSC 7770, October 6, 2023
2. Grad Admissions: Timelines, Do's and Don't's, and Other Advice, **University of Georgia**, Society of Physics Students, April 9, 2024

TEACHING EXPERIENCE

University of Georgia Department of Physics and Astronomy

Teaching Assistant

Athens, GA

August 2023- Present

August 2022-December 2022

- Create and update physics labs in line with current pedagogical research
- Lecture on introductory physics content across various subjects
- Monitor lab students to ensure safety and answer student questions
- Grade approximately 80 lab reports a week

Belmont City College

Student Teacher

Perth, Australia

March 2023- May 2023

- Teach various levels of middle and high school physics, chemistry, biology, earth science, and ecology under supervision
- Create and implement lesson plans to ensure all students are supported in their learning

Clarke Central High School

Athens, GA

Student Teacher

January 2023- March 2023

- Teach various levels of high school physics under supervision of a veteran mentor teacher
- Create and implement lesson plans to ensure all students are supported in their learning
- Participate in weekly professional learning community (PLC) meetings to plan curriculum
- Participate in monthly equity roundtable discussions on encouraging success in the diverse student-body

University of Georgia Department of Physics and Astronomy

Athens, GA

Content Developer

December 2023-Present

- Design, create, and film prelecture videos for introductory calculus-based physics courses
- Create multiple choice questions integrated into each video using educational theories including Universal Design for Learning and Near and Far Transfer

Science Guyz

Athens, GA

Physics Tutor and Content Developer

January 2022-May 2022

- Tutor UGA students in various introductory physics courses
- Design and create review guides and videos explaining material for introductory physics courses

University of Georgia Department of Academic Enhancement

Athens, GA

CRLA Certified Master III Peer Tutor

October 2020 - October 2021

- Tutored UGA students in various introductory physics courses.
- Engaged with students in academic activities on both one-on-one and group bases
- Utilized online teaching platforms to give meaningful instruction in the midst of the COVID-19 pandemic

Congregation Gesher L'Torah Religious School

Johns Creek, GA

Teacher's Assistant

August 2013 - May 2019

- Aided in planning fun and educational activities for 12-15 children ages 8 to 9.
- Taught Hebrew characters, vocabulary, and basic sentence structure.
- Ensured the safety, health, and wellbeing of the students.

Imagine That! And Future Tech

Johns Creek, GA

Teacher's Assistant

May 2015 – July 2018 (Seasonal)

- Aided in the planning and execution of fun and educational activities for 10-20 children ages 5-13.
- Taught various scientific subjects such as chemistry, archaeology, forensics, coding, robotics, circuits, and computer-aided design.
- Ensured the safety, health, and wellbeing of the students.

AWARDS

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| • Anderson Pioletti Award
For Outstanding Early Graduate Student | May 2025 |
| • NSF GRFP
Honorable Mention | May 2025 |
| • David and Elaine Shealy Graduate Fellowship | August 2024 |
| • SACS-AAPT Spring Conference 2024
Best Poster Award | April 2024 |
| • NSF GRFP
Honorable Mention | May 2023 |

CERTIFICATIONS

T-4 Secondary Science Education Grades 6-12 Teacher

May 2023

CRLA Certified Master III Peer Tutor

June 2021

CAMPUS & COMMUNITY INVOLVEMENT

Treasurer, UGA Physics Graduate Student Association (PGSA)

March 2025 - Present

- Collating budget for planned events
- Managing applications for funds
- Collection of minutes from PGSA meetings

Director of Graduate Affairs, UGA Catalyst Journal

August 2024 - Present

- Oversee graduate student reviewers of undergraduate research journal
- Design and monitor reviews of research
- Assist in administrative tasks

Graduate Representative, UGA Physics and Astronomy

August 2024 - Present

Committee for Equity, Diversity, and Inclusion

- Attend biannual meetings to plan inclusive events
- Implement planned events, such as displays featuring diverse scientists in respective heritage history months, department picnics, and movie nights celebrating diversity

Physics Community Outreach for K-12 Schools, UGA Physics and Astronomy

October 2022 - Present

- Design age-appropriate demonstrations and activities related to scientific concepts being learned in class
- Travel to local K-12 schools to perform these activities, enhancing scientific learning
- Plan and lead astronomy observations with related activities

Undergraduate Representative, UGA Physics and Astronomy

August 2022 - July 2024

Committee for Equity, Diversity, and Inclusion

- Attend biannual meetings to plan inclusive events
- Design and setup displays highlighting physicists of historically underrepresented groups

President, UGA Physics Club

August 2019 - July 2022

- Attend biweekly meetings to discuss current topics in physics.
- Contribute meaningful input and ideas to discussions.

UNDERGRADUATES MENTORED

Madison Ogle

October 2023- May 2025

- Poster Presentation: Ogle, M., **Seiden, D.**, Kuchibhotla, A., Weliweriya, N., Wiegert, C., How Do Physics Teaching Assistants Adapt Their Pedagogy as They Repeat Instruction?. Center for Undergraduate Research Opportunities (CURO) Symposium, Athens, GA, April 2024.

Noah Burns

October 2023-May 2024

- Poster Presentation: Burns, M., **Seiden, D.**, Weliweriya, N., Abdeen, S., Integrating Augmented Reality (AR) into Inherently 3D Physics. Center for Undergraduate Research Opportunities (CURO) Symposium, Athens, GA, April 2024.