Isaac G. Smith

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Education

2024 - present **Weizmann Institute of Science (WIS)**
2020 - 2024 **Michigan State University (MSU)** (GPA: 4.0/4.0)
B.S. in Physics, College of Natural Science, Honors College
B.S. in Mathematics, Advanced, College of Natural Science, Honors College
Minor in Music (vocalist), College of Music

Research Experience

Research Assistant, Facility for Rare Isotope Beams, MSU Nov 2022 - Jul 2024

- Developed and implemented a finite-temperature formalism for the IMSRG many-body solver.
- Analyzed data from the finite-temperature IMSRG using an exactly-solvable schematic model.
- Studied the effect of temperature on the stability of calcium isotopes.

Research Assistant, TARDIS Collaboration, MSU Sep 2020 - Aug 2023

- Wrote an extensive physics walkthrough for the TARDIS radiative transfer code.
- Participated in MSU's Engineering Summer Undergraduate Research Experience program.
- Developed the STARDIS stellar radiative transfer code, a companion code to TARDIS.

Teaching and Mentoring

Learning Assistant for Calculus II, MSU Jan 2024 - Apr 2024

- Description

Mentor, TARDIS Collaboration, MSU May 2021 - Aug 2023

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Tutor Sep 2018 - May 2022

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Publications

Blondin, Stéphane et al. (Dec. 2022). "StaNdaRT: a repository of standardised test models and outputs for supernova radiative transfer". In: *Astronomy amp; Astrophysics* 668, A163. ISSN: 1432-0746. DOI: 10.1051/0004-6361/202244134. URL: http://dx.doi.org/10.1051/0004-6361/202244134.

Presentations

Blondin, Stéphane et al. (Dec. 2022). "StaNdaRT: a repository of standardised test models and outputs for supernova radiative transfer". In: *Astronomy amp; Astrophysics* 668, A163. ISSN: 1432-0746. DOI: 10.1051/0004-6361/202244134. URL: http://dx.doi.org/10.1051/0004-6361/202244134.

Major Projects and Unpublished Work

Mathematics Honors Thesis Link to Demo

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STARDIS Radiative Transfer Code Link to Demo

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TARDIS Documentation Link to Demo

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Honors and Awards

2024	Carl L. Foiles Award, MSU	(top graduating physics student)
2024	Board of Trustees Award, MSU	(4.0 GPA through undergraduate)
2024	MSU Integration Bee Third Place	
2023	Jeffrey R. Cole Honors College Research Fund Recipient, MSU	
2021, 2023	Lawrence W. Hantel Fellowship, MSU	(physics research award)
2023	Nominee, Rhodes Scholarship, MSU	
2023	Nominee, Marshall Scholarship, MSU	
2022	L.C. Plant Mathematics Award, MSU	
2021, 2022	NumFOCUS Small Development Grant Recipient	
2020	Alumni Distinguished Scholar, MSU	(MSU's top merit scholarship)
2020	National Merit Scholar	
2020-2024	Dean's List, MSU	(all semesters)

Skills

Proficient in Python, C, C++, Git, and Linux
Intermediate level in Hebrew