BP Blakley

they/them
bblakle2@jh.edu | 246 Olin Hall, 3400 N. Charles St., Baltimore, MD 21218

Education

Johns Hopkins University — 2024-Present

PhD, Earth & Planetary Sciences — *Baltimore, MD*

Advisor: Sarah M. Hörst, PhD.
Relevant Coursework: Remote Sensing of the Environment, Exoplanets and their Atmospheres, Spacecraft Instrumentation Project, Physics and Chemistry of Aerosols, Planetary Surfaces and Processes

Pasadena City College — 2021-2024

Geology — *Pasadena, CA*

Relevant Coursework: Mineralogy, Geologic Mapping, Physical Geology with Lab and Field Study, Geology Independent Research, Historical Geology with Field Study, Modern Physics, Electricity & Magnetism, Multivariable Calculus, Linear Algebra, General Chemistry with Lab

School of The Art Institute of Chicago — 2006-2010

Bachelor of Fine Arts — *Chicago, IL*

Wake Technical Community College — 2005-2006

Associate in Arts (Transfer) — *Raleigh, NC*

Transferred Spring 2006.

Honors, Fellowships, & Awards

NSF Graduate Research Fellowship — Sep 2024-May 2029

Wayne Loel Scholarship, Geology, Pasadena City College — Jun 2024

Bruce Carter Field Award, Geology, Pasadena City College — Jun 2024

Research Experience

PHAZER, Hörst Laboratory, Johns Hopkins University — Aug 2024-Present

Doctoral Student — *Baltimore, MD*
Supervisor: Dr. Sarah Hörst

Carrying out laboratory simulations of the photochemical haze particles (“*tholins”)* in the atmosphere of Saturn’s largest moon, Titan. Executing multi-method analysis of hydrolyzed tholins to understand the solubility and properties of soluble vs. insoluble compounds in Titan tholins.

Astrophysical Materials Laboratory, Northern Arizona University (NAU) — Jun 2023-Feb 2024

REU Student — *Flagstaff, AZ*
Supervisor: Dr. Will Grundy

Carried out experiments to determine the equilibrium vapor pressures and enthalpies of sublimation of volatiles at temperatures relevant to the outer solar system. Utilized a quartz crystal microbalance (QCM) within a cryo-cooled vacuum chamber, as well as a mass-spectrometer and Fourier-transform infrared (FTIR) spectrometer for characterization.

I presented my results in a talk at the 55th Division of Planetary Science (DPS) meeting; I wrote an article detailing the research and results, published in volume 244 of *Planetary and Space Science*.

Lunar Trailblazer Mission, Caltech — Jan 2022-Dec 2024

Research Assistant — *Pasadena, CA*
Supervisor: Dr. Bethany Ehlmann

Researched and wrote a public-facing science article about the nature of lunar water. Transitioned from science communications support to laboratory research in June 2022. Ongoing work includes performing laboratory investigations to simulate potential lunar mixtures of water-ice and regolith in support of forward- and reverse-modeling of in-situ water-ice spectral signatures. Utilizing an ASD field spectrometer and FTIR spectrometer.

I presented this research as a poster at the 2023 Lunar and Planetary Sciences Conference (LPSC).

Geology Independent Study, Pasadena City College — Jan-May 2023

Research Assistant — *Pasadena, CA*
Supervisor: Dr. Michael Vendrasco

Investigated microstructures/microtextures of samples collected at Little Hot Creek, California, using a scanning electron microscope (SEM), for textural biosignatures to understand the role of biological processes in the morphology of siliceous sinters at the site. Conducted a review of relevant scientific literature on diagnostic structural biosignatures in geyserite and other hydrothermally deposited sediment. Produced teaching aids and annotated bibliography.

Caltech Connections Undergraduate Research Program, Caltech — Feb-Jul 2022

Research Assistant — *Pasadena, CA*
Supervisor: Dr. Sadie Dutton (PhD '23) under the Blake Research Group

Hypothesized and modeled alcohol:water hexamer geometries using Avogadro and Gaussian modeling programs. Identified an asymmetric hexamer in laboratory spectroscopic data.

I presented these results as a poster at Caltech Connections Symposium, and SoCal Undergraduate Chemistry Research Symposium, University of California Irvine.

Planetary and Exoplanetary Atmospheres Group, JPL — Jan-Jun 2022

Maximizing Student Potential in STEM (MSP) Intern — *Pasadena, CA*
Supervisor: Dr. Glenn Orton

Continued previous JPL internship project to archive observational data of Jupiter in the mid-infrared with the Planetary Data System (PDS). Developed an open-source, pip-installable python package to automate creation and correction of

data labels, and wrote documentation for future interns to utilize the software. Submitted the digital archives of ground-based observations of Jupiter to the PDS.

Planetary and Exoplanetary Atmospheres Group, JPL Sep-Dec 2021

Student Independent Research Internship (SIRI) Research Assistant *Pasadena, CA*
Supervisor: Dr. Glenn Orton

Archived digital files of ground-based observations of Jupiter in the mid-infrared in support of the Juno mission for the PDS. Wrote Python code and utilized Bash scripts to automate creation and correction of data labels.

Publications

B.P. Blakley, W.M. Grundy, J.K. Steckloff, S.P. Tan, J. Hanley, A.E. Engle, S.C. Tegler, G.E. Lindberg, S.M. Raposa, K.J. Koga, and C.L. Thieberger (2024), The equilibrium vapor pressures of ammonia and oxygen ices at outer solar system temperatures. *Planetary and Space Science*, 244, p.105863.

B.L. Ehlmann, R.L. Klima, C.C. Seybold, A.T. Klesh, C.L. Bennett, N. Bowles, J.L. Dickson, K.D. Hanna, C.S. Edwards, R.O. Green, M.A. House, C.M. Pieters, D.R. Thompson, J.D. Baker, J. Bellerose, D.L. Blaney, A.M. Dapremont, H.H. Eshbaugh, R. Evans, E. Furlan, K. Gauld, N. Habib, S. Islas, G. Lantoine, J.K. Miura, E. Scire, K. Shirley, T.J. Warren, K.A. Wilk, J.S. Adler, A.A. Ascione, **B.P. Blakley**, S.B. Fajardo-Acosta, E.R. Felder, C. Haberle, M.J. Hauge, D.A. Imel, L.M. Lee, J.A. Llamas, R.W. Miller, D. McDonald, S. Pooley, M. Sondheim, W.R. Williamson and the Lunar Trailblazer Team (expected 2026), The Lunar Trailblazer Mission: Science Motivation and Implementation of a Pioneering 2 Small Satellite for Lunar Water and Lunar Geology in the NASA SIMPLEx program. (Submitted)

W.M. Grundy, S.C. Tegler, J.K. Steckloff, S.P. Tan, , M.J. Loeffler, A.V. Jasko, K.J. Koga, **B.P. Blakley**, S.M. Raposa, A.E. Engle, C.L. Thieberger, J. Hanley, G.E. Lindberg, M.D. Gomez, and A.O. Madden-Watson (2023), Laboratory measurement of volatile ice vapor pressures with a quartz crystal microbalance. *Icarus*, p.115767

Presentations & Conference Proceedings

B.P. Blakley, W.M. Grundy, S.C. Tegler, S.P. Tan, A.N. Morgan, A.E. Engle, C.L. Thieberger (2023), Study of Uranian Satellite Volatiles. DPS LV, Abstract #343, oral presentation.

B.P. Blakley, B.L. Ehlmann, R.N. Greenberger, V.V. Kachmar, E.S. Sosa (2023), Laboratory Reflectance Study of Water-Ice-Regolith Mixtures for Modeling of Lunar Water Scenarios. LPSC LIV, Abstract #2578, poster.

B.P. Blakley, B.L. Ehlmann, R.N. Greenberger, V.V. Kachmar, E.S. Sosa
Laboratory Reflectance Study of Water-Ice-Regolith Mixtures for Modeling of Lunar Water Scenarios.
Mar 2023, Pasadena City College, Natural Sciences Division Poster Session, poster. **Red ribbon award.**

B.P. Blakley, S.E. Dutton, G.A. Blake
Identifying hexamer structures in alcohol:water mixes.
Jun 2022, Caltech Connections Symposium, poster.
Aug 2022, SoCal Undergraduate Chemistry Research Symposium, University of California Irvine, poster.

Trainings & Workshops Attended

Modern SEM Techniques Workshop — Aug 2025

Lunar and Planetary Institute — *Houston, TX*

Engage Audiences with NASA's Science Activation Program (Splinter Meeting) — October 2024

American Astronomical Society Division of Planetary Science — *Houstin, TX*

Code/Astro: A Software Engineering Workshop for Astronomy — June 2021

Caltech — *Pasadena, CA*

Teaching & Service

Self-publish Your Own Science "Zine" Workshop — 2025

Instructor/Workshop leader

Designed and ran a science communication workshop to teach faculty and other graduate students how to make a self-published photocopied booklet (*zine*). Participants (1) learned a new medium for science communication, (2) practiced translating research topics and scientific knowledge into language appropriate for a broad audience, (3) practiced distilling scientific research into an approachable "science story", and (4) practiced communicating ideas visually. Participants were then invited to distribute their finished zines for free around the community.

Planetary People Accomplishing and Learning Side-by-side (Planetary PALS) — 2025

Chair

Coordinating and leading weekly meetings for all Planetary Science graduate students and postdocs in the Earth & Planetary Department. Facilitated co-working and co-writing hours, provided opportunities for practice and feedback on presentations, applications, and article drafts, as well as peer support for mental health and professional development..

Caltech Connections—Astronomy Research Mentorship Program — 2022-2024

Undergraduate Liaison, Small-group Facilitators

Worked with Caltech Connections leaders Tiffany Kimoto, Scott Cushing, and Jared Ashcroft to expand the mentorship program into the Astronomy department. Designed and led a small-group pilot program to provide support for mentors and create a community of mentees. Ongoing work includes supporting the roll-out of the pilot program to all major focus areas for the 2023-2024 academic year, and training new undergraduate and graduate facilitators.

Code/Astro—Python Programming and Open-Source Software Workshop — 2022

Teaching Assistant

Pasadena City College Astronomy Club — 2021-2023

Founding Member (2021) and Club President (2022-2023)

Professional Affiliations

American Geophysical Union

Division for Planetary Sciences of the American Astronomical Society

Skills & Interests

- Laboratory & remote-sensing tools: Visible & Infrared (Vis-IR) Spectrometry, Scanning Electron Microscopy (SEM), Gas Chromatography/Mass Spectrometry (GC-MS), RADAR, LIDAR
- Computer programming: Python, Linux, MATLAB, SPICE, LaTeX, Microsoft Excel, GIS

Selected Work Experience

Everest Group — Oct 2020-May 2024

Digital Marketing Manager — *Remote Offices, US*

Everest Group is a research firm focused on strategic IT, business services, engineering services, and sourcing.

Direct efforts to optimize marketing and sales processes through automation and reporting. Bring best practices to digital marketing, A/B testing, and data analysis.

- Manage implementation projects of new technology and process improvements across revenue teams.
- Oversee marketing technology stack and train team members.
- Build and maintain end-to-end marketing and sales attribution model and real-time tracking dashboards.
- Drive increase in qualified leads through website & email user experience (UX) improvements.

Vivante Health — Jan-Aug 2020

Director of Acquisition (Growth) — *Remote Offices, US*

Vivante Health is a Software-as-a-Service (SaaS) digital healthcare organization, providing a comprehensive digestive health program for self-insured employers.

- Developed marketing automation and lead-generation strategy, including buyer persona research.
- Designed and implemented a sales and marketing engine through Hubspot and Salesforce.
- Created email nurture program, paid ads strategy, and webinar strategy.
- Managed website redesign and user-interface/experience (UI/UX) testing program.
- Hired and managed two direct reports: content marketing strategist & visual designer.

TurnTo Networks — Nov 2018-Jan 2020

Marketing Operations Director — *New York, NY & Remote*

TurnTo Networks is a B2B SaaS company, providing user-generated content solutions to ecommerce retailers and brands.

- Delivered analytics and sales reporting, implemented marketing automation through Salesforce.com and Pardot.
- Promoted best practices in marketing operations, user experience, content, design, and marketing tactics.
- Acted as project manager for the marketing team, handling shifting priorities and deadlines.
- Developed and managed email marketing program and CRM database.

Campaign Marketing and Brand Manager — *Dec 2017-Nov 2018*

- Took ownership of the company website; optimized UX, growing leads by 72% month-over-month.
- Overhauled content strategy and built marketing automation program; designed A/B testing program.

DeVry Medical International/Ross University School of Veterinary Medicine — June 2014-Nov 2017

Senior Digital Marketing Specialist — *North Brunswick, NJ*

DeVry Medical International was a shared services organization, under AdTalem Global Education, provided services to AdTalem medical school holdings. Ross University School of Veterinary Medicine is an accredited DVM-granting institution, and a holding of AdTalem Global Education.

- Managed website development and optimization, UX improvement.
- Implemented and developed marketing automation program.
- Boosted email engagement rates through A/B testing, customer segmentation, and promotion of best practices.

Web Designer *June 2014-Nov 2017*

- Oversaw website optimization; streamlined development and design processes; acted as Digital Art Director.
- Researched best practices, emerging trends and opportunities, and provided recommendations to stakeholders.