Evan D. Shapiro

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Research Interests

I am interested in high-performance parallel computing, uncertainty quantification and reduction, sensitivity analysis, all in the context of high-fidelity 5-D gyrokinetic plasma simulations.

Education

PhD Applied Mathematics

University of Colorado Denver — Fall 2019 - Spring 2022
Fields of Study: Numerical Analysis
GPA: 3.85/4.00
Adviser: Dr. Varis Carey

M.S. Integrated Science

University of Colorado Denver — Fall 2016 - Spring 2019
Fields of Study: Applied Mathematics and Plasma Physics
GPA: 3.85/4.00
Adviser: Dr. Varis Carey
Masters Thesis: Parameter Estimation

B.S. Physics with Minor in Applied Math

University of Colorado Denver — Fall 2012 - Spring 2015
GPA: 3.661
Adviser: Douglas Shepherd

Research: Studying the correlation between cell membrane ruffling and the histamine response in rat-basophil leukemia cells.

Work Experience

Physics Instructor

University of Colorado Denver — Fall 2015 - Current
Job Description: Teaching physics labs for the calculus and algebra based mechanics and electromagnetism courses at CU Denver.

Mathematics Instructor

Spring International Language Center — January 2016 - May 2018

Spring International Language Center is an English as a Second Language school, which offers a GRE prep course with sections in verbal, writing, and mathematics; I taught the mathematics portion of the course.

Youth Development Specialist

Boys and Girls Club of Metro Denver — Fall 2016 - Current
Boettcher Boys and Girls Club
STEM Program Development and Math/Science Tutor

I work with at-risk and underserved youth from the ages of 6-18. I work with the high-school students on high-school to college transition mentoring, as well as math and science tutoring. With the 6-13 year olds I help run art and science programs, and I have developed science educational programs.

Physics Tutor

University of Colorado Denver — Fall 2015 - Spring 2017
Learning Resource Center
Physics and Mathematics Tutor

Classes Tutored: Algebra and Calculus Based Physics 1 & 2, Modern Physics, Vibrations and Waves, Trigonometry, Calculus 1-3, Ordinary Differential Equations, Linear Algebra

Analyst Internship

National Renewable Energy Laboratory — June 2014 - June 2015
Strategic Energy Analysis Center

Analyzed impact of stakeholder adoption of renewable energy technology on behalf of stakeholders. Studied and quantified the emission profiles of a variety of hybrid and electric vehicles within different regions of the US. Basic quality control and proofreading of materials to ne published to NREL websites.

Education Research Internship

Noyce Research Internship Program — Summer 2014
Adviser: Randall Tagg

With the assistance of Dr. Tagg I developed experimental methods for high-school students to study lichens, with the intent of using lichens as an early warning signal for environmental degradation.

Physics Lab Assistant Coordinator

Community College of Denver — August 2012 - January 2013

I was responsible for ordering and maintaining laboratory inventory. I worked with instructors to change, develop, and write new undergraduate physics labs. I assisted instructors in teaching labs, and taught labs independently.

Publications

Joyce McLaren, John Miller, Eric OShaughnessy, Eric Wood, and **Evan Shapiro**, "Emissions Associated with Electric Vehicle Charging: Impact of Electricity Generation Mix, Charging Infrastructure Availability, and Vehicle Type," National Renewable Energy Laboratory, April 2016

Awards

Society of Physics Students Honor Society Inductee — 2017
Sigma Pi Sigma

University of Colorado Denver — Spring 2015
Moedling Competition: Mathematical Contest in Modeling 2015
Problem: "Eradicating Ebola"
Honorable Mention

University of Colorado Denver — Spring 2014
Undergraduate Research Opportunity Program Grant
"Investigating the Allergic Response Molecular Pathways Using Physics, Biology, and Analytical Chemistry"

Adviser: Douglas Shepherd

Community College Honor Society Inductee 2012
Phi Theta Kappa
Reisher Foundation Undergraduate Scholarship Recipient Fall 2012 - Spring 2015

Conference Presentations

Research and Creative Activities Symposium 2015

Poster
University of Colorado Denver
"Investigating the Allergic Response Molecular Pathways Using Physics, Biology, and Analytical Chemistry"

AAPT SPS Meeting

Contributed Talk
Colorado and Wyoming American Association of Physics Teachers & Society of Physics Students Zone 14 Joint Meeting 2015
"How optics can be used to understand the interplay between gene expression and cell structure"

Leadership

University of Colorado Denver 2013-2014
Society of Physics Students Vice President

University of Colorado Denver 2014-2015
Society of Physics Students President

Youth Development Specialist
Boys and Girls Club of Metro Denver Fall 2016 - Current
Boettcher Boys and Girls Club
STEM Program Development and Math/Science Tutor

I work with at-risk and underserved youth from the ages of 6-18, doing high-school to college transition mentoring, carrying out science activities, and tutoring math and physics. Working at the Boys and Girls Club may be the best part of my week.

Technical Skills

Embedded Systems: Arduino embedded system development, circuit analysis and design.
Computational Languages Currently Used: MatLab, Python, HTML, LaTeX, Fortran. Computational Languages Previously Used: R, C, MEEP.