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7075 Lake Run Drive
Birmingham, AL 35242

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)

TECHNICAL SKILLS

PROGRAMMING & CODING

- **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**

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

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

SERVICE

Volunteer Medical Mission to San Andreas, Guatemala
- 2013, 2014, 2015, 2017

President's Volunteer Service Award (Bronze)
- 2015

EMPLOYMENT

Thrive Here at Auburn Coffee Roasting and Production Supervisor
- June 2023 – Current

Thrive Here at Auburn Coffee Shop Barista
- July 2022 – June 2023

Telescope Technician for Auburn Physics Department

- June 2020 – August 2020

Lifetime Fitness Team Member, Vestavia Hills

- June – August 2017