

William V. Jardee

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EDUCATION	Montana State University , Bozeman, MT <i>B.S., Summa Cum Laude</i> (Phi Kappa Phi Honors Society), Professional Physics <i>Minors in</i> , Computer Science and Mathematics, May 2022 GPA: 3.94/4.0	
PROJECTS	Relativistic Runaway Electrons and Lightning Discharge; A Qualitative Overview: Building blocks of the RREA Theory, alongside motivations, computational and experimental evidence. Survey of step leaders and the related TGF emissions. RREA Propagation Theory; A Theoretical and Computational Overview: A delve into the theoretical derivation of RREA theory and the implementation of complete Monte Carlo simulations of particle propagation in stormclouds. <i>proposed project</i> Introduction to Computational Physics A collection of Python, \LaTeX , and essential tools, like Jupyter Notebook, overviews along with more detailed delves into important topics like ODE/PDE solvers, Monte Carlo simulations, and large data set analysis. Including asides about AI, ML, TDA, computational theory, and modern topics like dynamical systems. <i>ongoing project</i>	
TECHNICAL SKILLS	Languages: Python, GitHub, Java, C/C++, \LaTeX , HTML, CSS, Matlab, Mathematica, Excel Mathematics: Linear Algebra, Dynamical/Chaotic Systems, Computation Theory Physics: Particle Physics, Observational Astronomy, General Relativity	
TEACHING EXPERIENCE	Hillman's Scholars Tutor July 2021 - Present Educating underprivileged college students in introductory math, physics, computer science, and humanities courses.	Allen Yarnell Student Success Center Montana State University, Bozeman
	Math Stats Center Tutor Aug 2021 - Present Guide students to discover their own answers and understanding in classes ranging from introductory algebra to differential equations.	Mathematics Department Montana State University, Bozeman
	Proctor/Grader (PHSX 207) Jan 2021 - May 2021 Grading weekly homework and exams of algebra based introductory physics course.	Physics Department Montana State University, Bozeman
	Student Lab Assistant (PHSX 205) Aug 2020 - Nov 2020 Guided students of the introductory physics course through kinematic labs during a weekly lab.	Physic Department Montana State University, Bozeman
	Smarty Cats Tutor Aug 2019 - May 2020 Made and personalized appointments with students to cover essential STEM topics.	Allen Yarnell Student Success Center Montana State University, Bozeman
	Volunteer Stem Tutor Oct 2019 - March 2020	The Rock Youth Center Montana State University, Bozeman

Held open tutoring hours for high school students who struggles in STEM subjects

RESEARCH EXPERIENCE

Undergraduate Researcher

Aug 2020 - Dec 2020

Analyzed the performance of a soft x-ray spectrometer to be attached to the IMPRESS CUBE-SAT.

Dr. John Sample's Lab

Montana State University, Bozeman

Undergraduate Researcher

Jan 2020 - Apr 2020

Studied the theory behind, and attempted to use, an ellipsometer to measure the thickness of thin wafers.

Dr. Rufus Cone's Lab

Montana State University, Bozeman

MISC EXPERIENCE

Club Treasurer

Feb 2020 - Jan 2022

Handled club finance and lead many efforts in stirring interest in science communication and computational physics.

Society of Physics Students at Montana

State University

Montana State University, Bozeman

AWARDS/ GRANTS

Physics Departmental Scholarship

- Norman Mac Rugheimer Scholarship

Aug 2021

- Asbridge Physics Scholarship

Aug 2020

Montana University Systems Scholarship

May 2018

POSTERS/ PRE- SENTATIONS

RREA Propagation Theory

SPS Undergraduate Colloquium

Oct 2021

OUTREACH

Grossology

Museum of the Rockies

Oct 2021

Liquid Nitrogen Ice Cream

Society of Physics Students

Oct 2021

Careers in Industry Panel; Moderator

Society of Physics Students

Oct 2020, Mar 2021

INTERESTS

Science communication, computational physics, particle physics, chaotic systems, macroscopic weather systems, RREA propagation theory