

Research Assistant Professor

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APPOINTMENTS

The University of Texas at Austin, Research Assistant Professor, 2023 - present.

The University of Texas at Austin, Geology and Geophysics Research Associate, 2023.

Baylor University/University of Pittsburgh, Postdoctoral Researcher, 2020-2023

EDUCATION

University of Pittsburgh, Pittsburgh, PA, U.S.A.

June 2016 – August 2020

Ph.D., Remote Sensing and Geoscience, Geology and Environmental Science

Dissertation: *Quantifying thermal infrared emission from active lava surfaces to improve models of effusive volcanism*

Advisor: Michael S. Ramsey

University of Bristol, Bristol, U.K.

September 2014 – September 2015

M.Sc., Volcanology, Earth Sciences

Thesis: *Volcanic activity surveillance using thermal infrared cameras at Volcán de Fuego, Guatemala*

Advisors: I. Matthew Watson and Katharine Cashman

University of Southampton, Southampton, U.K.

September 2011 – June 2014

B.Sc., Geology, Ocean and Earth Science

Dissertation: *The Solid Geology of the Petrich Region in Sofia Province, Bulgaria*

Advisor: Stephen Roberts

RESEARCH/EXPERIENCE

Postdoctoral Researcher

September 2020 – August 2023

Baylor University/University of Pittsburgh

Advisors: Kenneth Befus/Michael Ramsey

- Develop a new frame-work to automatically extract, calibrate, and subset GEO data over targeted volcanoes following an eruption detection in LEO data. Improve satellite volcano eruption detection algorithms.
- Develop GIS and remote sensing techniques for spectral surface detection and change detection.
- Develop sUAS TIR instrumentation to investigate thermal variability across active lava and wildfires.
- Derive volcanic ash composition and particle size during eruptions to improve future eruption forecasting.

Graduate Student Researcher/NASA Pre-Doctoral Fellow

June 2016 – August 2020

Advisor: Michael Ramsey, University of Pittsburgh

IVIS Laboratory

- Improved geospatial analysis and manipulation techniques to spatially quantify surface land processes and hazards using ground, airborne, and orbital geophysical remote sensing data (Python, IDL).
- Developed multi-scale land surface forecasting models for data visualization and hazard assessments including a variable emissivity module for PyFLOWGO (a Python based propagation model)
- Developed and calibrated a new ground-based miniature multispectral thermal camera system.
- Experience in automation of data collection, processing, and manipulation for geoscience analysis
- Hyperspectral laboratory FTIR spectroscopy (high-temperature emission) and microscope analysis

Intern Researcher

February - May 2016

Advisor: Nick Varley, University of Colima

Colima Exchange and Research in Volcanology (CIIV)

- Improved thermal infrared, ultraviolet, and infrasound monitoring techniques for hazard assessments
- Evaluated geospatial datasets to improve monitoring and interpretations of volcanic activity (QA/QC)

Graduate Student Researcher (Masters)**September 2014 – September 2015**

Advisors: I. Matthew Watson and Katharine Cashman, University of Bristol

COMET Group

- Improved volcanic activity surveillance at Volcán de Fuego (Guatemala) using thermal infrared cameras
- Developed a long-term thermal infrared monitoring strategy to reduce volcanic risk to local populations

Student Researcher (Undergraduate)**January 2013 - June 2014**

Advisor: Stephen Roberts, University of Southampton

Geochemistry Research Group

- Geological mapping of a metamorphic intra-arc basin in central Bulgaria
- Petrological, structural, paleontological analysis evaluating syn- and post- emplacement processes

RESEARCH FUNDING**Leveraging Satellite Observations of Fire Radiative Power to Improve the EPA Wildland Fires Emissions Inventory (WFEI)**

Period: 2026 - 2028

NASA

Co-Investigator (\$205,000)

*Selected: Fully Funded***Optimization and benchmarking of fire spread model performance to build trust and accelerate innovation in U.S. operational fire management**

Period: 2026 - 2028

NASA

Co-Investigator (\$132,000)

*Selected: Fully Funded***XPRIZE: FLARE-X: Active Fire Detection**

Period: 2023 - 2026

Co-PI (~\$1m)

*Funded***Creating a continuous monitoring system for wildfire risk in the Balcones Canyonlands Preserve (BCP)**

Period: 2023 - 2026

City of Austin

Co-Investigator (\$60,000)

*Selected: Fully Funded***Validating volcanic degassing retrievals in the infrared: Preparing for the upcoming SBG mission**

Period: 2023 - 2026

NASA, Earth Surface and Interior

Co-Investigator (\$664,000 over three years (~\$140k))

*Selected: Fully Funded***UAS thermal infrared spectroscopy will improve real time evaluation of hazards and environmental impacts of wildfires**

Period: 2023 - 2026

NASA, Technology Development for Support of Wildfire Science and Disaster Mitigation

Principle Investigator (\$1.33m over 3 years)

*Selected: Fully Funded***Infrared detection of gas and ash compositions in volcanic plumes**

Period: 2021-2024

NASA, Earth Surface and Interior

Contributor and Funded Postdoctoral Researcher (\$25k/yr.)

Improving the near real-time monitoring, modeling, and forecasting of ash- and SO₂-rich plumes

Period: 2020-2023

NASA, Earth Science Research from Operational Geostationary Satellite Systems

Contributor and Funded Postdoctoral Researcher (\$25k/yr.)

Improving thermal modeling of effusive volcanism: Quantifying the variability in radiant emission from active lava flows and lakes

Period: 2017-2020

NASA, Earth and Space Sciences Fellowship

Pre-Doctoral Fellow (\$45k/yr.)

Quantifying active volcanic processes and hazards with HypSIRI

Period: 2016-2018

NASA, HypSIRI Preparatory Airborne Activities Program

GSR

PI: Michael Ramsey

The spectral and thermal response of active basaltic surfaces: Constraining lava cooling, petrology and flow propagation models

Period: 2016-2017

NSF, Petrology and Geochemistry Program

GSR

PI: Michael Ramsey

Validating volcanic degassing retrievals using a novel ground-based thermal infrared camera system: Preparing for the upcoming SBG mission

Period: 2023 - 2026

NASA, Earth Surface and Interior

Co-Investigator (~\$25k/yr.)

*Currently under consideration***SUPERVISION****Bureau of Economic Geology, University of Texas at Austin****2023 -**

Postdoctoral Researchers:

- Gabriel Pasquet: 2025 --: Geological Hydrogen Potential Across Texas
- Suvan Cabraal: 2026 --: Wildfire dynamics and risk across the WUI

Graduate Students:

- Jacob Krueel: 2024-2026: Masters Student (expected graduation Summer 2026): A Systematic Approach to Measuring Soil Water Dynamics in Post-Fire Landscapes

Undergraduate Students:

- Krishnan Ram: 2025: XPRIZE
- Makayla Rodriguez: Capstone 2025-2026: The Influence of Burn Severity on PM2.5 Emissions from Wildland Fire across Grasslands and Woodlands in Central Texas.

Summer Undergraduate Scholars:

- Oscar Schaubert: 2024: The Impacts of Prescribed Burns on Plant and Soil Microbial Communities in Travis County
- Quinn Dolan: 2025: Wildfires to Wildflowers.

Department of Geosciences, Baylor University**2021- 2023**

- Supervised and trained an undergraduate researcher investigating magma disequilibrium at Mono Domes

Department of Geology and Environmental Science, University of Pittsburgh**2018 - 2020**

- Supervised and trained an undergraduate researcher investigating textural properties of basaltic lavas

TEACHING EXPERIENCE**Lecturer**

Environmental Studies Department, Southwestern University 2023

- Undergraduate lecture
 - (1) 49-204: Environmental GIS

Teaching Assistant

Department of Geology and Environmental Science, University of Pittsburgh 2016 - 2019

- Undergraduate recitation lecture(s)
 - (2) GEOL 0820: Natural Disasters - Substitute
 - (3) GEOL 1001: Mineralogy - Substitute
 - (4) GEOL 2003: Igneous and Metamorphic Petrology - Substitute

Department of Geosciences, Baylor University 2021 - 2023

- Undergraduate recitation labs(s)
 - (1) GEOL 1405: Dynamic Earth
 - (2) GEOL 4485 Introduction to Geographic Information Systems - Substitute
 - (3) GEO 5308: Spectroscopy - Substitute

Guest Lecturer

Department of Geology and Environmental Science, University of Pittsburgh 2016 - 2019

- Undergraduate lecture(s)
 - (1) GEOL 0800: Geology
 - (2) GEOL 0802: Geology of National Parks
- Graduate lecture(s)
 - (1) GEOL 3974: Hazard Observation, Modelling and GIS
 - (2) GEOL 2460: Applied Remote Sensing & GPS Techniques

Department of Geosciences, Baylor University 2021 - 2023

- Undergraduate lecture(s)
 - (1) GEO 4485: Introduction to Geographic Information Systems
- Graduate lecture(s)
 - (1) GEO 5308: Spectroscopy

Integration of Research, Teaching, and Learning Training Courses September – November 2019

- CIRTL Network
- An Introduction to Evidence-Based Undergraduate STEM Teaching

PEER-REVIEWED ARTICLES

- Thompson, J. O.**, Williams, D. B., Realmuto, V. J., & Ramsey, M. S. Analysis of the 2022 HTHH eruption cycle using geostationary satellite thermal infrared spectroscopy. *Bulletin of Volcanology*, 87(12), 111, 2025.
- Rabuffi, F., Hulley, G., Hook, S. J., Cawse-Nicholson, K., Ramsey, M. S., **Thompson, J. O.**, Freepartner, R.J., & La, T. T. Surface Mineralogy using Thermal InfraRed Spectroscopy Data from ECOSTRESS and ASTER. *IEEE Geoscience and Remote Sensing Letters*, 2025.
- Thompson, J.O.**, Giovanini, E., Befus, K., Marshall, E. and Allison, C. The use of UAV-based visible and multispectral thermal infrared data for active volcano monitoring and analysis: test of a low-cost solution applied to the 2022 Meradalir eruption, *Volcanica*, 8(1), pp. 325–399. doi: 10.30909/vol/qmel8943, 2025
- Fortin, M. A., Gazel, E., Williams, D. B., **Thompson, J. O.**, Kaltenecker, L., & Ramsey, M. S. Lava Worlds Surface Measurements at High Temperatures. *The Astrophysical Journal Letters*, 974(1), L7, 2024

- Befus, K. S., **Thompson, J. O.**, Allison, C. M., Ruefer, A. C., & Manga, M. Rehydrated glass embayments record the cooling of a Yellowstone ignimbrite. *Geology*, 2024.
- Thompson, J.O.**, Williams, D.B., and Ramsey, M.S. The Expectations and Prospects for Quantitative Volcanology in the Upcoming SBG Era, *Earth and Space Science*, 10, (5), e2022EA002817, 2023.
- Shreevastava, A., Hulley, G., and **Thompson, J.O.**, Algorithms for detecting sub-pixel elevated temperature features for the NASA Surface Biology and Geology (SBG) designated observable, *JGR: Biogeosciences*, 128 (7)e2022JG007370, 2023.
- Ramsey, M.S., Corradino, C., **Thompson, J.O.**, and Leggett, T.N., Statistical retrieval of volcanic activity in long time series orbital data: Implications for forecasting future activity, *Remote Sensing of Environment*, 295, (113704), 2023.
- Befus, K.S., Ruefer, A.C., Allison, C.M., and **Thompson, J.O.**, Quartz-hosted inclusions and embayments reveal storage, fluxing, and ascent of the Mesa Falls Tuff, Yellowstone, *Earth Planet. Sci. Lett.*, 601 (117909), 2023.
- Thompson, J.O.**, Contreras-Arratiac, R., Befus, K.S., and Ramsey, M.S., Thermal and seismic precursors to the explosive eruption at La Soufrière Volcano, St. Vincent in April 2021, *Earth Planet. Sci. Lett.*, 592 (117621), 2022.
- Rogic, N., Bilotta, G., Ganci, G., **Thompson, J.O.**, Cappello, A., Rymer, H., Ramsey, M.S., Ferrucci, F., The Impact of Dynamic Emissivity–Temperature Trends on Spaceborne Data: Applications to the 2001 Mount Etna Eruption, *Rem. Sens.*, 14 (7), 1641, 2022.
- Ruefer, A., Befus, K.S., **Thompson, J.O.**, and Andrews, B.J., Implications of multiple disequilibrium textures in quartz-hosted embayments, *Front. Earth Sci.* 9:742895, 2021.
- Thompson, J.O.**, Ramsey, M.S., Lee, R.J., and Williams, D.B., Quantitative thermal emission spectroscopy at high-temperatures: A laboratory approach for measurement and calibration, *JGR: Solid Earth*, 126, e2021JB022157, 2021.
- Thompson, J.O.** and Ramsey, M.S., Influence of variable emissivity on lava flow propagation modeling, *Bull. Volc.*, 83 (6), 1-19, 2021.
- Thompson, J.O.** and Ramsey, M.S., Spatiotemporal variability of active lava surface thermal properties using ground-based multispectral thermal infrared data, *J. Volcanol. Geotherm. Res.*, 408 (107077), 2020.
- Thompson, J.O.** and Ramsey, M.S., Uncertainty analysis of remotely-acquired thermal infrared data to extract the thermal properties of active lava surfaces, *Rem. Sens.*, 12 (1), 193, 2020.
- Thompson, J.O.**, Ramsey, M.S., and Hall, J.L., MMT-Cam: A new miniature multispectral thermal infrared camera system for capturing dynamic Earth processes, *IEEE Trans. Geosci. Rem. Sens.*, 57 (10), 7438-7446, 2019.

PEER-REVIEWED SHORT PAPERS

- Thompson, J. O.**, Ramsey, M., & Realmuto, V. Development of SBG Operational Algorithms for Elevated Temperature Detection and Volcanic Activity. In *IGARSS 2024-2024 IEEE International Geoscience and Remote Sensing Symposium* (pp. 2469-2474). IEEE, July 2024.
- Ramsey, M., **Thompson, J.O.**, Hulley, G., & Hook, S. Retrieving Surface Mineralogy with Future SBG Thermal Infrared Data. In *IGARSS 2024-2024 IEEE International Geoscience and Remote Sensing Symposium* (pp. 2717-2722). IEEE, July 2024.

SELECTED PUBLISHED ABSTRACTS

- Thompson, J. O.*, Smekens, J. F., Julio, D., Ramsey, M. S., Schwoppe, C., & White, J. D. Near real-time detection of wildland fire thermal and gas emissions from UAV-based multispectral infrared imagers. In *AGU Fall Meeting Abstracts* (Vol. 2024, No. 1376, pp. B31H-1376), 2024
- Rabuffi, F.*, Hook, S. J., Cawse-Nicholson, K., Hulley, G. C., Ramsey, M. S., & Thompson, J. O. Estimating mineral abundances from SBG-TIR simulated data. *AGU24*, 2024
- Ramsey, M. S.*, Thompson, J. O., Hulley, G. C., & Rabuffi, F. Mapping the Earth's surface: Retrieving global rock-forming mineralogy with future SBG thermal infrared data. *AGU24*, 2024
- Ramsey, M. S.*, Thompson, J. O., & Smekens, J. F. Eruption Forecasting: What is possible over the next decade of high-resolution thermal infrared data?. *AGU24*, 2024

- Ramsey, M.S.*, Thompson, J.O., Corradino, C., Watson, I.M., Williams, D.B.*, Forecasting volcanic activity over the next decade: The plans for rapid-revisit orbital thermal infrared (TIR) data, Cities on Volcanoes Mtg., session 408, abs. #626, 2024.
- Thompson, J.O.*, Ramsey, M.S., Corradino, C., Forecasting future volcanic activity in long time series orbital infrared data using machine learning, EGU General Assembly, abs. #14151, 2024.
- Ramsey, M.S.*, Thompson, J.O., Smekens, J-F., What we need in thermal infrared (TIR) data to forecast volcanic activity: From new ground-based sensors to a rapid-revisit orbital concept, EGU General Assembly, abs. #13558, 2024.
- Flynn, I.T.W.*, Bhushan, S., Thompson, J.O.*, Ramsey, M.S., Satellite data synergy for volcanic monitoring: The Mauna Loa 2022 eruption, Cities on Volcanoes Mtg., session 417, abs. #389, 2024.
- Williams, D.B.*, Thompson, J.O.*, Ramsey, M.S., Coupling multispectral ground and space TIR systems for monitoring volcanic emissions, Cities on Volcanoes Mtg., session 408, abs. #396, 2024
- Thompson, J.O.*, Williams, D.B., Ramsey, M.S., Realmuto, V.J., Coupling the short-term surface and atmospheric thermophysical responses during the 2022 Hunga Tonga (HTHH) eruption using geostationary thermal infrared spectroscopy, AGU Fall Mtg., 2023.
- Ramsey, M.S. *, Thompson, J.O., Corradino C., Modeling volcanic activity in long time series orbital infrared data: Implications for forecasting future activity, AGU Fall Mtg., 2023.
- Ramsey, M.S., Thompson, J.O.*, Flynn, I.T.W.*, Williams, D.B.*, Lava flow emplacement processes: Automating hazard modeling in the next era of orbital infrared sensors, GSA Annual Mtg. abs. 131-7, 2023.
- Ramsey, M.S. *, Watson, I.M., Thompson, J.O., Williams, D.B., New instrumentation, approaches, and future concepts for thermal and compositional imaging of volcanic plumes, 2023 IAVCEI General Assem., Rotorua, New Zealand, 2023.
- Ramsey, M.S. *, Thompson, J.O., Corradino C., Leggett, T.N., Twenty plus years of orbital thermal infrared data: Expectations for volcano science in the SBG era, AGU Fall Mtg., 2022.
- Thompson, J.O.*, Williams, D.B., Ramsey, M.S., Realmuto, V.J., Characterizing precursory volcanic activity using geostationary thermal infrared data, AGU Fall Mtg., 2022.
- Williams, D.B.*, Thompson, J.O., Ramsey, M.S., Modeling the composition and particle size distribution of the Hunga Tonga-Hunga Ha'apai ash plume using thermal infrared spectroscopy, AGU Fall Mtg., 2022.
- Ramsey, M.S.*, Thompson, J.O., Leggett, T.N. and Corradino C., Does data volume equate to better eruption forecasts?, AGU Fall Mtg., 2021.
- Thompson, J.O.*, Ramsey, M.S. and Contreras-Arratia, R., Big pixel volcanic thermal activity, AGU Fall Mtg., 2021.
- Rogic, N.*, Thompson, J.O., Rymer, H., Ramsey, M.S. and Ferrucci, F., 'Dynamic Emissivity-Temperature Trend' and its impact to Spaceborne Applications: Mount Etna case study, AGU Fall Mtg., 2020.
- Ramsey, M.S.*, Harris, A.J.L., Thompson, J.O. and Williams, D.B., Recent advances in thermal infrared data systems for studies of active volcanic processes, 27th IUGG Gen. Assembly, IUGG19-3371, 2019.
- Ramsey, M.S., Williams, D.B.*, and Thompson, J.O., Beyond multispectral/multiday thinking: What the Decadal Survey really says about thermal infrared (TIR) data and volcanic systems. NASA Surface Biology and Geology: Community Workshop, 2019.
- Thompson, J.O.* and Ramsey, M.S., Active Lava Surface Properties and Flow Propagation Derived from Infrared Data, AGU Fall Mtg., 2019.
- Thompson, J.O.* and Ramsey, M.S., Constraining the inherent uncertainties in thermal infrared (TIR) measurements of active lava surfaces: The need for improved spatial and spectral resolution data. NASA Earth Surface and Interior: Science Team Meeting, 2019.
- Thompson, J.O.*, Williams, D.B., and Ramsey, M.S., The importance of multispectral thermal infrared (TIR) data for quantitative volcanic monitoring. NASA Surface Biology and Geology: Community Workshop, 2019.
- Ramsey, M.S. and Thompson, J.O.*, Emissivity retrievals from active lava surfaces: Implications for improved flow modeling and hazard assessment, AGU Fall Mtg., 2018.
- Thompson, J.O.* and Ramsey, M.S., Hawaii's subaerial intraplate volcanic activity: Thermal infrared measurements of Kilauea's lava lake and flows, AGU Fall Mtg., 2018.
- Thompson, J.O.* and Ramsey, M.S., Emissivity retrievals from active lava surfaces: Results from the NASA Hawaii airborne campaigns, 2018 HypSIRI Science and Applications Workshop, Washington, DC, 2018.
- Thompson, J.O.* and Ramsey, M.S., Thermal infrared measurements of active lava surfaces: Implications for improved flow modeling and future instrument development, Asia Oceania Geosci. Soc. Ann. Mtg., 2018.
- Thompson, J.O.* and Ramsey, M.S., Thermal infrared data of active lava surfaces using a newly developed camera system, AGU Fall Mtg., 2017.

- Thompson, J.O.* and Ramsey, M.S., MMT-Cam: A new miniature multispectral thermal infrared camera system for field-based emissivity measurements, 2017 HypsIRI Science and Applications Workshop, Pasadena, CA, 2017.
- Ramsey, M.S.* and Thompson, J.O., Can HypsIRI-like data constrain accurate temperature and emissivity measurements of active volcanic surfaces?, 2017 HypsIRI Science and Applications Workshop, Pasadena, CA, 2017.
- Lee, R.J.*, Thompson, J.O., Ramsey, M.S. and King, P.L., Does the Emissivity of Basaltic Lava Surfaces Change with Temperature and Why Do We Care?, 2017 IAVCEI General Assem., Portland, OR, 2017.
- Thompson, J.O.* and Ramsey, M.S., Identifying silicic surface textures and flow relationships using thermal infrared image data, 2017 IAVCEI General Assem., Portland, OR, 2017.
- Ramsey, M.S.* and Thompson, J.O., The HypsIRI volcano airborne campaign: Development of a new infrared camera for data acquisition and validation, 2016 HypsIRI Science and Applications Workshop, Pasadena, CA, 2016.

* indicates presenting author

INVITED TALKS

- 12/05/2025 **High-Resolution Infrared Remote Sensing of Geohazards from Volcanoes to Wildfires**, Institute for Geophysics, The University of Texas at Austin, TX, USA
- 08/27/2021 **Volcanology Through the Eyes of Thermal Infrared**, Department of Geosciences, Baylor University, TX, USA
- 09/05/2019 **Quantifying the Fury of Tūtū Pele: Improving Lava Modeling using Novel Thermal Camera Data**, Department of Geology and Environmental Science, University of Pittsburgh, PA, USA

FIELD EXPERIENCE

- Prescribed Fire, TX, USA** **2023-**
Supported prescribed fire activities as a researcher by acquiring ground and UAS based thermal infrared data
- 2025 FireSense Campaign, Southwestern USA** **2025**
Primary objectives include demonstration and evaluation of technology to support wildland fire management decisions and collection of measurements to validate prediction models for wildland fire and smoke management.
- Big Bend National Park, TX, USA** **2023**
Graduate field trip introducing igneous petrology and processes the Big Bend region caused by the Wichita orogeny and Basin and Range Province. The trip included a general geological history/mapping, remote sensing, and petrology
- Fagradalsfjall volcano, Iceland** **2022**
Field campaign to acquire sUAS-based multispectral thermal infrared data of the active and cooling lava surfaces, as well as textural and degassing analysis.
- Long Valley, CA, USA** **2021**
Field campaign to acquire samples of rhyolitic deposits from the Mono Domes volcano complex to evaluate the magmatic evolution of the system.
- Llano Uplift, TX, USA** **2021, 2022**
Undergraduate field trip introducing metamorphic and igneous petrology and processes on the Llano uplift region. The trip included a general geological history, geological mapping, and remote sensing integration.
- Yellowstone National Park, WY, USA** **2020**
Field campaign to acquire samples of fallout deposits from large explosive eruptions and characterize the evolution of deposits as the eruptions progressed.

NASA HypSIRI Hawaii field campaigns, HI, USA**2017 and 2018**

Two field campaigns supporting the NASA HypSIRI airborne campaign to acquire unsaturated multispectral thermal infrared data of the Kilauea lava lake and pahoehoe lava flow on the coastal plain at different spatial resolutions.

IAVCEI Holocene age dike-fed silicic domes and flows in Oregon and California field course, USA**2017**

Investigated how physical and chemical processes responsible for the textural and structural diversity of these domes and associated explosive products can be inferred from field observations and laboratory simulations.

Monitoring at Colima, Mexico**2016**

Monitored and interpreted activity at Volcán de Colima, using thermal infrared cameras, infrasound arrays, seismic logs, UV spectroscopy, and visual datasets. Photogrammetry surveys of dome growth and pyroclastic flow deposits.

Guatemala Field Trip**2015 and 2018**

Investigated a variety of volcanic processes and the current and potential hazards they pose.

Geological field mapping in the Petrich region, Bulgaria**2014**

Geological field mapping in the metamorphic intra-arc basin, containing reworked volcanic deposits.

Oceanography Survey, Southampton, UK**2013**

Seabed bathymetry survey and water column biogeochemistry analyses.

PROGRAMMING, SOFTWARE, ANALYTICAL SKILLS

Programming languages: IDL, Python, MATLAB

Programs: ENVI, FLIR ResearchIR, Agisoft, ESRI ArcGIS, ERDAS Imagine, Microsoft Suite, Illustrator, Corel, LaTeX

Experience with geospatial and geophysical data retrieval and image processing including on UAS platforms

Datasets: ASTER VIS/TIR and DEM, MASTER, AVIRIS, HyTES, GEOS ABI, LiDAR, FLIR, UV FLYSPEC, Seismic

Analytical Techniques: FTIR, μ FTIR, Raman, SEM, X-Ray Diffraction

FAA UAS Remote Pilot

AWARDS

2019 NASA Earth Surface and Interior: Solid-Earth Team: Meeting Travel Award

2017-2020 NASA Earth and Space Science Fellowship

2017 Henry Leighton Memorial Graduate Award, University of Pittsburgh

2012 Progression Scholarship, University of Southampton, U.K.

PROFESSIONAL ORGANIZATIONS

Institute of Electrical and Electronics Engineers (IEEE), 2019 --

American Geophysical Union, 2016 --

International Association of Volcanology and Chemistry of the Earth's Interior, 2017 --

SERVICE AND OUTREACH

NASA: Proposal Review Panel – Panelist – 2021, 2022, 2023, 2024, 2025

Channel 10: Degrees of Science – Science Expert Contributor – 2022

AGU OSPA: Evaluator – 2022

AGU, Elsevier, Springer, MDPI: Research Science Journals – Reviewer – 2020 --

University of Pittsburgh: Elizabeth Baranger Teaching Awards – Selection Committee – 2019

University of Pittsburgh: Summer Research Grant – Selection Committee – 2019

University of Pittsburgh: PITT Mobile Science Lab – Outreach Volunteer – 2017-2019