Alexis Katherine Ault

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Curriculum vitae

Employment

Associate Professor	Department of Geosciences, Utah State University	2020-present
Assistant Professor	Department of Geosciences, Utah State University	2014-2020
NSF Postdoctoral Fellow	Department of Geosciences, University of Arizona	2012-2014

Education

PhD	University of Colorado Boulder, Geological Sciences	2012
MSc	University of New Mexico, Earth and Planetary Sciences	2007
BA	Wellesley College, Geology, Political Science	2003

Research experience

SELECT PUBLICATIONS *last 2 years; •postdoctoral, *graduate, and **undergraduate mentee*

*McDermott, R.G., **Ault, A.K.**, Caine, J.S., 2021, Dating fault damage along the eastern Denali fault zone with hematite (U-Th)/He thermochronometry, *Earth and Planetary Science Letters*, v. 563, p. 116872.

*Houser, L.M., **Ault, A.K.**, Newell, D.L., Evans, J.P., Shen, F.-A., Van Devener, B.R., 2021, Nanoscale textural and geochemical evolution of silica fault mirrors in the Wasatch fault damage zone, Utah, USA, *Geochemistry, Geophysics, Geosystems,* v. 22, doi:10.1029/2020GC009368.

Cooperdock, E.H.G., and **Ault, A.K.**, 2020, Fe-oxide (U-Th)/He thermochronology: new perspectives on faults, fluids, and heat, ***invited*** review article, *Elements,* v. 16, p. 319-324.

•Calzolari, G., **Ault, A.K.**, Hirth, G., 2020, *McDermott, R.G., 2020, Hematite (U-Th)/He thermochronometry detects asperity flash heating during laboratory earthquakes, *Geology*, v. 48, p. 509-513.

Ault, A.K., 2020, Hematite fault rock thermochronometry and textures inform fault zone processes, ***invited*** article, *Journal of Structural Geology,* v. 133, p. 104002.

Ault, A.K., **Jensen, J.L., *McDermott, R.G., Shen, F-A., Van Devener, B.R., 2019, Nanoscale evidence for temperature-induced transient rheology and post-seismic fault healing, *Geology*, v.47, p.1203-1207.

Ault, A.K., Gautheron, C., King, G., 2019, Innovations in (U-Th)/He, fission track, and trapped charge thermochronometry with applications to earthquakes, weathering, surface-mantle connections, and growth and decay of mountains, ***invited*** article for *AGU Centennial, Tectonics*, v. 38, p. 3705-3739.

*McDermott, R.G., **Ault, A.K.**, Caine, J.S., Thomson, S.N., 2019, Thermotectonic history of the Kluane Ranges and evolution of the eastern Denali fault zone in southwest Yukon, Canada, *Tectonics*, v. 38, p. 2983-3010.

And 19 other publications and three manuscripts in review led by students and postdoctoral fellows.

GRANT FUNDING *active in last 3 years*

2021-2024: **NSF EAR-2039727,** Tectonics Program**,** Collaborative Research: Identifying shallow slow slip using hematite textures and (U-Th)/He thermochronometry of exhumed and experimental faults, lead PI, with Co-PI G. Hirth (Brown Univ.), $591,131

2020-2021: **SCEC 20153,** Southern California Earthquake Center, Creating a multi-proxy approach to robustly capture earthquake temperature rise at the Punchbowl fault, lead PI with co-PIs H. Savage (UCSC) and P. Polissar (UCSC), $34,998

2018-2021: **NSF MRI-1826921**, Acquisition of a noble gas multi-collector mass spectrometer for geochronology and geochemistry research, co-I, with PI P. Reiners (UA) and Co-PIs G. Gehrels (UA), T. Swindle (UA), and L. Ma (UTEP), $880,722

2017-2019: **SCEC 17164,** Southern California Earthquake Center**,** Detecting asperity flash heating on hematite faults with laboratory experiments and hematite (U-Th)/He thermochronometry, sole PI, $20,000

2017-2022: **NSF EAR-1654628**, CAREER: Thermochronometric and textural signatures of fault damage zone microseismicity and igniting middle school student interest in earthquake science, sole PI, $630,679

2014-2019: **NSF EAR-1419828,** Tectonics Program, Collaborative Research: Development of hematite (U-Th)/He chronology to directly date fault slip and ancient seismicity, lead PI, with co-PIs J. Evans (USU), P. Reiners (UA), and D. Shuster (BGC), $487,365

And an additional $190,000 in extramural grants from NSF and SCEC in 2012-2014.

INVITED OR KEYNOTE TALKS AT CONFERENCES *(n = 8)*
2018: Gordon Research Conference on Rock Deformation, NH; Structural Geology & Tectonics Forum, AZ; ***2017***: GSA Annual Meeting, WA; Goldschmidt, Paris; Geological Assoc. of Canada-Mineralogical Assoc. of Canada; ***2015***: Structural Geology & Tectonics Division 35th Anniversary Symposium, GSA Annual Meeting, MD; AGU Fall Meeting; ***2014***: Structural Geology & Tectonics Forum, CO; Goldschmidt, CA

INVITED DEPARTMENTAL SEMINARS *(n = 27 total, in last 7 years listed below)*
2021: UC Santa Cruz, Univ. Minnesota, UC Davis, Univ. Washington ***2020***: Colorado College, UT Austin, San Jose State, Univ. Utah; ***2019***: Univ. Southern California, Brigham Young Univ., New Mexico Tech; ***2018***: UArizona, Cornell, Wyoming; ***2017***: Univ. Wisconsin, Weber State Univ.; ***2016***: Wyoming, Univ. Illinois at Champaign-Urbana; ***2014***: Idaho State, Utah Valley Univ., Wellesley College, UC Berkeley

POSTDOCTORAL MENTOR *(n = 3)*
Jacky Baughman, June 2020-2022 (Bowdoin College; PhD, University of Colorado, Boulder)
Margo Odlum, May 2020-present, ***NSF Postdoctoral Fellow*** (PhD, University of Texas, Austin)
Gabriele Calzolari, 2017-2019 (PhD, Universita Roma Tre)

GRADUATE ADVISOR *(n = 5)*
Ema Armstrong, MSc, 2019-present and PhD starting Fall 2021, ***NSF Graduate Research Fellow***; Alexandra DiMonte, MSc, 2019-present; Robert McDermott, PhD, 2014-2020, Presidential Doctoral Research Fellow; Leah Houser, MSc, 2017-2019; Michael Channer, MSc, 2014-2017

THESIS SUPERVISORY COMMITTEES – *PhD (3), MSc (13)*

UNDERGRADUATE RESEARCH ASSISTANTS *(n = 5)*
Ryker Tracy (2020-2021); Madison Taylor (2018-2020; 2019 Peak Research Fellow); Kelsey Wetzel (2017-2018); Christopher Ammon (2016); Jordan Jensen (2015-2016; College of Science Scholar of the Year; ***NSF Graduate Research Fellowship 2018*** and Honorable Mention 2016); Ashley Provow (2015)

Honors and awards

2018	Early Career Award, International Standing Committee on Thermochronology
2018	USU College of Science Researcher of the Year
2017	NSF CAREER Award
2012-2014	NSF Postdoctoral Fellowship
2005-2010	NSF Graduate Research Fellowship

Memberships

American Geophysical Union
Geological Society of America

Community engagement and synergistic activities

(1) ***Developing middle school STEM identities and earthquake education*** Creator and leader of field, laboratory, and classroom education activities with 5th and 6th grade students from Promontory School of Expeditionary Learning (Perry, UT). Spring 2016, Falls 2016, 2017, 2018, 2019, 2021. Featured in NSF EAR Newsletter, https://www.nsf.gov/news/news_summ.jsp?cntn_id=245441&org=EAR

(2) ***Mentoring of underrepresented groups*** Supervisor and lab host of undergraduates in the Native American Student Mentoring Program from USU Blanding, May 2016 and May 2017.

(3) ***Public engagement in science*** Invited public speaker for ***2019***: *USU Sunrise Session*, Salt Lake City, UT; *Sunday Under the Trees*, USU Summer Citizens Program (also 2016); USU Center for Women and Gender; ***2018***: USU, Emeriti Faculty Foundation; Geologists of Jackson Hole, WY; USU Board of Trustees Research Foundation; ***2017***: Utah Geological Association.

(4) ***Referee for agencies and journals*** Reviewer of ~12-15 manuscripts/year for peer-reviewed journals; NSF Tectonics and Geoinformatics Program reviewer; 3 NSF panels including GRFP and Tectonics.

(5) ***Service to geoscience community*** Convener and chair of multiple sessions at ***AGU*** (2) and ***GSA*** (4)

(6) ***Committee service*** Thermo 2021 Organizing Committee for biennial Thermochronology Conference (2019-present); GSA Cordillera-Rocky Mountain section meeting co-chair (2022); GSA Rocky Mountain Section Executive Board Member-at-Large (2018-present); USU Microscopy Core Facility Faculty Advisory Board (2015-present); Chair of two search committees (USU; 2015, 2019-2020).

(7) ***Career development*** Creator of *Preparing and Applying for Graduate School in Earth Sciences*, October 2015 and 2016, USU. Invited speaker at Wellesley College alumnae career panel (2014).