CONNOR A. FELTMAN
DEPARTMENT OF PHYSICS & ASTRONOMY
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PROFESSIONAL APPOINTMENTS

Department of Physics and Astronomy, University of Iowa Fall 2024-present
Postdoctoral Researcher - Co-Investigator and Sounding Rocket Project Manager
Mentor: Professor Allison Jaynes
Collaborators: S. Fuselier (SwRI), J. Bonnell (UC Berkeley), J. Halekas (UIOWA), S. Bounds (UIOWA)

- Funded through NASA's Low-cost Access to Space program and TRACERS satellite funds.
- Lead the design, fabrication, calibration and testing of three instruments at the University of Iowa: (1) top-hat electron electrostatic analyzer, (2) Langmuir probe and (3) search-coil magnetometer.
- Held regular meetings with NASA and oversaw mission science objectives, instrument documentation, team logistics, mission scheduling and launch activities

Department of Physics and Astronomy, University of Iowa 2018-2024
Graduate Research Assistant
Advisor(s): Professor Craig A. Kletzing, Professor Gregory Howes

- Data processing, calibration and analysis of twelve instruments aboard the ACES-II Sounding Rocket campaign: Fixed/Swept Langmuir Probes, Ion/Electron top-hat electrostatic analyzers, Double Probe Electric Fields, Fluxgate Magnetometers. Particular emphasis for Langmuir Probes and Electrostatic Analyzers.
- An analytical and numerical investigation of dispersive Alfvén wave-particle resonance with auroral and plasma sheet electrons at low altitude using *in situ* data.
- Analysis of large-scale field-aligned currents with their associated Ionospheric Hall and Pedersen currents using *in situ* rocket data.

EDUCATION

University of Iowa **Iowa City, Iowa**
Ph.D., Physics December 2024

University of Iowa **Iowa City, Iowa**
M.S., Physics December 2022

University of Wisconsin - Eau Claire **Eau Claire, Wisconsin**
B.A., Physics and Mathematics May 2018

TEACHING & MENTORING

Department of Physics and Astronomy, University of Iowa 2024-Current
Co-Investigator - The OCHRE Sounding Rocket

- Lead a team of two undergraduate (Jason Homann, Arissa Khan), four graduate students (Aidan Moore, Brendan Powers, Olivia Jones, Tamar Ervin) and one additional postdoctoral researcher (Kristina Llera), with daily in-person mentoring to the two undergraduate/graduate students.

Department of Physics and Astronomy, University of Iowa 2022, 2023, 2024, 2025
Co-Instructor - Edge of Space summer academy

- A two-week immersive experimental space physics summer program for undergraduates across the US. Students design, plan and build real instruments that collect data up to 30 km altitude, then analyze and present their results in a professional setting. I supported the Geiger-Mueller tube experiment's electronics, 3D printed designs, thermal and high-voltage testing while mentoring groups of five students each year.

Department of Physics and Astronomy, University of Iowa
Graduate Teaching Assistant 2018- 2022

- Phys 1511 Discussion & Laboratory Instructor - Introductory mechanics, fluids, thermodynamics and waves.
- Phys 1512 Discussion Instructor - Introductory electric & magnetic fields, optics, and modern physics.
- Phys 2704 Laboratory Instructor - Introductory quantum mechanics, special relativity, atomic and solid state physics.
- Department walk-in tutor

Department of Physics & Astronomy, University of Wisconsin - Eau Claire 2016-2018
Academic Skills Center - physics and mathematics tutor

- General science tutor for introductory mechanics, electric & magnetic fields, optics, and modern physics, quantum mechanics, special relativity and introductory calculus.

HONORS

- Sigma Pi Sigma, National Physics Honor Society, 2018.
- Physics Beyond the Classroom Scholarship, 2017.

PRESENTATIONS

- Invited Speaker - Chippewa Valley Astronomical Society Summer 2025
  The Aurora throughout the Earth, Solar Sytem and Beyond
- AGU Poster Fall 2022
  Direct Measurement of the Current Connection Region Plasma
- AGU Poster Fall 2023
  Observation of Dispersed Electron Acceleration near Discrete Auroral Arcs by ACES-II Sounding Rockets
- Seminar Talk Spring 2023
  Preliminary results from the ACES-II Sounding Rocket Campaign: A study of Discrete Auroral Arcs

- Seminar Talk Fall 2024
  Instrumentation and Tools for Space Physics: Operational Theory and Examples

REFERENCES

Professor Gregory Howes E-mail: gregory-howes@uiowa.edu
Thesis advisor Phone: +1 (319) 335-1221

Scott. R. Bounds, Ph.D. E-mail: scott-bounds@uiowa.edu
Colleague and mentor Phone: +1 (319) 335-0694

Professor Allison N. Jaynes E-mail: allison-n-jaynes@uiowa.edu
Teaching reference Phone: +1 (319) 335-3799

PEER-REVIEWED PUBLICATIONS

5. **Feltman, C.,** Howes, G. G., Bounds, S. R., Miles, D. M., Kletzing, C. A., Greene, K., Broadfoot, R., Bonnell, J. & Roglans, R. Inferential Evidence for Suprathermal Electron Burst Intensification Due To Inverted-V Precipitation via Inertial Alfvén Waves. *Journal of Geophysical Research: Space Physics* **130.** e2025JA033869 2025JA033869, e2025JA033869 (2025).

4. Greene, K., Bounds, S. R., Broadfoot, R. M., **Feltman, C.,** Hisel, S. J., Kraus, R. M., Lasko, A., Washington, A. & Miles, D. M. First in situ measurements of the prototype Tesseract fluxgate magnetometer on the ACES-II-Low sounding rocket. en. *Geoscientific Instrumentation, Methods and Data Systems* **13,** 249–262. ISSN: 2193-0864 (2024).

3. Spicher, A., LaBelle, J., Bonnell, J. W., Roglans, R., Moser, C., Fuselier, S. A., Bounds, S., Clausen, L. B. N., Di Mare, F., **Feltman, C.,** Jin, Y., Kletzing, C., Miloch, W. J., Moen, J. I., Oksavik, K., Sawyer, R., Takahashi, T. & Yeoman, T. K. Interferometric Study of Ionospheric Plasma Irregularities in Regions of Phase Scintillations and HF Backscatter. *Geophysical Research Letters* **49.** e2021GL097013 2021GL097013, e2021GL097013 (2022).

2. Moser, C., LaBelle, J., Roglans, R., Bonnell, J. W., Cairns, I. H., **Feltman, C.,** Kletzing, C. A., Bounds, S., Sawyer, R. P. & Fuselier, S. A. Modulated Upper-Hybrid Waves Coincident With Lower-Hybrid Waves in the Cusp. *Journal of Geophysical Research: Space Physics* **126.** e2021JA029590 2021JA029590, e2021JA029590 (2021).

1. Olifer, L., **Feltman, C.,** Ghaffari, R., Henderson, S., Huyghebaert, D., Burchill, J., Jaynes, A. N., Knudsen, D., McWilliams, K., Moen, J. I., Spicher, A. & Wu, J. Swarm Observations of Dawn/Dusk Asymmetries Between Pedersen Conductance in Upward and Downward Field[U+2010]Aligned Current Regions. en. *Earth and Space Science* **8.** ISSN: 2333-5084, 2333-5084 (2021).