

# James Clifford

---

jclifford@wesleyan.edu  
<https://jclifford9.github.io/Website/>

Education	M.A. Physics	expected May 2024
	B.A. Physics, Mathematics	May 2023
	Minor in Materials Science and Engineering	May 2023
	Wesleyan University, Middletown, CT	
	Unweighted GPA: 3.98/4.00	
Research Experience	Molecular Collisions Laboratory	February 2022 - Present
	Wesleyan University	
	Mentored by Dr. Brian Stewart	
	<ul style="list-style-type: none"><li>• Undertook a critical study of our group's experimental and data analysis procedures that involved thermally stabilizing our laser and proposing new methods to reduce noise in our data</li><li>• Collected data via classical trajectory simulations on both model and <i>ab initio</i> potentials to design a benchmark experiment in the study of vibrational energy transfer</li></ul>	
	Nuclear Structure and Nuclear Astrophysics Group	May 2022 - August 2022
	Oak Ridge National Laboratory	
	Mentored by Dr. Jason Nattress and Dr. Michael Febraro	
	<ul style="list-style-type: none"><li>• Drafted and conducted a literature search for a paper regarding the optical transparency of graphene in the vacuum ultraviolet (VUV) regime (paper unpublished)</li><li>• Designed a workflow for the robotic assembly of 3D-printed scintillation detectors</li><li>• Calibrated and prepared stilbene radiation detectors for use in experiments at the Institute for Structure and Nuclear Astrophysics (ISNAP) at the University of Notre Dame (technical report awaiting publication)</li></ul>	
	Wave Transport in Complex Systems Laboratory	February 2021 - July 2021
	Wesleyan University	
Relevant Coursework	Mentored by Dr. Tsampikos Kottos and Dr. Rodion Kononchuk	
	<ul style="list-style-type: none"><li>• Computationally studied Wigner's cusp anomalies in multimode systems for the development of hyper-sensitive, nonlinear sensing technologies</li><li>• Formally presented this work at the <i>Wesleyan University Undergraduate Summer Research Poster Session</i> in July 2021</li></ul>	
	Physics: Waves and Oscillations, Classical Mechanics, Electricity & Magnetism, Electronics Lab, Statistical and Thermal Physics, Quantum Mechanics (I and II), Nonlinear Dynamics and Chaos, Analytical Mechanics	
	Mathematics: Multivariable Calculus, Differential Equations, Linear Algebra, Abstract Algebra, Probability, Mathematical Statistics, Real Analysis	
	Materials Science and Engineering: Mechanical Design and Engineering, Electrical Design and Engineering, Mechanics and Materials	

<b>Teaching Experience</b>	General Physics I Course Assistant	September 2020 - December 2020
	General Physics II Tutor	January 2021 - May 2021
	General Physics II Laboratory Teaching Assistant	January 2021 - May 2021
	Classical Mechanics Tutor	January 2023 - May 2023
<b>Programming and Software</b>	<ul style="list-style-type: none"> <li>• Programming languages: Arduino, Bash, C, Python</li> <li>• Software: Adobe After Effects, Adobe Illustrator, Adobe Photoshop, Gnuplot, LaTeX, Mathematica, SolidWorks</li> </ul>	
<b>Awards and Honors</b>	Wesleyan University Dean's List (eight semesters)	2019 - 2023
	Phi Beta Kappa National Honor Society	2023
	Wesleyan University Van Dyke Prize (Physics)	2023
<b>Extracurricular Activities</b>	<i>Baseball</i>	2019 - Present
	<ul style="list-style-type: none"> <li>• Starting catcher for the Wesleyan University varsity baseball team</li> <li>• Team captain</li> </ul>	
		August 2022 - Present
	<i>Student Athletic Advisory Committee (SAAC)</i>	August 2022 - Present
	<ul style="list-style-type: none"> <li>• SAAC is formed from two leaders of each varsity athletic team on campus and consults with Wesleyan's athletic department and administration regarding NCAA legislation</li> <li>• SAAC also collaborates with other resources on campus, such as the center for counseling and psychological services (CAPS) and the office for equity and inclusion, to help student-athletes along their college experience</li> <li>• Member of the committee on mental health</li> </ul>	
	<i>Student Athlete Support Network (SASN)</i>	September 2019 - Present
	<ul style="list-style-type: none"> <li>• SASN forms peer mental health advocates in collaboration with CAPS</li> <li>• SASN trains student-athletes to help others in challenging situations such as those suffering from anxiety or depression, an eating disorder, suicidal thoughts, and more</li> </ul>	
	<i>Miracle League Baseball</i>	August 2019 - March 2020
	<ul style="list-style-type: none"> <li>• The Miracle League brings the joys of athletic competition and being part of a team to children with disabilities and special needs</li> </ul>	