

PIERCE MASTERS JACKSON

EDUCATION AUBURN UNIVERSITY – AUBURN, ALABAMA

Master of Science in Aerospace Engineering with Thesis (Summa Cum Laude); May 2022

Bachelor of Science in Physics (Magna Cum Laude); May 2020

RESEARCH EXPERIENCE GRADUATE RESEARCH – AUBURN UNIVERSITY

August 2020 – May 2022:

- **Publication:** [Jackson, P. M.](#), Nakano, R., Kim, Y., & Hirabayashi, M. (2022) “Active Main-belt Asteroid (6478) Gault: Constraint on Its Cohesive Strength and the Fate of Ejected Particles in the Solar System.” *The Planetary Science Journal*, 3, 16. <https://doi.org/10.3847/PSJ/ac4031>
- **Poster:** [Jackson, P. M.](#) & Hirabayashi, M. (2022) “Mercury Impact Ejecta’s Contribution to its Own Meteoroid Population.” *Lunar and Planetary Science Conference LIII*, 2600. March 10, 2022
- **Presentation:** [Jackson, P. M.](#) & Hirabayashi, M. (2022) “Mercury Impact Ejecta’s Contribution to its Own Meteoroid Population.” *Thesis defense*. Auburn University. April 11, 2022

UNDERGRADUATE RESEARCH – AUBURN UNIVERSITY

January 2019 – current

- **Publication:** [Jackson, P.M.](#), Guzman, F., Nemer, A., Fogle, M., Loch, S.D. (In Preparation) “Impact of Hybrid Dielectronic Recombination Data on Low Temperature Astrophysical Environments”
- **Poster:** [Jackson, P.M.](#), Fogle, M., Loch, S.D., Guzman, F., (2019) “The Impact of Experimentally Measured Dielectronic Recombination Rate Coefficients on Photoionized Plasmas”
 - 2019 Stored Particle Atomic Physics Research Collaboration (SPARC); Germany
 - 2019 Southeastern Section of the American Physical Society (SESAPS); North Carolina
- **Poster:** Nemer, A., Sterling, N., Raymond, J., Dupree, A., Garcias-Rojas, A., Pindzola, J., [Jackson P.M.](#), Rizzuto, S., Wang, Q., Balance, C.P., Loch, S.D. “The first evidence of enhanced recombination in planetary nebulae and the implications on photo-ionized plasmas and spectroscopy.” *American Astronomical Society, AAS Meeting #233*. January, 2019.

AUBURN UNIVERSITY SMALL SATELLITE PROGRAM (AUSSP)

June 2019 – December 2020

- Software developer for AUSSP’s TRYAD satellite project. TRYAD is a pair of 6u small satellites that aim to detect terrestrial gamma ray bursts in low Earth orbit. I developed software drivers in Python for many of the satellite’s sensors and devices including: magnetometers, rate gyros, analog-to-digital converters, and multiplexers, such that they could communicate over I2C with the main computer (BeagleBone Black)
- Software/Command and Data Handling System Team Lead for TRYAD. I lead a team of ~10 students in multiple different CDHS (Command and Data Handling System) projects for TRYAD and collaborated/interfaced with many other subsystems.

SUMMER REU – AUBURN UNIVERSITY

June 2018 - August 2018

- Under the supervision of Dr. Stuart Loch, I modeled radio recombination lines of high-n (Rydberg) states and investigated how Rydberg Enhanced Recombination would affect a produced spectrum using Python. Later in summer, I began to investigate more accurate ways of calculating Einstein-A coefficients using Python and Fortran codes that I assisted in developing. This allowed for more accurate modeling of affected spectra. At the end of the summer program, I gave an oral presentation of my findings.

NASA INTERNSHIP/VOLUNTEER – MARSHALL SPACE FLIGHT CENTER

June-July 2016

- I was mentored by heliophysicist Ms. Mitzi Adams and analyzed data from the Solar Dynamics Observatory to determine potential causes of jets within coronal holes on the disk of the Sun. I presented my findings at the end of my 4-week stay.

TEACHING EXPERIENCE TEACHING ASSISTANT

Orbital Mechanics (AERO 3310)

- Spring 2021 (1 section taught)

Aerospace Systems (AERO 3220)

- Fall 2020 (2)

Engineering Physics I Lab (PHYS 1600)

- Spring 2020 (1)
 - Fall 2019 (2)
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TECHNICAL SKILLS PROGRAMMING & CODING**SKILLS**

- **Python:** 5+ years of experience; first coding language - introduced in summer 2016. Most comfortable and experienced with python
 - **Matlab:** 2+ years of experience; first used when I began my graduate program in Fall 2020.
 - **C++:** 2+ years of experience; also first introduced in my graduate program. Was the primary language used to create and run simulations for research.
 - **LaTeX:** 4+ years of experience; Publication, thesis, and many other smaller projects written fully in LaTeX.
 - **Fortran:** 1 year of experience; used in my early undergraduate research/2018 REU; used in Computational Physics course
 - **Mathematica, Linux, IDL**
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HONORS Society of Collegiate Leadership and Achievement

- Fall 2019

Sigma Alpha Pi – National Society for Leadership and Success

- Fall 2019

News Article Written about me

- *COSAM Senior to Inspire Young Students to Study Physics*, written by Carla Nelson, Auburn University; Fall 2019

Sigma Pi Sigma – National Physics Honor Society

- Spring 2019

Outstanding Junior in Physics – Auburn University

- Spring 2019

Dean's List – Auburn University

- Fall 2018 & Spring 2019

Phi Eta Sigma Honor Society – National Collegiate Freshman Honor Society

- 2017

Eagle Scout

- 2014
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ACTIVITIES AND LEADERSHIP President of Auburn's Society of Physics Students

- Elected President by Peers: 2019 – 2020

Vice President of Auburn's Astronomical Society

- Helped found the Auburn University Astronomical Society in Spring 2020 and assumed role of Vice President: Spring 2020

Vice President of Auburn's Society of Physics Students

- Elected VP by Peers: 2018 – 2019

Social Chair of Auburn's Society of Physics Students

- Elected Social Chair by Peers: 2017 – 2018

Auburn Rugby Club – Player

- 2016-2017
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SERVICE Volunteer Medical Mission to San Andreas, Guatemala

- 2013, 2014, 2015, 2017

President's Volunteer Service Award (Bronze)

- 2015
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EMPLOYMENT Thrive Here at Auburn Coffee Shop Barista

- Fall 2022 - current

Lifetime Fitness Team Member, Vestavia Hills

June – August 2017
