

Graham Harper Edwards

Earth Sciences
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CURRENT APPOINTMENT

Dartmouth College

2021 – Present

NSF Postdoctoral Scholar (Astronomy & Astrophysics)

Planetesimal formation, giant planet migration, and stellar accretion in our solar system and beyond
(Award # 2102591)

Advisors: Profs. C. Brenhin Keller (Earth Sciences) & Elisabeth Newton (Physics & Astronomy)

EDUCATION

University of California Santa Cruz

2021

PhD: Earth Sciences

Dissertation Title: Applications of the uranium decay systems in deep time and the Quaternary: chronologic insights within planetary interiors and beneath glaciers

Committee: Profs. Terrence Blackburn (Chair, UCSC), Slawek Tulaczyk (UCSC), Myriam Telus (UCSC).

Bowdoin College Brunswick, ME

2014

Bachelor of Arts: Earth and Oceanographic Science with Honors, Classics (minor)

Summa cum Laude, ΦBK Society

PUBLICATIONS

4. T. Blackburn, G.H. Edwards, S. Tulaczyk, M. Scudder, G. Piccione, B. Hallet, J.C. Zachos, B. Cheney, N. McLean, J.T. Babbe. 2020. Ice retreat in Wilkes Basin of East Antarctica during a warm interglacial. *Nature* (583), 554-559. doi: [10.1038/s41586-020-2484-5](https://doi.org/10.1038/s41586-020-2484-5). **Press:** [National Geographic](#).
3. G.H. Edwards, T. Blackburn. 2020. Accretion of a large LL parent planetesimal from a recently formed chondrule population. *Science Advances* (6), eaay8641. doi: [10.1126/sciadv.aay8641](https://doi.org/10.1126/sciadv.aay8641)
2. G.H. Edwards, T. Blackburn. 2018. Detecting the extent of ca. 1.1 Ga Midcontinent Rift plume heating using U-Pb thermochronology of the lower crust. *Geology* (46), 911–914. doi: [10.1130/G45150.1](https://doi.org/10.1130/G45150.1)
1. G.H. Edwards. 2014. Geochemical and stratigraphic analysis of the Linnévatnet sediment record: a study of Late Holocene cirque glacier activity in Spitsbergen, Svalbard. [*Honor's Thesis*] Bowdoin College: Brunswick, ME, U.S.A. 73 pp. [[Undergraduate Research Commons](#)]

TEACHING

University of California Santa Cruz

Graduate Teaching Assistant

Spring 2021	<i>Radiogenic and Stable Isotopes</i>
Fall 2020	<i>Evolution of Earth</i>
Fall 2019	<i>Elements of Field Geology</i>
Spring 2018	<i>Geochemistry of the Solar System</i>
Winter 2018	<i>Geologic Principles</i>

Bozeman & Livingston Public Schools MT, U.S.A. 2015

Substitute Teacher

- Instructor and paraprofessional in K-12 classrooms.
- Taught students with various educational needs in diverse subjects.

Bowdoin College Brunswick, ME, U.S.A. 2012 – 2013

Laboratory Teaching Assistant

- Assisted instruction of field and laboratory activities for an introductory geoscience course.

OUTREACH & PUBLIC SERVICE

Santa Cruz Museum of Natural History 2018 – Present

Volunteer Scientist

- Created educational content and hosted activities at monthly museum events.
- Now remote, I continue to co-host monthly educational video streams covering geoscience topics. Link: [Rockin' Pop-Up Archives](#).

Geoscientists Encouraging Openness and Diversity in the Earth Sciences 2019 – 2020

(GEODES) *Student Leader*

- Organize and implement outreach events centered on promoting awareness of issues facing underrepresented groups in the geosciences and cultivating a culture of inclusivity in the UCSC Earth & Planetary Sciences Dept.
- One of six graduate student leaders responsible for the operation and development of GEODES.

Skype a Scientist 2019 – 2021

Volunteer Scientist

- Prepare educational content and host video calls with elementary classrooms.
- Teach geoscience concepts and share stories about experiences as a scientist.

Peary-MacMillan Arctic Museum Brunswick, ME, U.S.A. 2015 – 2016

Curatorial Intern

- Developed outreach programming and exhibit content.
- Supplemented undergraduate courses with lectures drawing on museum collections.
- Mentored and trained undergraduate student interns and employees.

Museum of the Rockies Bozeman, MT, U.S.A. 2015

Security Volunteer

- Answered visitors' questions and facilitating interpretive discussions about natural history exhibits.

ACADEMIC SERVICE & EXPERIENCE

Mentored Undergraduates

- Cosmo Varah-Sikes, (2019-2021), thesis (2021)
- Linh Phan (2020)
- Michael Scudder (2018-2020), thesis (2020)
- Alexander Levinson (2018)
- Paul Colosi (2017-2018)

Laboratory Research & Management

Analytical Experience:

Expert: TIMS

Proficient: MC-ICP-MS, ICP-MS, SEM-EDS

Limited: ICP-OES, XRF, XRD

W.M. Keck Isotope Facility, UCSC 2016 – 2021
Under the advisorship of lab director Prof. Terry Blackburn, I was partially responsible for the operation and maintenance of this multi-user clean lab facility, including:

- Maintenance and operation of mass spectrometers and wet chemistry labs.
- Training and supporting researchers in wet chemistry and mass spectrometric methods.
- Preparation, measurement, and reporting of isotopic analyses of geologic and biomineral material for external contracts.
- Procurement and preparation of lab consumables.

Conference Sessions

- 2017 AGU Fall Meeting | Co-Chair/Co-Convener: *Applications of Thermochronology to Understand Crustal Systems*

Seminars & Talks

Whole Earth Seminar Organizer, Department of Earth & Planetary Sciences, UCSC Spring 2019

- One of two graduate student organizers that coordinated a departmental seminar series.
- Contacted and scheduled speakers from diverse disciplines in Earth and planetary sciences.

Reviewer for: *Geochronology*

Society Affiliations: Geochemical Society, Geological Society of America, Meteoritical Society, American Geophysical Union.

AWARDS & HONORS

ARCS Foundation Scholar Award (Fellowship)	2020 – 2021
UCSC Earth & Planetary Sciences Outstanding TA Award (Honorable Mention)	2020
Aaron and Elizabeth Waters Award <i>Issued annually for the most outstanding proposal for PhD research in the UCSC Department of Earth & Planetary Sciences</i>	2019
UC Santa Cruz Regent's Fellowship	2016 – 2017
National Association of Geoscience Teachers Outstanding TA Award	2014
Grua/O'Connell Research Award	2013
Freedman Summer Research Fellowship in Coastal/Environmental Studies	2012

SELECTED CONFERENCE ABSTRACTS

A more comprehensive list of abstracts is available on [Google Scholar](#).

7. Varah-Sikes, C.T., Edwards, G.H., Blackburn, T. 2020. [Poster]: Thermal histories in Type 7 ordinary chondrites: interpreting residence in parent body using petrologic observation and Pb-Pb phosphate thermochronology. *Geological Society of America Annual Scientific Meeting*, Virtual.
6. G.H. Edwards, T. Blackburn, S. Tulaczyk, G.G. Piccione. 2019. [Poster]: U-series isotopes of silts from Taylor Valley, Antarctica: Applying comminution dating methods on polar desert tills and implications for the timeframe of valley incision. *American Geophysical Union Fall Meeting*, San Francisco, CA, U.S.A.
5. G.H. Edwards, T. Blackburn, S. Tulaczyk, G.G. Piccione. 2019. [Poster]: U-Series isotopes constrain timescale of bedrock comminution and glacial incision in Taylor Valley, Antarctica. *Goldschmidt Annual Meeting*, Barcelona, ES.
4. G.H. Edwards, T. Blackburn, G.G. Piccione. 2018. [Talk]: Cooling and disruption of the LL chondrite parent body. *Lunar and Small Bodies Graduate Forum (LunGradCon)*, Mountain View, CA, U.S.A.

3. G.H. Edwards, T. Blackburn, C.M.O'D. Alexander. 2017. [Talk]: Accretion and disruption histories of the ordinary chondrite parent bodies. *Meteoritical Society Annual Meeting*, Santa Fe, NM, U.S.A.
2. G.H. Edwards, T. Blackburn, K.V. Smit. 2017. [Poster]: Timescales of crustal cooling of the Superior Craton near Attawapiskat, Ontario, Canada, and implications for extent of Keweenawan plume heating. *American Geophysical Union Fall Meeting*, New Orleans, LA, U.S.A.
1. G.H. Edwards. 2014. [Poster]: Geochemical and stratigraphic analysis of the Linnévatnet sediment record: a provenance study of Late Holocene cirque glacier activity in Linnédalen, Spitsbergen, Svalbard. *44th International Arctic Workshop*, Boulder, CO, U.S.A.



Additional Work Experience

Server and Bartender — Trio Restaurant, Fish Creek, WI, U.S.A. — 2014.

Wildland Firefighter (Type 2) — U.S. Forest Service, Winthrop, WA, U.S.A. — 2015.

Non-Academic Interests

Rock climbing, cross-country skiing, birdwatching, breadmaking, classical history and literature.