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

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

Publications

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

[2] Brian C. Ferrari 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.

[3] Ryan C. Fortenberry, Daniel Peters, Brian C. Ferrari, 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.

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).

Workshops

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

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

Posters

[1] Brian C. Ferrari, 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. Ferrari 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