Brian C. Ferrari

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https://sites.google.com/view/bcferrari/home
https://github.com/Cavenfish

Languages: English (Fluent), Brazilian Portuguese (Fluent)

Education

Ph.D. Physics **2019–Present**
University of Central Florida, Orlando, FL

B.S. Physics, minor in Mathematics **2014–2018**
University of Central Florida, Orlando, FL

Awards and Certificates

2019: outReach for the Stars Award
FL-AVS Short Course on Surface Science & Nano-materials 1st Place Award
2018: NASA L'SPACE Virtual Academy Level 1 Completion
Society of Physics Students Chapter Research Award
2016: Certificate for Outstanding Leadership in Physics Outreach at UCF

Professional Experience

Research History

Graduate Research Assistant **2019–Present**
University of Central Florida, Orlando, FL

Undergraduate Research Assistant **2016–2018**
University of Central Florida, Orlando, FL

Employment History

Graduate Teaching Assistant **2019–Present**
University of Central Florida, Orlando, FL

Undergraduate Teaching Assistant **2017–2018**
University of Central Florida, Orlando, FL

Machinist Apprentice **2016–2018**
University of Central Florida, Orlando, FL

Leadership

Student Chapter Chairman **2019-Present**
American Vacuum Society at the University of Central Florida

Research Intern Supervisor **Summer 2019**
University of Central Florida, Orlando, FL

Funding

$400.00 **2020**
Conference Travel Allocation *UCF CRT52-324*

$400.00 **2018**
Conference Travel Allocation *UCF CRT50-493*

$2000.00 **2017–2018**
National Society of Physics Students Chapter Research Grant

Publications

[1] Ryan C. Fortenberry, Daniel Peters, **Brian C. Ferarri**, and Christopher J. Bennett. Rovibrational spectral analysis of CO3 and C2O3: Potential sources for O2 observed in comet 67P/churyumov–gerasimenko. *The Astrophysical Journal*, 886(1):L10, nov 2019.

[2] **Brian C. Ferarri**. AutoGAMESS: A Python package for automation of GAMESS(US) Raman calculations. *Journal of Open Source Software*, 4(41):1612, sep 2019.

[3] **Brian C. Ferarri** and Chris J. Bennett. A comparison of medium-sized basis sets for the prediction of geometries, vibrational frequencies, infrared intensities and raman activities for water. *Journal of Physics: Conference Series*, 1290:012013, oct 2019.

Conference Experience

Organizing

UCF Raspberry Jam **2018**
https://sites.google.com/site/ucfraspberryjam/home *Short Course*
This event offered interactive workshops to aid students in learning Python Coding, Circuit Analysis/Design and Raspberry Pi Project work. Workshops were led by highly qualified undergraduate students (Introductory level workshops), PhD candidates (Intermediate level workshops) and UCF professors (Advanced level workshops).

Talks

[1] **Brian C. Ferarri**, Katerina Slavicinska, and Chris Bennett. Quantitative measurements of total yields from electron stimulated desorption of ice. *Bulletin of the American Physical Society*, Mar 2020.

[2] **Brian C. Ferarri**, Katerina Slavicinska, and Chris Bennett. Quantitative measurements of total yields from electron stimulated desorption of ice. *ACS National Meeting & Expo*, Mar 2020.

Workshops

Brian C. Ferrari **2018**
Digital Logic Circuits Workshop, UCF Raspberry Jam *(60 min)*

Brian C. Ferrari **2018**
Introductory Python Coding Workshop, UCF Raspberry Jam *(60 min)*

Posters

[1] **Brian C. Ferarri**, Nestor F. Aguirre, and Chris J. Bennett. Experimental study of methane fragmentation and recombination from low energy electron interactions. In *Poster Session of the Florida Chapter of American Vacuum Society Symposium*, 2019.

[2] **Brian C. Ferarri** and Chris J. Bennett. A comparison of medium-sized basis sets for the prediction of geometries, vibrational frequencies, infrared intensities and raman activities of water. In *Poster Session of the 30th annual Conference on Computational Physics*, 2018.

Teaching Assistant Experience

Course	Role	Sections
○ Physical Science	Grader	– 2
○ Physics 1 for Scientists and Engineers	Grader	– 2
○ Physics 2 for Scientists and Engineers	Studio/Scale-up TA	– 3
○ College Physics 1	Lab and Recitation Instructor	– 2
○ College Physics 2	Studio/Scale-up TA	– 1

Programming Languages

Advanced: Python

Intermediate: Julia, Fortran, C/C++

Novice: Mathematica, Shell Scripting, HTML, CSS/Less

Professional Skills

Lab Equipment

- Centrifuge
- Ultrasonic Bath
- Ultra-High Vacuum Chamber System (pumps, gauges, etc.)
- FITR Spectrometer
- ToF Mass Spectrometer
- Focused Ion Beam (FIB)
- Gold Sputter Coater
- Atomic Force Microscope
- Micro-Controllers
- Oscilloscope

Computer Software

- SolidWorks
- LabVIEW
- Origin(Data Analysis and Graphing Software)
- LaTeX
- MacMolPlt
- QuantumESPRESSO
- GAMESS (the General Atomic and Molecular Electronic Structure System)
- CP2k
- SIMION

Interests

Soccer – Tennis - Volleyball – Rock Climbing – Slacklining – Performing Stand-up Comedy – Kayaking – Robotics – DIY Home Automation – Video Game Design