

# Gaia Stucky de Quay

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## RESEARCH OBJECTIVES

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I investigate the driving forces behind the formation, evolution, and decay of planetary surfaces. I quantify the interactions between fluvial erosion, climate, and tectonics—combining theoretical studies, field work, remote sensing, and laboratory analyses—which are recorded in landscapes over a variety of spatial and temporal scales.

## EDUCATION

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### Imperial College London

London, UK

*Doctor of Philosophy (PhD) in Earth & Planetary Science*

Oct. 2014 – Feb. 2019

- Dissertation Title: “Uplift and erosion histories from ancient and modern landscapes: examples from the North Sea, Iceland, and Mars”
- Advisor: Dr. Gareth Roberts

### University College London (UCL)

London, UK

*Integrated Master of Science (MSci) in Earth Sciences (International Programme)*

Sep. 2010 – Aug. 2014

- Dissertation Title: “Landslides in Valles Marineris, Mars: the role of ice during emplacement”
- Advisor: Dr. Peter Grindrod
- Highest grade in department’s graduating year
- Exchange program at The University of Texas (UT) at Austin (2012 – 2013)

## PROFESSIONAL EXPERIENCE

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### Postdoctoral Fellow

*Department of Earth and Planetary Sciences | Harvard University*

Aug. 2021 - Present

Cambridge, MA, USA

### Postdoctoral Fellow

*Department of Earth, Atmospheric & Planetary Sciences | Massachusetts Inst. of Tech.*

Nov. 2021 - Present

Cambridge, MA, USA

### Postdoctoral Fellow

*Department of Geological Sciences | UT Austin*

Mar. 2019 – Aug. 2021

Austin, TX, USA

- Advisor: Dr. Timothy Goudge

### Postgraduate Researcher & Teaching Assistant

*Department of Earth Science and Engineering | Imperial*

Oct. 2014 – Feb. 2019

London, UK

### Visiting Researcher

*Department of Geophysical Sciences | The University of Chicago*

Mar. 2018 – Sep. 2018

Chicago, IL, USA

- Advisor: Dr. Edwin Kite

## RESEARCH INTERNSHIPS & SUMMER SCHOOLS

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### NASA Planetary Science Summer School (PSSS)

*Postdoc Participant | NASA Jet Propulsion Lab. (virtual)*

May 2021 – Aug. 2021

Pasadena, CA, USA

- Development of Astrobiology eXploration at Enceladus (AXE) mission; Role: Proposal Manager

### Earth Surface Process Institute (ESPIIn)

*Postdoc Participant | University of Colorado (virtual)*

June 2021

Boulder, CO, USA

- Numerical modelling: cyberinfrastructure, collaborative coding, and more

### Summer Institute on Earth-Surface Dynamics (SIEDS)

*Student Participant | St. Anthony Falls Lab., University of Minnesota*

July 2018 - Aug. 2018

Minneapolis, MN, USA

- Earthcasting and landscape evolution

### Niels Bohr Institute Research Internship

*Intern | The University of Copenhagen*

Jun. 2013 – Aug. 2013

Copenhagen, Denmark

- Earth-like exoplanet detection using microlensing
- Advisor: Prof. Uffe Jørgensen

**Department of Oceanography & Fisheries Research Internship**

Jun. 2012 – Aug. 2012

*Intern | The University of Azores**Horta, Portugal*

- Field and lab-based oceanography
- Advisor: Dr. Ricardo Serrão

**Ciência Viva Summer Program**

Jul. 2010 – Aug. 2010

*Intern | Portuguese Center for Geohistory and Prehistory**Sesimbra, Portugal*

- Field paleontology (fish and dinosaur fossils)
- Advisor: Prof. Silvério Figueiredo

**Center for Astrophysics Summer School**

Jul. 2008

*High School Participant | University of Porto**Porto, Portugal*

- Theoretical and practical observational astronomy

**GRANTS, FELLOWSHIPS, & PROJECT FUNDING*****Total amount awarded to date = \$█████ directly to Stucky de Quay****Active / Selected [n=7]:***Mars Data Analysis Program (MDAP) Grant | NASA**

2022 – 2025

- Role: Science PI (proposal written by Stucky de Quay)
- Project title: “Spatio-temporal paleoclimate constraints from coupled lake systems on Mars”; PI: Taylor Perron (MIT)
- Pending resubmission & rebudgetting due to institutional changes
- Total value: \$█████ (\$█████ to Stucky de Quay)

**Future Investigators in NASA Earth and Space Science and Technology Program Grant | NASA**

2021 – 2024

- Role: Collaborator
- Project title: “Exploring Controls on the Lack of Valley Network-Fed Crater Lakes on Early Mars”; PI: Timothy Goudge (UT)
- Total value: \$█████ (\$0K to Stucky de Quay)

**Reginald A. Daly Postdoctoral Fellowship | Harvard University**

2021 – 2023

- Project title: “Landscape evolution across the Solar System”
- Total value: \$█████

**Lewis & Clark Fund for Exploration and Field Research in Astrobiology | American Philosophical Society / NASA Astrobiology Institute**

2020

- Project title: “Constraints on habitability timescales during early Mars from fluvial modification in the Cape Verde archipelago” [Extended due to COVID-19]
- Total value: \$█████

**Early Career Grant | British Society for Geomorphology**

2020

- Project title: “Landscape evolution controls in volcanic ocean islands: constraints from Ribeira Grande valley, Madeira” [Extended due to COVID-19]
- Total value: \$█████

**Ralph Brown Expedition Award | Royal Geographical Society**

2020

- Project title: “Constraining river erosion rates and long-term evolution of volcanic island landscapes in the Azores and Madeira archipelagos” [Extended due to COVID-19]
- Total value: \$█████

**Research Grant | The Geological Society of London**

2020

- Project title: “Landscape evolution controls in volcanic islands: constraints from Ribeira Grande valley, Madeira” [Extended due to COVID-19]
- Total value: \$█████

*Submitted / Pending [n=2]:***Planetary Science and Technology from Analog Research Program Grant | NASA**

2022 – 2025

- Role: Co-Investigator

- Project title: “An Airborne Field Geologist: Deciphering paleoclimates and ancient environments of Mars with a stand-alone Mars Science Helicopter”; PI: Roland Brockers (JPL)
- Total value: \$█████ (\$█████ to Stucky de Quay)

### Solar System Workings Program Grant | *NASA*

2022 – 2025

- Role: Co-Investigator
- Project title: “Constraints on Hydrological Climates on Ancient Mars from Formation and Persistence of Crater Paleolakes”; PI: Michael Mischna (JPL)
- Total value: \$█████ (\$█████ to Stucky de Quay)

Completed [ $n=7$ ]:

### COVID Augmentations and Funded Extensions | *NASA*

2021

- Role: Postdoctoral Associate
- Project title: “Funded Extension for Hydrology of Lake Overflow Flood Events on Early Mars”; PI: Timothy Goudge (UT)
- Total value: \$█████ (\$█████ to Stucky de Quay)

### Seed Grant | *UT Center for Planetary Systems Habitability*

2020

- Project title: “Quantifying paleoclimate and habitability timescales from coupled lake systems on Mars”
- Total value: \$█████

### Postdoctoral Fellowship | *UT Austin*

2019 – 2021

- Project title: “Geology and geomorphology of early Mars”
- Total value: \$█████ (50% funded through a NASA MDAP grant)

### Visiting studentship | *University of Chicago*

2018

- Project title: “Formation and evolution of crater rim alcoves and alluvial fans on Mars”
- Total value: \$█████

### Fieldwork Grant | *Grantham Institute for Climate Change & the Environment*

2017

- Project title: “Landscape evolution in northeast Iceland”
- Total value: \$█████

### Iain Hillier Academic Grant | *London Petrophysical Society*

2016

- Project title: “Vertical motions from ancient buried landscapes”
- Total value: \$█████

### Science and Solutions for a Changing Planet Studentship | *NERC*

2014 – 2019

- Project title: “Uplift & erosion histories of ancient buried landscapes: Constraining the evolution of the Icelandic plume”
- Total value: \$█████

## PUBLICATIONS

Profiles: [Google Scholar](#) | [ResearchGate](#) | [ORCID](#)

1. Goudge, T. A., Morgan, A. M., **Stucky de Quay, G.**, and Fassett, C. I. (2021). The importance of lake breach floods for valley incision on early Mars. *Nature*, 597, 645–649, DOI: [10.1038/s41586-021-03860-1](https://doi.org/10.1038/s41586-021-03860-1).
2. **Stucky de Quay, G.**, Goudge, T. A., Kite, E. S., Fassett, C. I., & Guzewich, S. D. (2021). Limits on runoff episode duration for early Mars: Integrating lake hydrology and climate models. *Geophysical Research Letters*, 48, e2021GL093523, DOI: [10.1029/2021GL093523](https://doi.org/10.1029/2021GL093523).
3. **Stucky de Quay, G.**, Goudge, T. A., and Fassett, C. I. (2020). Global precipitation and aridity constraints from paleolakes on early Mars, *Geology*, 48(12), DOI: [10.1130/G47886.1](https://doi.org/10.1130/G47886.1).
4. **Stucky de Quay, G.**, Kite, E. S., and Mayer, D. P. (2019b). Prolonged fluvial activity from channel-fan systems on Mars, *JGR-Planets*, 124, DOI: [10.1029/2019JE006167](https://doi.org/10.1029/2019JE006167).
5. Kite, E. S., Mayer, D. P., Wilson, S. A., Davis, J. M., Lucas, A. S., and **Stucky de Quay, G.** (2019). Persistence of intense, climate-driven runoff late in Mars history, *Science Advances*, 5(3), eaav7710, DOI: [10.1126/sciadv.aav7710](https://doi.org/10.1126/sciadv.aav7710).

6. **Stucky de Quay, G.**, Roberts, G. G., Rood, D. H., and Fernandes, V. M. (2019a). Holocene uplift and rapid fluvial erosion of Iceland: A record of post-glacial landscape evolution, *Earth & Planetary Science Letters*, 505, 118-130, [DOI:10.1016/j.epsl.2018.10.026](https://doi.org/10.1016/j.epsl.2018.10.026).
7. **Stucky de Quay, G.**, Roberts, G. G., Watson, J. S., and Jackson, C. A.-L. (2017). Incipient mantle plume evolution: Constraints from ancient landscapes buried beneath the North Sea, *Geochemistry, Geophysics, & Geosystems*, 18, 973– 993, [DOI:10.1002/2016GC006769](https://doi.org/10.1002/2016GC006769).

## PRESENTATIONS & TALKS

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### *Conference Presentations (\*=Invited; †= Oral)*

1. Bamber, E. R., Goudge, T. A., Fassett, C. I., Osinski, G. R., **Stucky de Quay, G.** (2022). Exploring Controls on the Fluvial Breaching of Degraded Impact Craters. *53rd Lunar and Planetary Science Conference*.
2. Goudge, T. A., Morgan, A. M., **Stucky de Quay, G.**, and Fassett, C. I. (2022). Catastrophic Lake Breach Floods and the Early Mars Landscape. *53rd Lunar and Planetary Science Conference*.
3. Kite, E. S., **Stucky de Quay, G.**, et al. (2022). The Case for Paleoclimate Science from a Next-Generation Mars Helicopter. *53rd Lunar and Planetary Science Conference*.
4. Seaton, K. M., [...] **Stucky de Quay, G.**, et al. (2022). Science Objectives for a Mission Concept to Enceladus: The Astrobiology eXploration at Enceladus (AXE). *53rd Lunar and Planetary Science Conference*.
5. Seaton, K. M., [...] **Stucky de Quay, G.** et al. (2022). Mission Implementation for a New Frontiers Mission Concept: The Astrobiology eXploration at Enceladus (AXE). *53rd Lunar and Planetary Science Conference*.
6. \***Stucky de Quay, G.**, Ramalho, R., Goudge, T. A., and Morgan, A. M. (2021). Quantifying the climate-erosion relationship in young volcanic islands. *2021 AGU Fall Meeting*, Abstract EP15A-01.
7. Goudge, T. A., Morgan, A. M., **Stucky de Quay, G.**, and Fassett, C. I. (2021). Paleolake Outlet Valley Incision and the Early Mars Landscape *2021 AGU Fall Meeting*, Abstract EP22B-02.
8. †**Stucky de Quay, G.**, Goudge, T. A., and Fassett, C. I. (2020). Quantifying precipitation, aridity, and runoff-producing timescales using paleolakes on early Mars. *2020 AGU Fall Meeting*, Abstract P073-02.
9. \*†**Stucky de Quay, G.**, Goudge, T. A., and Fassett, C. I. (2020). Martian paleolake morphologies as a record of ancient precipitation and aridity regimes. *2020 GSA Annual Meeting*, Abstract 249-3.
10. †**Stucky de Quay, G.**, Goudge, T. A., and Fassett, C. I. (2020). Precipitation and aridity constraints on early Mars from globally distributed paleolakes. *51st Lunar and Planetary Science Conference*, Abstract 1410 [canceled due to covid-19].
11. **Stucky de Quay, G.** and Kite, E. S. (2019). Alluvial fan and source channel systems on Mars: fluvial timescales and ancient climate. *9th International Conference on Early Mars*, Abstract 6452.
12. **Stucky de Quay, G.**, & Goudge, T. A. (2019). Global constraints on run-off depths from open-and closed-basin paleolakes on Mars. *2019 AGU Fall Meeting*, Abstract EP21E-2203.
13. **Stucky de Quay, G.**, Kite, E. S., and Mayer, D. P. (2018). Formation and evolution of crater rim alcoves and alluvial fans on Mars. *2018 AGU Fall Meeting*, Abstract EP23F-2388.
14. Rood, D. H., **Stucky de Quay, G.**, Roberts, G. G., and Fernandes, V. M. (2018). The modern Icelandic landscape: a record of regional uplift from progressive fluvial erosion histories. *2018 AGU Fall Meeting*, Abstract EP51D-1855.
15. \*†**Stucky de Quay, G.**, Rood, D. H., Roberts, G. G., and Fernandes, V. M. (2017). Landscape evolution from remote sensing of drainage patterns: examples from north Iceland. *2017 RSPSoc Annual Meeting*.

16. **Stucky de Quay, G.**, Roberts, G. G., Jackson, C. A. L., and Watson, J. S. (2017). Vertical motions from ancient buried landscapes: Constraints on Icelandic plume evolution. *2017 AGU Fall Meeting*, Abstract EP33A-1909.
17. **Stucky de Quay, G.**, Roberts, G. G., Watson, J. S., and Jackson, C. A. L. (2017). History of the incipient Icelandic plume: Observations from ancient buried landscapes. *2017 EGU General Assembly*, Abstract 5036.
18. **Stucky de Quay, G.**, Roberts, G. G., and Jackson, C. A. L. (2016). Vertical plate motions from ancient buried landscapes: Constraints on Icelandic plume evolution. *2016 AGU Fall Meeting*, Abstract EP53B-0939.
19. **Stucky de Quay, G.**, and P. M. Grindrod. (2014). A complete catalogue of landslides in Valles Marineris, Mars. *45th Lunar and Planetary Science Conference*, Abstract 1601.

#### *Invited Lectures*

<b>Florida Atlantic University</b>   <i>Department of Geosciences Colloquium</i>	2022
<b>University of Washington</b>   <i>Earth and Space Science Colloquium</i>	2021
<b>Denison University</b>   <i>UG Course on Geology of the Solar System</i>	2021
<b>Stanford University</b>   <i>Stanford Earth Special Seminar</i>	2021
<b>University of Southern California</b>   <i>Department of Earth Sciences Seminar</i>	2021
<b>MIT</b>   <i>Earth, Atmospheric, and Planetary Science Special Department Lecture</i>	2021
<b>International Association for Geomorphology</b>   <i>International Geomorphology Week Webinar</i>	2021
<b>Rice University</b>   <i>Earth, Environmental, and Planetary Science Seminar</i>	2021
<b>Dartmouth University</b>   <i>Earth Sciences Seminar</i>	2021
<b>Harvard University</b>   <i>Earth &amp; Planetary Sciences Special Seminar</i>	2021
<b>University of Cambridge</b>   <i>Bullard Laboratory Seminar</i>	2021
<b>Earth Science Club of Northern Illinois</b>   <i>General Meeting</i>	2021
<b>Colorado College</b>   <i>UG Course on Regional Geology of Iceland</i>	2021
<b>Princeton University</b>   <i>Physical Sciences Seminar</i>	2020
<b>House of Fossils, Santa Maria Island</b>   <i>Workshop Lecture Cycle</i>	2020
<b>Rice University</b>   <i>Sedimentology Seminar</i>	2020
<b>UT Austin</b>   <i>Soft Rock Seminar</i>	2019
<b>Imperial College London</b>   <i>Surface Processes Meeting</i>	2018
<b>California Institute of Technology</b>   <i>Geoclub Seminar</i>	2017
<b>Equinor</b>   <i>Source-to-Sink Workshop</i>	2017
<b>Imperial College London</b>   <i>Earth &amp; Planets Seminar</i>	2016
<b>The Geological Society of London</b>   <i>London Petrophysical Society Meeting</i>	2016
<b>Natural History Museum, London</b>   <i>NERC Doctoral Training Programme Meeting</i>	2015
<b>Imperial College London</b>   <i>Petroleum Exploration Group Meeting</i>	2015
<b>University College London</b>   <i>Astrobiology and Planetary Exploration Meeting</i>	2014

#### ACADEMIC AWARDS

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<b>Research Grant Honorable Mention</b>   <i>Graduate Women in Science</i>	2020
<b>Dean's List</b>   <i>UCL Maths and Physical Sciences Faculty</i>	2014
<b>Morris Prize</b>   <i>UCL Earth Sciences</i>	2014
<b>Hollingworth Prize</b>   <i>UCL Earth Sciences</i>	2012

## TEACHING EXPERIENCE

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The following courses were taught at Imperial College London. Non-field courses required 2-4 hours of weekly work for one term (10 weeks) per academic year. Field courses required 4 and 10 full days for Wales and Spain trips, respectively (course codes: Earth Science and Engineering = ESE; postgraduate courses = PG):

<b>Field Geology 1 (ESE 2.14)</b>   <i>Field Guide (Spain)</i>	2017
<b>Introduction to Field Geology (ESE 2.05)</b>   <i>Teaching Assistant</i>	2017
<b>Surface Processes (ESE 2.27)</b>   <i>Teaching Assistant</i>	2017
<b>Field Geomorphology (ESE 5.04)</b>   <i>Field Guide (Wales)</i>	2017
<b>Geomorphology (ESE 5.26)</b>   <i>Teaching Assistant</i>	2017
<b>Structural Geology 3 (ESE 4.14)</b>   <i>Teaching Assistant</i>	2016 – 2017
<b>Basin Analysis (ESE 5.12)</b>   <i>Teaching Assistant</i>	2017
<b>Seismic Techniques (ESE PG13)</b>   <i>Teaching Assistant</i>	2016
<b>Sedimentary Geology (ESE 3.14)</b>   <i>Teaching Assistant</i>	2016
<b>Solar System Geoscience (ESE 4.25)</b>   <i>Teaching Assistant</i>	2016

*Guest Lectures:*

<b>Geology of the Solar System</b>   <i>Denison Univeristy</i>	2021
<b>Regional Geology of Iceland</b>   <i>Colorado College</i>	2021
<b>Field Geomorphology</b>   <i>Imperial College London</i>	2017

## MENTORING EXPERIENCE

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<b>Irineo Sanchez</b>	2020 – 2021
<i>Undegraduate Honors Thesis</i>	<i>UT Austin</i>
<ul style="list-style-type: none"><li>• Project title: “Observing longitudinal profiles of amphitheater channels on Mars and the implications for their formation”</li><li>• Commitee Member</li></ul>	
<b>Junwoo Kim</b>	2020 – 2021
<i>Undegraduate Capstone Research Project</i>	<i>UT Austin</i>
<ul style="list-style-type: none"><li>• Project title: “Volcanic island channel topography as a climate record”</li></ul>	
<b>Jason Mendez</b>	2020
<i>Undegraduate Geo-VISION Research Project</i>	<i>UT Austin</i>
<ul style="list-style-type: none"><li>• Project title: “Controls on the evolution of volcanic island valleys: examples from the Cape Verde archipelago”</li></ul>	
<b>Marianne Coholich</b>	2019 – 2020
<i>Undegraduate Honors Thesis</i>	<i>UT Austin</i>
<ul style="list-style-type: none"><li>• Project title: “The controls of martian crater size and rim geometry on outflow channel morphology”</li><li>• Commitee Member</li></ul>	
<b>Thaïs Bendixen</b>	2019 – 2020
<i>MSc Thesis</i>	<i>University of Potsdam</i>
<ul style="list-style-type: none"><li>• Project title: “Modeling lahar runout distances and trajectories in Chaitén and Michinmahuida”</li></ul>	
<b>Alex Leggett</b>	2017 – 2018
<i>MSci Thesis</i>	<i>Imperial</i>
<ul style="list-style-type: none"><li>• Project title: “Assessing the influence of fault interaction on seismic hazards in the Hat Creek Graben, California, USA, using <sup>3</sup>He cosmogenic dating”</li></ul>	
<b>Jordan Weddepohl</b>	2017 – 2018
<i>MSci Thesis</i>	<i>Imperial</i>
<ul style="list-style-type: none"><li>• Project title: “Slip-rate and displacement-scaling of Iceland’s Húsavík-Flatly fault and Theystarykir fissure swarm using <sup>3</sup>He cosmogenic dating”</li></ul>	
<b>Danqing Liu</b>	2016 – 2017
<i>MSc Thesis</i>	<i>Imperial</i>
<ul style="list-style-type: none"><li>• Project title: “A history of vertical motions and sedimentary flux in the North Sea”</li></ul>	

## PROFESSIONAL SERVICE & OUTREACH

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<b>Peer Reviewer</b> <i>Nature Communications • ESPL • Icarus • Planetary &amp; Space Science Journal • GRSL, etc.</i>	2020, 2021
<b>Moderator</b> <i>Atlantic International Research Center (e.g., ‘Science Debates in Portuguese’ webinar)</i>	2020, 2021
<b>Panelist, External Reviewer</b> <i>3 × NASA ROSES (Research Opportunities in Space and Earth Science)</i>	2020 – Present
<b>Judge</b> <i>Jackson School of Geoscience Research Symposium • AGU Outstanding Student Presentation Award</i>	2020 – Present
<b>Student Ambassador</b> <i>Grantham Institute – Climate Change and the Environment</i>	2016 – 2018
<b>Author</b> <i>I, Science (Imperial student magazine)</i>	2016 – 2017
<b>Volunteer</b> <i>Science Museum Lates • Imperial Festival • UCL Geology Festival • European Planetary Science Congress</i>	2013 – 2017
<b>Newsletter/Website Manager</b> <i>Basin Research Group, Imperial</i>	2015 – 2017

## KEY TECHNICAL SKILLS

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**Fieldwork skills** | Fluvial geomorphic mapping, sampling, and monitoring of erosional (Maryland, USA, 2018) and depositional (Texas, USA, 2019) landforms and processes • stratigraphic and outcrop analyses (Spain, 2012) • mountain building and tectonic geomorphology (Italy, 2012) • volcanic stratigraphy and hydro-magmatic interactions (Iceland, 2017) • impact structures (Germany, 2014) • glacial landforms (Wales, 2017) • coastal geomorphology and oceanography (Azores, 2020) • licensed Federal Aviation Association pilot for unmanned aerial systems (i.e., drones) with over 50 hrs of flight experience in scientific missions • PADI Advanced Open Water diving licence.

**Data analysis and computer skills** | LINUX Shell Scripting • ESRI’s ArcGIS suite (including ArcMap, ArcScene, etc.) • Python • Generic Mapping Tools (GMT) • Schlumberger’s Petrel • Adobe Creative Suite (including Photoshop, Illustrator, etc.) • L<sup>A</sup>T<sub>E</sub>X • Microsoft Office (including Word, Excel, PowerPoint, etc.) • MATLAB • Ames Stereo Pipeline • Pix4Dmapper • AgiSoft PhotoScan • Drone Deploy • ENVI/IDL.

**Numerical modeling and theoretical skills** | Forward and inverse fluvial models • open-source landscape evolution models (e.g., Landlab, Badlands) • automated drainage extraction • sediment transport and deposition models • cosmogenic isotope calculation • bedrock erosion and columnar basalt stability analyses • hydrological balancing and limnology • postglacial and denudation isostasy • landslide modelling and hazards • simple mantle advective models.

**Laboratory skills** | splitting, crushing, milling, and sieving of rocks to multiple sizes (100-250  $\mu\text{m}$ ) • magnetic mineral separation • heavy mineral density separation • acid etching (sonication) • washing and drying samples • microscopy analyses • removing mineral fluid inclusions • setting up, calibrating, and using noble gas mass spectrometry • using gas chromatography mass spectrometry.

## MEDIA COVERAGE

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*Selected articles:*

<b>New Scientist</b> <i>The deepest canyons on Mars were rapidly formed by devastating floods &lt;<a href="#">url</a>&gt;</i>	2021
<b>Forbes</b> <i>A Blue ‘Red Planet?’ Rain and snow storms may have soaked the Martian surface, say scientists &lt;<a href="#">url</a>&gt;</i>	2020
<b>National Geographic</b> <i>Rivers may have flowed on Mars for longer than anyone realized &lt;<a href="#">url</a>&gt;</i>	2019
<b>CNN</b> <i>Photos reveal the recent rivers that ran across Mars &lt;<a href="#">url</a>&gt;</i>	2019

**New Scientist** 2019

*Mars used to have massive flowing rivers twice as wide as Earth's* <[url](#)>

*Interviews:*

**Voice of America** 2020

*Mars used to have rivers and rains [translated from Russian] – TV package* <[url](#)>

**Ciel et Espace** 2020

*The rains of young Mars quantified for the first time [translated from French]* <[url](#)>

**UT News** 2020

*Sustained planetwide storms may have filled lakes, rivers on ancient Mars* <[url](#)>

#### PROFESSIONAL ORGANIZATIONS & GROUPS

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**American Geophysical Union** 2016 – Present

**The British Society for Geomorphology** 2016 – Present

**GeoLatinas** 2019 – Present