PO Box 27164
Greenville, SC 29616

JohnPaul Francois Sleiman

(864)-395-8383
sleiman.johnpaul@gmail.com

Education:

Doctor of Philosophy - Earth and Environmental Science **August 2021 - Present**
University of Rochester Rochester, NY

Master of Science - Geological Sciences **August 2021 - December 2023**
University of Rochester Rochester, NY

Bachelor of Science - Physics **August 2017 - May 2021**
Furman University Greenville, SC

Bachelor of Science - Earth and Environmental Science **August 2017 - May 2021**
Furman University Greenville, SC

Research Experience:

Ph.D. Research Project **August 2021 - Present (Scheduled for May 2026)**
University of Rochester Rochester, NY
Climate Controls On Hill Slope Failures and Soil Displacement In Permafrost Rich Environments

- Mimic temperature patterns from Arctic environments using indoor climate chamber.
- Study forst heave and ice len foramtion in controlled soil experiments
- Messerung soil strain, pressuere (total and pore) and displacement (vertical and horizontal) on thawing soil
- Understanding how temperture plays a role in hillslope stabity in permafrost rich environments
- Future work would include landscape modeling and prediction (LandLab)
- Future work would also include physical scaled down experiements

Master's Research Project **August 2021 - December 2023**
University of Rochester Rochester, NY
Lobate Features On Mars And Their Similarity To Terrestrial Solifluction Lobes (in Prep 2024)

- Processed elevation maps (DTMs) from Earth and Mars in a custom python script.
- Used QGIS-LTR and JMars to determine features from site loctions.
- Made a semi automatic Python script, to load various map types and calculate parameters of surface features that were outline manually in QGIS-LTR and JMars.

Undergrad Thesis Project; Advisor: Dr. Christopher Romanek **May 2020 - May 2021**
Furman University Greenville, SC
Magnesian Calcite As A Paleoenvironmental Indicator (In Review as 2024)
Funded by SC NASA Space Grant Consortium Research Grant

- Synthesized calcium carbonate under unique environmental conditions using the chemostat technique.
- Used Rietveld refinement on XRD analysis to determine mol% Mg determined of lab grown calcite.

- Used a bulk digestion method to determine mol% Mg determined of lab grown calcite from an ICP-OES.
- Used FEG-SEM to look at crystal grains and determine overgrowth on lab grown calcite.
- Installed and calibrated a Prodigy 7 ICP-OES

Undergrad Thesis Project; Advisor: Dr. David Moffett **May 2019 - May 2020**
Furman University Greenville, SC
Radio Observations Of Galactic Supernova Remnants With Synchrotron-Dominated X-ray Spectra (In Prep as 2024)

- Radio observations were conducted at P-band (224 – 480 MHz) and L-band (1 – 2 GHz) using the Very Large Array (VLA) of NRAO.
- Extracted X-ray spectra for several sources using archival observations made by Chandra, Suzaku, and XMM- Newton.
- Applied synchrotron models to these spectra using constraints; namely, derived flux densities and spectral indices obtained from the L-Band and P-Band observations.
- Completed RFI excision, and calibration of bandpass, phase and flux density.
- Analyzed the long wavelength radio properties of known SNRs, specifically 3C 391, Kes 69, and W41.
- Successfully wrote and funded proposal for more telescope time to observation G28.6−0.1 and G32.4+0.1.
- Conducted data analysis on Green-Bank radio data (C-Band).

Semester Research Project **Aug 2019 – Dec 2019**
Furman University Greenville, SC
Watershed Prediction for Bunched Arrowhead

- Generated potional watershed maps based on Proposed construction nearby
- Made plans and sumbitted predctions on impcted on endangered Bunched Arrowhead flower
- Convereted data from ArcDesktop to ArcPro

Research Project **Jan 2018 – May 2019**
Furman University Greenville, SC
Using Astrophotography To Find Variable Stars

- Used DSLRs and CCD cameras to image deep sky objects across the United States.
- Used a variety of telescopes, mounts, and tracking software's to align cameras.
- Used DS9 and PixInsight to stack, calibrate and color algin images.
- Wrote C++ script to determine brightness of each star in each individual frame.

Summer Research Project **May 2018 – August 2018**
Green Bank Observatory Green Bank, WV
Educational Research In Radio Astronomy (ERIRA)

- Used Green Bank Observatory (a 100-meter diameter telescope) and Green Bank 40 meter.

- Imaging and modeling the rebrightening behavior of Cassiopeia A using linear regression.
- Measuring the rotation speed of the Milky Way using Doppler shift.
- Imaging and measuring radio flux and polarization for the Orion Nebula, Barnard's Loop, and the North Polar Spur.
- Observing pulsars to determine their periods.

Successful Proposals:

NRAO Very Large Array **2020B Cycle**
An X-ray and Radio Analysis of the Peculiar Galactic Supernova Remnant G28.6-0.1
Role: Collaborator and editor

Grants and Fellowships:

South Carolina Space Grant Consortium Travel Grant - $5,000 **March 2018**
Furman University
Furman Fellows Summer Research Recipient - $5,000 **May 2019 - August 2019**
Furman University
SC NASA Space Grant Consortium Research Grant - $15,000 **May 2020 - May 2021**
Furman University
Fluor Scholarship Program Scholarship - $60,000 **June 2019- May 2021**
Furman University

Teaching Experienc:

Graduate Teaching Assistant **August 2021 - May 2022**
University of Rochester Earth and Environmental Science Department Rochester, NY

- Hydrology and Water Resources.
- Environmental Geochemistry

Undergraduate Teaching Assistant **August 2018 - May 2021**
Furman University Physics Department Greenville, SC

- Introductory astronomy
- General Physics 1
- General Physics 2

Coursework (Current and Past):

Astrophysics, Climate Systems, Environmental Data Science Analysis, Environmental Science, Geomorphology, GIS, Incompressible Fluid Mechanics, Mineralogy and Petrology I and II, Physics of the Atmosphere, Quantum Mechanics, Remote Sensing, Sediment Transport, Thermo-Chemistry, Thermo- Physics, Ocean Climate Systems, and Watershed hydrology.

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Other Experience:

Cork and Tap **August 2019 – October 2021**
Manager and business owner Greenville, SC

- Operated a small wine bar in downtown Greenville.
- Manage beer, wine, liquor, and food inventor.
- Lead operations with cleaning duties and checklist, training material, steps of service, shift changeover guidelines, emergency protocols, stocking of equipment, and Alcohol ServeSafe certified

Joy of Tokyo **August 2016 – April 2020**
Assistant Manager Greenville, SC

- Reviewing financial statements and sales reports to monitor business performance and adjust where necessary
- Establishing relationships with suppliers to ensure the restaurant has access to the products it needs to operate efficiently
- Training employees in food preparation techniques, including cooking methods and training all team members to be ServSafe certified

Conference Presentations:

AGU 2023 Fall Meeting - Talk **December 2023**
Are lobate features on Mars quantitatively similar to terrestrial solifluction lobes?
AGU 2023 Fall Meeting - Talk **December 2023**
Oobleckian Hillslopes? Viewing solifluction patterns as a rheology-induced instability
AGU 2022 Fall Meeting - Talk **December 2022**
Lobate features on Mars exhibit same scaling as terrestrial solifluction patterns.
American Physical Society **March 2022**
Arctic Soil Patterns as Large, Exceedingly Slow Fluid Instabilities
AGU 2021 Fall Meeting **December 2021**
The enigma of lobate soil patterns: Bridging scales, materials, and worlds.
Furman Engaged 2021 - Poster **May 2021**
Magnesian Calcite as a Paleoenvironmental Indicator
National Conference on Undergraduate Research 2021 - Poster **May 2021**
Magnesian Calcite as a Paleoenvironmental Indicator
GSA 2021 Southeastern Section Meeting 2021 meeting 70 - Poster **May 2021**
Magnesian Calcite as a Paleoenvironmental Indicator
Furman Engaged 2021 - Poster **May 2021**
Searching for Radio Counterparts of X-Ray Bright Supernova Remnants
American Astronomical Society meeting 236. - Poster **June 2020**
New X-ray and Radio Observations of the Synchrotron X-ray-Dominated Galactic Supernova Remnant G32.4+0.1
American Astronomical Society meeting 236. - Poster **June 2020**
An X-ray and Radio Analysis of the Peculiar Galactic Supernova Remnant G28.6-0.1
Furman Engaged 2020 - Poster **May 2020**
L-Band and P-Band Observations of Galactic Supernova Remnants with Synchrotron X-Ray Dominated Spectra.
American Astronomical Society meeting 235. - Poster **January 2020**
L-Band and P-Band Observations of Galactic Supernova Remnants with Synchrotron X-Ray Dominated Spectra.

Conference for Undergraduate Women in Physics. - Poster **January 2020**
New Radio Observations of Galactic Supernova Remnants G28.6-0.1 and G32.4+0.1

Service/Leadership:

Jet Propulsion Laboratory Solar System Ambassador **December 2019 - Present**
Public relations and public speaker

Speed and Debate Coach **Aug 2017 - Present**
Mentor and coach for high school students

AS&E Graduate Student Association President **June 2024 – June 2025**
University of Rochester Earth and Environmental Science Department

AS&E Graduate Student Life Officer **June 2023 – June 2024**
University of Rochester Earth and Environmental Science Department

Graduate Student Department Representative **August 2022 – June 2023**
University of Rochester Earth and Environmental Science Department

Graduate Student Ambassador **August 2022 – June 2023**
University of Rochester Earth and Environmental Science Department

Graduate Student Welcome Committee **August 2022 – Present**
University of Rochester Earth and Environmental Science Department

Faculty Search Committee **January 2024 – April 2024**
University of Rochester Earth and Environmental Science Department

Furman University Planetarium **August 2018 – May 2021**
Operated, conducted, and directed Planetarium talks and shows

Furman Forensic Scholarship **January 2018 – May 2021**
Founder and director of High School scholarship

Chapter President **January 2018 – May 2021**
Society of Physics Students, Furman University Chapter

Director **August 2018 – May 2019**
TEDxFurmanU, Furman University

President **August 2018 – May 2021**
Furman Forensic, Furman University

President **August 2018 – May 2019**
Astronomy Club, Furman University

Awards and Honors:

Furman Bell Tower Scholarship Recipient **Fall 2017 to May 2021**
Cum Laude **2021**
Sigma Pi Sigma National Physics Honor Society **2020**
Phi Eta Sigma National Honors Society **2015**
Furman's Deans list **Fall 2018 to May 2021**
Quaternion Club Inductee (Furman Honor Society) **April 2021**
Wallace C. Fallaw Outstanding Senior Award (Furman Department of EES) **January 2020**

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Skills:

ARCGIS (Desktop and Pro) · ICP-OES · XRD · SEM · Public Speaking · Production (Sound and Lighting) · Watershed Management · Argumentative and Analytical Writing · Data Collection/Interpretation · Python · C++ · Casa · Mathematica · DS9 · Point of Sale (POS) Systems · Employee Training · Time Management · Marketing · Community Outreach · Coaching · Customer Service · Budgeting · Leadership · Small Business · Food and Beverage · Team Building · Accounting · Advertising

Professional Associations

American Astronomical Society
American Geological Union
American Physical Society
The Geological Society of America
United States Permafrost Association
Association of Polar Early Career Scientists
Subduction Zones in four Dimensions
Association for Environmental Studies and Sciences
Environmental Protection Network
American Association for the Advancement of Science
Geomorphology Specialty Group

Hobbies:

In my free time during the week, I enjoy reading science fiction, hiking, and watching football or baseball when on. When long weekends are available, I try to go camping and do some astrophotography. I am also a baker and carpenter

Career Objective:

PhD candidate at the University of Rochester studying Geophysics, with over five years of applied research experience in physics and geochemistry. A confident presenter, business owner, and entrepreneur in diverse fields, with a passion for astrophotography, baseball, carpentry, and fieldwork. Skilled in problem-solving, watershed management, data processing, and leadership, developed through tutoring courses in geology and astronomy. Current research focuses on Arctic-like environments and planetary surfaces, using physical experiments to build better predictive models for future assessments. These models not only help forecast future changes but also unravel past landscape evolution and the role climate played. Future goals include working in science policy, leveraging strong science communication skills to advocate for sound, evidence-based policy.

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