

## **EDUCATION**

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**Doctor of Philosophy: Geology- Planetary Geology focus (May 2023)**

*Title of dissertation: Paleoenvironments and petrologic history of the Hartmann's Valley, Karasburg, and Sutton Island members of the Murray formation, Gale crater, Mars*  
University of Tennessee- Knoxville, Tennessee

**Master of Science: Geological Sciences (September 2015)**

*Title of thesis: Paleoceanography of the Eastern Equatorial Pacific: Insights from a new Carnegie Platform stratigraphic record*  
University of California- Santa Barbara, California

**Bachelor of Arts: Earth Sciences (September 2013)**

Boston University Honors Program- Boston, Massachusetts

## **MISSION AND MISSION-RELATED WORK EXPERIENCE**

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**Postdoctoral Fellow- Jet Propulsion Laboratory (2023-present):**

- **Mars 2020 Mission Operations-** Tactical Science Lead (October 2024-present)
  - Lead the Tactical planning meetings where science activities are planned for single- and multi-sol plans: analyze downlinked science and engineering data from the *Perseverance* rover to inform science planning, consider input from instrument teams, engineering staff, and other science team members, and make the key decisions regarding science observations and tradeoffs between desired science activities and engineering resources, all while ensuring that the scheduled Tactical timeline is met for that day.
- **Mars 2020 Mission Operations-** Tactical and Campaign Implementation Documentarian (2023-2024)
  - Participate in the Tactical and Campaign Implementation planning meetings and compile detailed notes that captured the discussions and rationale behind decisions made during science meetings.
- **Mars 2020 Mission Operations-** Tactical Support Scientist (January 2024-June 2024)
  - Aided the science lead in choosing and justifying science targets for that sol's plan, worked with instrument teams to facilitate the planning of these activities, and cataloged the planned activities in operations software programs.
- **Mars 2020 Science Collaborator-** (2023-present)
  - Conduct original research using data collected with the *Perseverance* rover payload to be published in peer-reviewed journals; co-lead and participate in weekly science working group meetings; collaborate with colleagues as a co-author; apply scientific results toward tactical and strategic planning of rover science activities; present mission results to the internal team, to the mission engineering operations team, at scientific conferences, as peer-reviewed publications, and to the public;
- **Rover-Aerial Vehicle Exploration Network Science Collaborator-** (June 2022-October 2024)
  - Participate in the development, planning, and implementation of strategic and tactical operations strategies involving separate and combined rover and helicopter mission

- architectures in Mars analog sites; present results to the internal team, at scientific conferences, and as peer-reviewed publications.
- **Jet Propulsion Laboratory Planetary Science Summer School**- Science Objective Lead and Thermal Lead (May 2024-August 2024)
  - Work with the mission formulation team at JPL as part of a competitively selected group of early career researchers to formulate a New Frontiers class mission concept for a Ceres lander. As the science objective lead for the geophysics objective, identified an analog instrument and developed a testable objective that fit within the Science Traceability Matrix. As the thermal lead, worked with a JPL thermal engineer during culminating week to develop and model the thermal components of the Ceres lander spacecraft.

#### **Graduate Student Researcher- University of Tennessee Knoxville (2016- 2023):**

- **Mars Science Laboratory Mission operations**- “Keeper of the Plan” (2017-2022)
  - Worked with Science Team Lead and instrument teams to compile science activities for numerous instruments into a single science plan fragment for that day’s planning sol during GEO Theme Group planning meetings and utilizing the MSLICE software interface; formulated a generalized science plan concept for the next upcoming planning sol.
- **Mars Science Laboratory Science Collaborator**- (2017-2023)
  - Conducted and published original research using data collected with the *Curiosity* rover payload; participated in weekly science working group meetings; collaborated with MSL colleagues as a co-author; presented mission results to the internal team, to the mission engineering operations team, at scientific conferences, as peer-reviewed publications, and to the public.

## **ADDITIONAL RELEVANT WORK EXPERIENCE**

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#### **Graduate Student Researcher- UT Knoxville (2016-2023)**

- Assisted P.I Dr. Fedo in *Curiosity* rover-based analyses of the Murray formation stratigraphy in addition to student’s own research: compiled images from key stratigraphic intervals, assisted in conducting observations and measurements, and documented and organized data in spreadsheets; regular usage of HoloLens technology; worked with earth analog samples: took images of sediment on the petrographic microscope for textural analyses and grain size measurements using Fiji software; trained new students in the lab group proper usage and care of different instruments.

#### **Graduate Teaching Assistant- UT Knoxville (2016-2023)**

- Taught weekly laboratory sections of undergraduate courses: Geology 101: The Dynamic Earth, Geology 103: Earth’s Environments; taught the lab portion of the undergraduate- and graduate-level course Geology 450: Landscapes- Earth and Elsewhere; taught the lab portion of the graduate-level course Geology 545: Siliciclastic Petrogenesis; instructed students in proper usage of transmitted light microscopes with thin sections, Augmented Reality sandbox, and flume simulator; proctored and graded examinations and term projects; lectured when Professor was unavailable;

#### **Lab Manager- Schoene and Maloof labs, Princeton University Dept. of Geosciences (2015-2016)**

- Prepared samples for geochemical analyses using standard rock cutting, polishing, drilling, and crushing techniques and heavy liquid mineral separation and magnetic separation using Frantz magnetic separator.
- Managed and ran the SERCON stable isotope ratio mass spectrometer; coordinated schedule of lab equipment usage throughout the department and with visiting researchers; trained new lab members in proper usage and management of equipment;

#### **Graduate Teaching Assistant- UCSB (2013-2015)**

- Taught weekly laboratory sections of undergraduate and graduate courses: Earth 2: Physical Geology, Earth 4: Oceanography, Earth 10: Antarctica, Earth 130: Global Warming, Environmental Studies 2: Introduction to Environmental Science; instructed students in usage of transmitted light microscopes with thin sections; graded labs and proctored and graded exams and term projects; led field trips to geologic sites of interest; lectured when Professor was unavailable;

**Lab Assistant- Murray Marine Geochemistry Lab (2012-2013)**

- Prepared Deep Sea Drilling Project sediment samples for analysis on the Inductively Coupled Plasma-Mass Spectrometer and Inductively Coupled Plasma-Emissions Spectrometer using flux-fusion and acid digestion techniques;

**Lab Assistant- Fulweiler Biogeochemistry Lab (2011-2012)**

- Processed vegetation and sediment samples for analysis of silica fluxes.

## **SERVICE AND OUTREACH**

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**Mentor-** Maria Clark Mars 2020 summer undergraduate internship “Geochemistry of the Western Fan of Jezero crater, Mars”(2025)

**Mentor-** Mars 2020 and Kutztown University NASA Here to Observe program (October 2024-February 2025)

**Invited Speaker-** Riverside Astronomical Society (October 2024)

**Invited Panelist-** PlanetInsitu24 (July 2024)

**Session co-lead-** Mars 2020 Team Meeting (July 2024)

**Working group lead-** Mars 2020 Geologic Context Working Group (2023-present)

**Guest lecturer (virtual)-** University of Washington ES 102: Space and Space Travel (May 2024)

**Grant proposal reviewer-** NASA Mars Data Analysis Program Research Opportunities in Earth and Space Sciences (January 2024-present)

**Presenter-** JPL Postdoc Research Day Poster (November 2023)

**Speaker-** JPL Postdoctoral Seminar (September 2023)

**Interviewee-** Mars Sample Return “Meet the Mars samples” videos (2023-2024)

**Mentor- JPL-** Natalie Cavallo summer undergraduate research internship (2023)

**Session co-lead-** Mars 2020 Team Meeting (July 2023)

**Invited guest speaker (virtual)-** UT Austin Soft Rock Brown Bag Seminar (2022)

**Guest lecturer (virtual)-** USF GLY 3104C, Stratigraphy and Paleontology (2021)

**Panelist-** Fernbank Science Center Mars 2020 landing (2021)

**Panel coordinator,** UTK Mars 2020 launch party (2020)

**Reviewer-** Student Spaceflight Experiment Proposals for the International Space Station (2019)

**Coordinator-** Mars Rovers booth, Bearden High School (2019)

**Invited guest lecturer-** University of Tennessee Knoxville Geology 101 (2019)

**Session co-convener-** Geological Society of America annual meeting, 2018

**Representative-** UTK booth, Geological Society of America annual and sectional meetings, 2018

**Treasurer/secretary-** UTK Geoclub (2017-2018)

**Coordinator-** Soft Rock Brown Bag seminar (2017-2018)

**Volunteer-** Can you Dig It? McClung Museum Earth Science Week (2018)

**Workshop Participant-** “Soils Under the Microscope”- Micromorphology of Soils and Paleosols (2018)

**Guest Speaker-** Vine Magnet Middle School after school Geo Tech Club (2017)

**NASA representative-** Destination Imagination Global Finals (2017, 2018)

**Volunteer-** Knoxville Gem and Minerals Show (2017)

**Volunteer-** Tennessee Science Olympiad state tournament (2017)

**Student Docent-** McClung Museum of Natural History (2017-2020)

**Coordinator-** UCSB Speakers Club (2016)

**Mentor-** UCSB- Atenas Vargas senior research project “Proxies for calcite dissolution in marine sediment core KNR195-5” CDH-36 (2015)

**President-** Boston University Geology Club (2012-2013)

## **PUBLICATIONS**

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### In-prep

**Gwizd, Samantha**, Kathryn M. Stack, Libby Ives, Sanjeev Gupta, Mike Lamb, Nic Randazzo, Natalie Cavallo, Nathan Williams, Larry Crumpler, Jim Rice, Briony Horgan, Linda Kah, Kenneth Farley, Opal Ciancolo, Cathy Quantin-Nataf, Olivier Beyssac, Alicia Vaughan, Justin Simon, Kirsten Siebach, Marion Nachon, Rachel Kronyak, Vivian Sun, Steven Sholes, David Shuster, and Jim Bell. **Depositional history of the upper sequence of the western fan: evidence for late-stage fluvial and potential igneous activity, Jezero crater, Mars.** *In-prep to be submitted to the Journal of Geophysical Research: Planets*

Plattner, Taylor, Ishan Mishra, Somrita Banerjee, KhaDeem Coumarbatch, Sophia Economou, Lucas Fifer, **Samantha Gwizd**, Sachindra Gamage, Robert Hinshaw, Theodore Karet, William Garrett Levine, Alexandra Leeming, Christina McConville, Rhianna Moore, Alan G. Sanchez, Anmol Sikka, Frank Wroblewski, James Tuttle Keane, and Alfred Edward Nash III. **A Concept for a New Frontiers Class Ceres Lander.** *In-prep to be submitted to a peer-reviewed journal.*

### Submitted

Deahn, Margaret C., Briony Horgan, Fred Calef III, Jeffrey Schroeder, Kathryn M. Stack, Nathan R. Williams, Sanna Alwmark, Candice C. Bedford, James Bell III, Michael Bramble, Ed Cloutis, Larry Crumpler, David T. Flannery, Brad Garczynski, Evan Graser, **Samantha Gwizd**, Christopher D. K. Herd, Libby Ives, Linda Kah, Athanasios Klidaras, Conner Lesh, Henry Manelski, Lisa E. Mayhew, Camden Miller, Marion Nachon, Cathy Quantin-Nataf, Nicolas Randazzo, Eleni Ravanis, Patrick Russell, Tyler Del Desto, Justin I. Simon, Joana R. C. Voigt. **Mapping the Jezero Crater Rim from Orbit: Connections to Regional Geologic Units and Context for Exploration by the Mars 2020 Rover.** *In-prep to be submitted to the Journal of Geophysical Research: Planets.*

### Accepted

Ives, Libby R. W., Kathryn M. Stack, Emily C. Geyman, Sanjeev Gupta, Gwénaél Caravaca, Kirsten L. Siebach, **Samantha Gwizd**, John P. Grotzinger, Michael P. Lamb, Joshua Huggett, Alyssa Pascuzzo, Brittan Wogsland, Nicolas Mangold, Oak Kanine, Robert Barnes, Patrick Russell, Jorge Núñez, Justin I. Simon, Benjamin P. Weiss, Aileen Yingst, Sunanda Sharma, Stéphane Le Mouélic, Woodward W. Fischer, and Nicolas Randazzo. **Sedimentology and stratigraphy of the fluvial-deltaic Skinkle Haven member, Tenby formation, Jezero crater, Mars.** *Accepted for publication in the Journal of Sedimentary Research.*

Vaughan, Alicia F., Melissa Rice, Athanasios Klidaras, Jeffrey R. Johnson, **Samantha Gwizd**, Briony Horgan, Linda C. Kah, Opal Cianciolo, Gerhard Paar, and James Bell III. **The Boulder-Rich Blocky Unit of the Western Jezero Upper Fan: Discriminating Olivine and Pyroxene Compositions and Constraining Provenance.** *Accepted for publication in the Journal of Geophysical Research: Planets.*

### Published

Achilles, Cherie N., Elizabeth B. Rampe, Robert T. Downs, Thomas F. Bristow, Doug W. Ming, Richard V. Morris, David T. Vaniman, David F. Blake, Albert S. Yen, Amy C. McAdam, Brad Sutter, Christopher M. Fedo, **Samantha Gwizd**, Lucy M. Thompson, Ralf Gellert, Shaunna M. Morrison, Allan H. Treiman, Joy A. Crisp, Travis S. J. Gabriel, Steve J. Chipera, Robert M. Hazen, Patricia I. Craig, Michael T. Thorpe, David J. Des Marais, John P. Grotzinger, Valerie M. Tu, Nicholas Castle, Gordon W. Downs, Tanya S. Peretyazhko, Richard C. Walroth, Philippe Sarrazin, and John M. Morookian. **Evidence for Multiple Diagenetic Episodes in Ancient Fluvial-Lacustrine Sedimentary Rocks in Gale Crater, Mars.** *Journal of Geophysical Research: Planets* 125, no. 8 (2020): e2019JE006295.

Carr, Brett B., Matthew Varnam, Nathan Hadland, Jahnavi Shah, Joana R. C. Voigt, **Samantha Gwizd**, Kathryn M. Stack, Fred Calef, Raymond Francis, Udit Basu, Baldur Björnsson, Colin X. Chen, Elisa Dong, Jeffrey E. Moersch, Michael Phillips, Joshua Springer, Catherine D. Neish, and Christopher W. Hamilton, 2024. **Evaluating the Use of Unoccupied Aircraft Systems (UASs) for Planetary Exploration in Mars Analog Terrain.** *The Planetary Science Journal*, 5(10), p.231: <https://doi.org/10.3847/PSJ/ad781e>

Gasda, Patrick, Nina Lanza, Pierre-Yves Meslin, Sarah Lamm, Agnès Cousin, Ryan Anderson, Olivier Forni, Elizabeth Swanner, Jonas L'Haridon, Jens Frydenvang, Nancy Thomas, **Samantha Gwizd**, Nathan Stein, Woodward Fischer, Joel Hurowitz, Dawn Sumner, Francis Rivera-Hernández, Laura Crossey, Ann Ollila, Ari Essunfeld, Horton E. Newsom, Benton Clark, Roger Wiens, Olivier Gasnault, Samuel Clegg, Sylvestre Maurice, D. M. Delapp, and Adriana Reyes-Newell. **Manganese-rich sandstones as an indicator of ancient oxic lake water conditions in Gale crater, Mars.** *Journal of Geophysical Research: Planets*, 129(5). <https://doi.org/10.1029/2023JE007923>

**Gwizd, Samantha**, Christopher Fedo, John P. Grotzinger, Steven Banham, Francis Rivera-Hernández, Sanjeev Gupta, Kathryn M. Stack, Lauren A. Edgar, Ashwin Vasavada, Joel Davis, and Linda C. Kah, 2024. **Evolution of a Lake Margin Recorded in the Sutton Island Member of the Murray Formation, Gale Crater, Mars.** *Journal of Geophysical Research: Planets*, 129(1), p.e2023JE007919.

**Gwizd, Samantha**, Christopher Fedo, John P. Grotzinger, Steven Banham, Francis Rivera-Hernández, Kathryn M. Stack, Kirsten Siebach, Michael Thorpe, Lucy Thompson, Catherine O'Connell-Cooper, and Nathan Stein. **Sedimentological and geochemical perspectives on a marginal lake environment recorded in the Hartmann's Valley and Karasburg members of the Murray formation, Gale crater, Mars.** *Journal of Geophysical Research: Planets* (2022): e2022JE007280

**Gwizd, Samantha** and David W. Lea. **A new Upper and Middle Pleistocene stratigraphic and dissolution record from the Carnegie Platform, Eastern Equatorial Pacific.** *Marine Micropaleontology* (2020): 101857.

**Gwizd, Samantha**, Kathryn M. Stack, Raymond Francis, Fred Calef, Brett B. Carr, Chris Langley, Gavin Tolometti, Jamie Graff, Þorsteinn Hanning Kristinsson, Vilhjálmur Páll Thorarensen, Eiríkur Bernharðsson, Michael Phillips, Matthew Varnam, Nathan Hadland, Jahnavi Shah, Catherine Neish, Jeffrey Moersch, Udit Basu, Joana R. C. Voigt, Christopher W. Hamilton **Comparing rover and helicopter planetary mission architectures in a Mars analog setting in Iceland.** *In press with The Planetary Science Journal.* <https://doi.org/10.3847/PSJ/ad55f4>

Jodhpurkar, Mohini J., James F. Bell III, Sanjeev Gupta, Briony Horgan, **Samantha Gwizd**, Gwenaël Caravaca, and Nicolas Randazzo, **Mapping and Characterizing the Northern Fan Deposits in Jezero Crater, Mars.** *Journal of Geophysical Research: Planets*, 129(9), (2024): <https://doi.org/2024JE008308>

Rivera-Hernández, Frances, Dawn. Y. Sumner, Nicolas Mangold, Steven. G. Banham, Kenneth. S. Edgett, Christopher. M. Fedo, Sanjeev Gupta, **Samantha Gwizd**, Ezat Heydari, Sylvestre Maurice, and Marion Nachon. **Grain Size Variations in the Murray formation: Stratigraphic Evidence for Changing Depositional Environments in Gale Crater, Mars.** *Journal of Geophysical Research: Planets* 125(2) (2020): e2019JE006230.

Scudder, Rachel P., Richard. W. Murray, Julie C. Schindlbeck, Steffen. Kutterolf, Folkmar Hauff, Michael B. Underwood, **Samantha J. Gwizd**, Rebecca. Lauzon, and Claire C. McKinley. **Geochemical approaches to the quantification of dispersed volcanic ash in marine sediment.** *Progress in Earth and Planetary Science* 3.1 (2016): 1.

Stack, Kathryn M., Raymond Francis, Fred J. Calef III, **Samantha Gwizd**, Jeffrey F. Schroeder, Joana R. C. Voigt, Thorsteinn Kristinsson, Peter Schroedl, Jahnavi Shah, Matthew Varnam, Catherine D. Neish, Reid P. Perkins, Sashank Vanga, Michael S. Bramble, Andrea Donnellan, Jeffrey T. Osterhout, Michael Tuite, Brett B. Carr, and Christopher W. Hamilton. **Simulating Science Operations for a Joint Rover-Helicopter Mission Architecture in a Mars Analog Setting.** in *Planetary Science Journal Special Focus Issue- Terrestrial Analogs for Future Mars Exploration: Results of the Rover-Aerial Vehicle Exploration Network (RAVEN) Project*, (2024): <https://doi.org/10.3847/PSJ/ade786>

Stack, Kathryn M., Libby Ives, Sanjeev Gupta, Michael Lamb, Michelle Tebolt, Gwénaël Caravaca, John Grotzinger, Patrick Russell, David Shuster, Amy Williams, Hans Amundsen, Sanna Alwmark, Andrew Annex, Robert Barnes, James Bell III, Olivier Beyssac, Tanja Bosak, Larry Crumpler, Erwin Dehouck, **Samantha Gwizd**, Keyron Hickmann-Lewis, Briony Horgan, Joel Huowitz, Hemani Kalucha, Oak Kanine, Conner Lesh, Justin Maki, Nicolas Mangold, Nicolas Randazzo, Christina Seeger, Rebecca Williams, Adrian Brown, Emily Cardarelli, Henning Dypvik, David Flannery, Jens Frydenvang, Svein-Erik Hamran, Jorge Núñez, David Paige, Justin Simon, Michael Tice, Christian Tate, and Roger Wiens. **Sedimentology and Stratigraphy of the Shenandoah Formation, Western Fan, Jezero Crater, Mars.** *Journal of Geophysical Research: Planets*, 129(2), <https://doi.org/10.1029/2023JE008187>

## SELECTED CONFERENCE ABSTRACTS

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Mangold, Nicolas, Gwénaël Caravaca, Rebecca M. E. Williams, Sanjeev Gupta, Kirsten L. Siebach, Kathryn M. Stack, ... **Samantha Gwizd**, et al. "Paleolake variations of Lake Jezero, Mars, recorded by the deltaic architecture of Jezero crater western fan." *Joint meeting of the European Planetary Sciences Congress and Division of Planetary Sciences*. Abstract #217. 2025.

Sharmili, Noshin, Kathryn M. Stack, Libby Ives, Benjam T. Cardenas, Elizabeth A. Hajek, and **Samantha Gwizd**. "Exploring the depositional and erosional morphology of Jezero crater's western fan using coupled numerical models of sediment deposition and erosion." *56<sup>th</sup> Lunar and Planetary Science Conference*. Abstract #1193. 2025.

Deahn, Margaret C., Briony Horgan, Fred Calef III, Jeffrey Schroeder, Kathryn M. Stack, Nathan R. Williams, ... **Samantha Gwizd**, et al. "Compositional diversity of the Jezero crater rim and links to regional units." *56<sup>th</sup> Lunar and Planetary Science Conference*. Abstract #1801. 2025.

**Gwizd, Samantha**, Kathryn M. Stack Morgan, Alexander Jones, Robert Barnes, Larry Crumpler, Lisa Mayhew, et. al. "Orbital perspectives on the Witch Hazel Hill region of the Jezero crater rim: evidence for structural deformation of possible Noachian basement material." *56<sup>th</sup> Lunar and Planetary Science Conference*. Abstract #1760. 2025.

Mishra, Ishan, Taylor Plattner, Somrita Banerjee, KhaDeem Coumarbatch, Sophia Economou, Lucas Fifer, **Samantha Gwizd**, et al. "A Concept for a New Frontiers Class Ceres Lander." *AGU Fall Meeting Abstracts*. 2024. Abstract #P33A-2863

Barnes, Robert, Sanjeev Gupta, Alex Jones, Briony Horgan, Brad Garzynski, Gerhard Paar, ... **Samantha Gwizd**, et al., "Gnaraloo Bay: Stratigraphic Relationships at the Apex of a Martian Fluvio-Deltaic System at Jezero Crater, Mars." *Tenth International Conference on Mars* 2024. Abstract #3450.

Deahn, Margaret C., Briony Horgan, Fred Calef III, Jeff Schroeder, Kathryn M. Stack, Nathan R. Williams, ...**Samantha Gwizd**, et al. "Jezero crater from orbit: mapping diverse targets for the Mars 2020 rover." *Tenth International Conference on Mars 2024*. Abstract #3151.

Jodhpurkar Mohini J. \*, Jim Bell III, Sanjeev Gupta, Briony Horgan, **Samantha Gwizd**, Gwenaël Caravaca, and Nicolas Randazzo, "Characterizing fan deposits across the Martian surface: Jezero's northern fan and beyond." *Tenth International Conference on Mars 2024*. Abstract #3243.

Jones, Alex J., Sanjeev Gupta, Robert Barnes, Briony Horgan, Gerhard Paar, Kathryn Stack, ...**Samantha Gwizd**, et al., "Stratigraphy and structure of the Margin unit, Jezero crater: implications for formation setting." *Tenth International Conference on Mars 2024*. Abstract #3312.

Vaughan, Alicia, Opal Cianciolo, Linda Kah, Briony Horgan, **Samantha Gwizd**, Athanasios Klidaras, et al. "Investigating the Blocky unit boulders of the western Jezero fan top using Mastcam-Z." *Tenth International Conference on Mars 2024*. Abstract #3328.

Gupta, Sanjeev, Kathryn Stack, Nicolas Mangold, Libby R. W. Ives, **Samantha Gwizd**, Gwenaël Caravaca, et al., "Sedimentary evolution of the Jezero western fan, Mars." *Tenth International Conference on Mars 2024*. Abstract #3370.

Stack, Kathryn M., Kenneth S. Edgett, Sanjeev Gupta, Steven G. Banham, Gwenaël Caravaca, Benjamin T. Cardenas, ...**Samantha Gwizd**, et al. "The Martian sedimentary rock record: recent advances in our understanding of depositional processes and environments." *Tenth International Conference on Mars 2024*. Abstract #3201.

**Gwizd, Samantha**, Kathryn Stack, Michael Lamb, Nathan Williams, Natalie Cavallo, Libby Ives, et al., "Depositional history of the blocky unit at Jezero crater, Mars." *SEPM International Sedimentary Geosciences Congress 2024*. Abstract #41.

Ives, Libby, Kathryn Stack, John Grotzinger, Michael Lamb, Emily Geyman, Robert Barnes, ...**Samantha Gwizd**, et al. "Reassessing the sedimentary depositional origin of the Jezero crater western fan's curvilinear unit." *SEPM International Sedimentary Geosciences Congress 2024*. Abstract #91.

Deahn, Margaret C., Briony Horgan, Fred Calef III, Jeffrey Schroeder, Kathryn M. Stack, Nathan R. Williams, ...**Samantha Gwizd**, et al. "An orbital photogeologic map of the Jezero crater rim: diverse targets for Mars 2020 future exploration." *55<sup>th</sup> Lunar and Planetary Science Conference*. Abstract #2302. 2024.

Gupta, Sanjeev, Kathryn M. Stack, Nicolas Mangold, Libby Ives, **Samantha Gwizd**, Gwenaël Caravaca, et al. "Going with the flow: sedimentary evolution of the Jezero western fan, Mars." *55<sup>th</sup> Lunar and Planetary Science Conference*. Abstract #2607. 2024.

**Gwizd, Samantha**, Kathryn M. Stack, Libby Ives, Sanjeev Gupta, Nicolas Randazzo, Michael Lamb, et al. "Depositional history of the upper sequence of the western fan: evidence for late-stage fluvial and potential igneous activity, Jezero crater, Mars." *55<sup>th</sup> Lunar and Planetary Science Conference*. Abstract #2117. 2024.

Vaughan, Alicia, Briony H. Horgan, Opal Cianciolo, Linda Kah, Samantha J. Gwizd, Athanasios Klidaras, et al. "Mastcam-Z investigation of the boulder (blocky) unit of the western fan top at Jezero crater, Mars." *55<sup>th</sup> Lunar and Planetary Science Conference*. Abstract #1364. 2024.

**Gwizd, Samantha**, Kathryn M. Stack, Natalie Cavallo, Nathan Williams, Michael Lamb, Elizabeth Ives, John Grotzinger, Sanjeev Gupta, Kirsten Siebach, Linda C. Kah, Opal Cianciolo, Nicolas Randazzo, and Jorge Núñez. "Hydrology and depositional history of the blocky unit at Jezero crater." Accepted in: *AGU Fall Meeting Abstracts*. 2023. Abstract #P41E-3233.

Ives, Elizabeth, Kathryn Stack, Sanjeev Gupta, John P. Grotzinger, Michael P. Lamb, Robert Barnes, Emily Geyman, Kirsten Siebach, Rebecca M. E. Williams, Linda C. Kah, **Samantha Gwizd**, Gerhard Paar, Hans E. F. Amundsen, Jorge I Núñez, Justin I. Simon, Woodward W. Fischer, David L. Shuster and Svein-Erik Hamran. "Reassessing the sedimentary depositional origin of the Jezero crater western fan's curvilinear unit: reconciling orbital and rover observations." Accepted in: *AGU Fall Meeting Abstracts*. 2023. Abstract #P43A-04

**Gwizd, Samantha**, Kathryn M. Stack, Fred Calef, Raymond Francis, Gavin Tolometti, Jamie Graff, Christopher Langley, Þorsteinn Hanning Kristinsson, Vilhjálmur Páll Thorarensen, Eiríkur Bernharðsson, Michael Phillips, Jeffrey Moersch, Udit Basu, Joana R. C. Voigt, Christopher W. Hamilton. “Rover-Aerial Vehicle Exploration Network (RAVEN): Mission planning, implementation, and results from the 2022 rover-only field campaign at Holuhraun, Iceland.” *54<sup>th</sup> Lunar and Planetary Science Conference*. Abstract #1748. 2023

**Gwizd, Samantha**, Christopher M. Fedo, John P. Grotzinger, Kenneth Edgett, Sanjeev Gupta, Kathryn M. Stack, Steven Banham, Lauren A. Edgar, and Dawn Sumner. “**Toward a greater understanding of cross-stratified facies in the Hartmann’s Valley member of the Murray formation, Gale crater, Mars.**” *Ninth International Conference on Mars*. Abstract #6183. 2019.

**Gwizd, Samantha**, Christopher M. Fedo, John P. Grotzinger, Kenneth Edgett, Frances Rivera-Hernandez, and Nathaniel W. Stein. “**Grain-size analysis and micro-scale features in Mars Hand Lens Imager (MAHLI) images from the Hartmann’s Valley member, Murray formation, Gale crater, Mars: Links to Depositional Environment.**” *Geological Society of America Abstracts with Programs*. Vol. 50. 2018.

Fedo, Christopher M., John P. Grotzinger, Juergen Schieber, Sanjeev Gupta, Christopher H. House, Kenneth Edgett, Kirsten L. Siebach., Abigail A. Fraeman, Lauren A. Edgar, Rachel E. Krynak, Linda C. Kah, **Samantha Gwizd**, and Ashwin Vasavada. “**Things are not always as they seem: detangling intersecting planar and curvi-planar veins and fractures from primary bedding in the Vera Rubin Ridge member, Murray formation, Mars.**” *Southeastern Section-67th Annual Meeting*. GSA. 2018.

**Gwizd, Samantha**, Christopher M. Fedo, John P. Grotzinger, Kenneth Edgett, Frances Rivera-Hernandez, and Nathaniel W. Stein. “**Depositional History of the Hartmann’s Valley member, Murray formation, Gale crater, Mars.**” *49<sup>th</sup> Lunar and Planetary Science Conference*. Abstract #2150. 2018.

## **SELECTED AWARDS AND FELLOWSHIPS**

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**JPL Voyager Award**, \$1000 (2024)

**Excellence in Teaching**, \$500 (2022)

**Tennessee Space Grant Scholarship**, \$350 (2020)

**UTK Planetary Geosciences Institute- Excellence in Planetary Science Research and Outreach** (2018)

**Vesta Mayo Scholarship**, \$2125, (2018)

**University of Tennessee Knoxville Chancellor’s Fellowship**, \$24,000 (2016-2020)

## **PROFESSIONAL SOCIETIES AND MEMBERSHIPS**

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Society for Sedimentary Geology

Geological Society of America

American Geophysical Union

## **LAB AND INSTRUMENT EXPERIENCE**

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**2016-2023:** Proficient in the usage of incident and reflective light petrographic microscopes for thin section analyses.

**2015-2016:** Preparation of carbonate rocks using microdrill and other sample processing instruments for analysis on SERCON mass spectrometer (trained and operated). Sample preparation of weathered basalt involving mineral separation with the usage of heavy liquids and a Frantz Magnetic Separator.

**2013-2015:** Independent sampling of R/V Knorr deep sea sediment core samples at the Woods Hole Oceanographic Institution followed by separation of calcite foraminifera from bulk sediment and preparation and analysis of calcite on GV dual inlet SIRMS.

**2012-2013:** Freeze-drying and powdering of Deep Sea Drilling Project Site 444 marine sediment samples followed by flux fusion digestion of sediment and analysis on an ICP-ES (trained and operated) and clean lab acid digestion of sediment for analysis on an ICP-MS (ran by laboratory manager).

**2011-2012:** Sample preparation of marsh sediment and vegetation for analysis of nitrate and silica

## **FIELD EXPERIENCE**

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Conducted fieldwork at the Holuhraun lava field in the Icelandic Highlands; assisted in fieldwork with sediment core extraction local Santa Barbara marshes and with fieldwork in Anza-Borrego Desert State Park; participated in field excursions in Sardinia Italy, Mojave Desert, Iceland, and areas in the northeastern U.S and southern California.