

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	Allen Yarnell Student Success Center
	July 2021 - Present	Montana State University, Bozeman
	Educating underprivileged college students in introductory math, physics, computer science, and humanities courses.	
	Math Stats Center Tutor	Mathematics Department
	Aug 2021 - Present	Montana State University, Bozeman
	Guide students to discover their own answers and understanding in classes ranging from introductory algebra to differential equations.	
	Proctor/Grader (PHSX 207)	Physics Department
	Jan 2021 - May 2021	Montana State University, Bozeman
	Grading weekly homework and exams of algebra based introductory physics course.	
	Student Lab Assistant (PHSX 205)	Physic Department
	Aug 2020 - Nov 2020	Montana State University, Bozeman
	Guided students of the introductory physics course through kinematic labs during a weekly lab.	
	Smarty Cats Tutor	Allen Yarnell Student Success Center
	Aug 2019 - May 2020	Montana State University, Bozeman
	Made and personalized appointments with students to cover essential STEM topics.	
	Volunteer Stem Tutor	The Rock Youth Center
	Oct 2019 - March 2020	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