

Aleksandra Abova-Volkova

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- EDUCATION** **West Virginia University**, Morgantown, WV GPA: 3.67
Doctor of Philosophy Physics **Aug 2020 - Present**
- Florida Institute of Technology**, Melbourne, FL **May, 2020**
Bachelor of Science Astronomy and Astrophysics
Minor, Computational Mathematics
- SKILLS** **Programming Languages:** Python, IDL, C++
Other & Basic Knowledge: LaTeX, HTML+CSS, R, MATLAB, SQL
- RESEARCH EXPERIENCE** **Graduate Research Assistant** **Jan 2021 - Present**
Advised by Dr. Paul Cassak. West Virginia University
- Space Plasma Physics researcher focusing on asymmetric magnetic reconnection and its energetics and heating
 - Works with simulations on NERSC supercomputers to study near-Earth plasma interactions
 - First Investigator on a project funded by NASA FINESST: “The effect of asymmetries on heating and its mechanisms in magnetic reconnection”
- Undergraduate Research Volunteer** **Jun 2019 - May 2020**
Supervised by Dr. Jean Perez. Florida Institute of Technology
- Studied Alfvén waves in near-Earth plasma using magnetohydrodynamics.
 - Adapted code to represent and visualize mathematical solutions
 - Senior Design Project: Investigating Alfvén wave propagation and dissipation across a density discontinuity (Spring 2020)
- Undergraduate Research Volunteer** **Jan 2017 - Aug 2018**
Supervised by Dr. Saida Caballero-Nieves. Florida Institute of Technology
- Analyzed binary and potential binary B-class stars.
 - Created target lists for observing on one of the three SARA consortium telescopes.
 - Learned Python to assist with programming needs.
- EMPLOYMENT** **Graduate Research Assistant** **Jan 2021 - Present**
West Virginia University
- Graduate Teaching Assistant** **Aug 2020 - Jan 2021**
West Virginia University
- Supervising laboratory sessions for introductory physics laboratories
 - Explaining fundamentals of physics via laboratory demonstrations
 - Employing alternative methods to laboratory education while navigating the COVID-19 pandemic
- International Student and Scholarship Services** **May 2018 - May 2020**
Assistant Program Coordinator. Florida Institute of Technology
- Planning campus events, such as the annual International Festival
 - Assisting students with issues pertaining to immigration regulations
- Evans Library** **Aug 2017 - May 2018**
iDesk Assistant. Florida Institute of Technology

PROJECTS

Florida Tech Rocketry: Base11 Space Challenge Aug 2018 - May 2020

Safety Officer for Ground Support and Testing/Technical Safety Manager

- Wrote key safety procedures for rocket launch and test fires.
- Facilitated safety training within the team
- Overlooked test stand/rocket design for safety hazards

AEXA Aerospace's International Air and Space Program Nov 2016

- Planned a mission to Europa, one of Jupiter's moons, "from scratch"
- Asserted non-scientific aspects of the mission
- Presented highlights of the planned mission to a jury of NASA JSC engineers and scientists.

LEADERSHIP

Physics and Astronomy Graduate Student Organization 2022-2023

Treasurer

- Assisted in facilitating events for current and prospective students in the Physics and Astronomy department at WVU.
- Maintained organizational budget and facilitated spending for events and meetings.
- Participated in peer mentoring, helping two junior graduate students navigate their new learning environment and department.
- Participated in producing a bid and organizing the Conference for Undergraduate Women in Physics 2024.
- Participated in multiple department outreach efforts promoting STEM education and the department.

Florida Tech Homecoming 2019

Student Co-Chair

- Worked with the Office of Student Affairs and The Alumni Affairs Office to organize the annual Homecoming Week.
- Responsibilities included working with student organizations, event planning, and committee management.
- Homecoming 2019 named Outstanding Program or Event by Office of Student Life.

Society of Physics Students Florida Tech Aug 2018 - May 2019

President

- Focused on outreach both on campus and in the community, which included organizing telescope training and talks at Melbourne High School.
- Organized the 2019 Zone Meeting for our chapter and chapters from multiple states
- Started a mentorship program that connected upperclassmen and underclassmen.

Florida Tech Orientation 2017-2019

Diplomat

- Organized and facilitated new student Orientation.
- Duties included helping students, facilitating discussions and ice-breakers, and introducing students to campus and college life.

INVOLVEMENT AND SERVICE

- Treasurer of the Omega Phi Alpha National Service sorority (2023-2024)
- Provided occasional assistance in substitute teaching of lectures (Introductory Mechanics) (2021)
- Talk: Careers and Research in Physics in Astronomy at Melbourne High School
- Treasurer, Students for Exploration and Development of Space (2016-2017), Florida Tech Chapter
- Treasurer, Student Astronomical Society (2016-2017)
- Member, American Physics Society

**AWARDS AND
CONFERENCES**

- Florida Tech Dean's List Fall 2017, Spring 2019, Spring 2020
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- Panther Fund Merit Scholarship Recipient, 2016-2020
- Attendee, Conference for Undergraduate Women in Physics 2017, 2019
- Attendee, AstroHack 2017
- Attendee, SpaceVision 2018
- Campus Service Awards: Outstanding Senior 2019-2020

STATEMENT

Aleksandra is a Ph.D.-track graduate student with diverse experience in various projects within Astronomy, Astrophysics, and Space Physics. She can employ mathematical and computational methods necessary for research in relevant fields. Her research interests lie in theoretical space plasma physics and focus on magnetic reconnection. She is looking for ways to engage in university and community scientific outreach projects during her studies.