

Graham Harper Edwards

Earth & Planetary Sciences
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EDUCATION

University of California Santa Cruz 2016 – Present

Doctoral Studies: Earth & Planetary Sciences
Candidacy Fall 2018

Proposed Dissertation Title: Applications of the uranium decay chain to diverse problems in deep time and Quaternary studies: chronologic insights into processes of planetary interiors and the bases of glaciers.

Advisor: Prof. Terrence Blackburn

Committee: Profs. Slawek Tulaczyk (*Chair*, UCSC), Myriam Telus (UCSC), Kurt Cuffey (UC Berkeley)

Bowdoin College Brunswick, ME 2014

Bachelor of Arts: Earth and Oceanographic Science with Honors, Classics minor
Summa cum Laude, Φ BK 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

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

- Create educational content and host geoscience educational activities at monthly museum events.
- During covid-19 pandemic shelter-in-place orders, prepared and performed in weekly educational video streams covering geoscience topics. Archived *Rockin' Pop-Up* videos are available [here](#).

Geoscientists Encouraging Openness and Diversity in the Earth Sciences (GEODES) *Student Leader* 2019 – 2020

- 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 – 2020
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 exhibition 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.
- Enforced museum rules as an introductory volunteer (docents required multi-year training).

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 Earth & Planetary Sciences Dept.</i>	2019
UC Santa Cruz Regent's Fellowship	2016 – 2017
National Association of Geoscience Teachers Outstanding TA Award	2014
Sarah and James Bowdoin Scholar (Dean's List)	2011 – 2013
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 isotopics 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 isotopics 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 Keweenaw 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.

ACADEMIC SERVICE & EXPERIENCE

Mentored Undergraduates

- Cosmo Varah-Sikes, (2019-2020), planned 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 – Present

Under the advisorship of lab director Prof. Terry Blackburn, I have been 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.

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.