

Curriculum Vitae

CHRISTINE SMITH SIDDOWAY

Professor of Geology
Department of Geology, The Colorado College
Colorado Springs, Colorado 80903 U.S.A.
Tel. 719-389-6717(6621) FAX: 719-389-6910
<http://sites.coloradocollege.edu/csiddoway/>
ORCID: 0000-0003-0478-6138

ACADEMIC BACKGROUND

- 1995 Ph.D., University of California-Santa Barbara.
1989 M.S., University of Arizona, Tucson.
1984 B.A., Carleton College, Northfield, Minnesota.

RESEARCH INTERESTS:

Tectonic evolution of West Antarctica, Subglacial bedrock geology and deglaciation of Amundsen Sea region, Antarctica; Rocky Mountains structures, Precambrian geology of western North America, sustainable energy initiatives for Colorado College campus

TEACHING EMPHASES: *Structural geology and tectonics, Geological field methods, Physical geology*

Research metrics: [Research Gate](#) [Google Scholar](#) [OrCID iD](#)

Media coverage: [The Conversation](#) [Science News](#) [ArsTechnica](#) [Wikipedia](#)

PROFESSIONAL APPOINTMENTS

- 2009- Professor of Geology, Colorado College
2001-2007 Associate professor of Geology, Colorado College, Colorado Springs, CO.
2006 (5 mo.) Visiting Scientist, Lamont-Doherty Earth Observatory, Columbia University
2002-2003 Visiting professor, Department of Geosciences, University of Minnesota.
1996-2001 Assistant professor, Colorado College, Colorado Springs, CO.
1995-96 Fulbright Post-doctoral Research Fellow, Università di Siena, Italy.

FIELD AND RESEARCH EXPERIENCE, PAST 10 YRS.

- 2019 - 21 International Ocean Discovery Program (IODP) Amundsen Sea West Antarctic Expedition 379 and Iceberg Alley Expedition 382

Ongoing: Principal investigator, U.S. Antarctic Program; funding from NSF Office of Polar Programs,

HONORS

- 2021 Sigma Xi Scientific Research Honor Society, elected June 2021.
2021 UC Santa Barbara Earth Sciences Distinguished Alumna, recognized June 2021.
2016-19 Thomas M. McKee Professorship in the Natural Sciences, Colorado College.
2009 Fellow, Geological Society of America

Selected Professional Activities, past 10 years

- 2017-22 Scientific Committee on Antarctic Research: INSTANT, PACE, and ACE programs
- 2017-21 Scientific Committee on Antarctic Research: GeoMAP Action Group
- 2016-19 Member-at-Large, GSA Penrose / Thompson Field Forums Committee

Professional Affiliations:

American Geophysical Union; Geological Society of America; Earth Science Womens Network; Sigma Xi; American Association for the Advancement of Science; United States Antarctic Program.

EXTRAMURAL RESEARCH GRANTS, CURRENT AND OVER PAST 10 YRS.

- 2020 Collaborative Research: [Testing the linchpin of WAIS collapse](#) with diatoms and IRD in Pleistocene and Late Pliocene strata of the Resolution Drift, Amundsen Sea, Antarctica, \$55,449, NSF 1939146, Antarctic Science.
- 2019 Collaborative Research: Ice sheet erosional Interaction with Hot geotherm ([ICI-Hot](#)) in West Antarctica, \$219,571, NSF 1917176, Antarctic Science.
- 2018 IODP 379 Amundsen Sea West Antarctic Ice Sheet History, \$67,390, Subaward GG009393 FROM OCE 14-50528, LDEO, Columbia University.
- 2015 Collaborative Research: A systems approach to understanding the **R**oss **O**cean and ice **S**helf **E**nvironment, and **T**ectonic setting **T**hrough **A**erogeophysical surveys and modeling (ROSETTA-ICE), \$164,441, 36 mo. Funded by NSF Antarctic Integrated Systems Science, www.nsf.gov/awardsearch/showAward?AWD_ID=1443497 .
- 2013 ACM Seminar in Advanced Interdisciplinary Learning: “Mediterranean Trivium: Earth, Sea & Culture.” With S. Ashley & S. Thakur, \$106,000. <http://sites.coloradocollege.edu/sail/>

REFEREED PUBLICATIONS, PAST 10 YRS.

- Courtney-Davies, L., Flowers, R.M., **Siddoway, C.**, Tasistro-Hart, A., and Macdonald, F., 2024, Hematite U-Pb Dating of Snowball Earth Meltwater Events, Proceedings of the National Academy of Science, 121 (47) e2410759121, <https://doi.org/10.1073/pnas.2410759121>.
- Fonseca Teixeira, Ludmila Maria, Laurent, O., Troch, J., **Siddoway, C.**, Tavazzani, L., Deering, C., and Bachmann, L., 2024, Tracking quartz and zircon provenance in sedimentary rocks using Ti distributions: Unlocking the volcanic-plutonic connection in old igneous systems, Earth & Planetary Science Letters, v. 643, <https://doi.org/10.1016/j.epsl.2024.118906>.
- Cox, S.C., Smith Lyttle, B., Elkind, S., **Siddoway, C.**, Morin, P., Capponi, G., Abu-Alam, T. *and 22 others*, 2023, A continent-wide detailed geological map dataset of Antarctica, *Nature Scientific Data*, **10**, 250, <https://doi.org/10.1038/s41597-023-02152-9> .
- Flowers, R. M., Ketchum, R.A., Macdonald, FA., **Siddoway, C.S.**, and Havranek, R., 2022, Existing thermochronologic data do not constrain Snowball glacial erosion below the Great Unconformities, *Proceedings of the National Academy of Science*, v. 119 (38), <https://doi.org/10.1073/pnas.2208451111>.
- Tankersley, M., Horgan, H., **Siddoway, C.**, Caratori Tontini, F., and Tinto K., 2022, Basement topography and sediment thickness beneath Antarctica's Ross Ice Shelf, *Geophysical Research Letters*, doi: 10.1029/2021GL097371 .
- Tikoff, B., **Siddoway, C.**, Sokoutis, D., and Willingshofer, E., 2022, The lithospheric folding model applied to the Bighorn uplift during the Laramide orogeny, in Craddock, J.P. et al., eds., *Tectonic Evolution of the Sevier-Laramide Hinterland, Thrust Belt, and Foreland, and Postorogenic Slab Rollback (180–20 Ma)*: Geological Society of America Special Paper 555, [https://doi.org/10.1130/2021.2555\(08\)](https://doi.org/10.1130/2021.2555(08)) .

- Siddoway, C., 2021, Geology of West Antarctica (Chapter 3, invited), in Kleinschmidt, G., ed., [Geology of the Antarctic Continent](#); pp. 87-131. Stuttgart: Schweizerbart Science Publishers, ISBN 978-3-443-11034-5.
- Siddoway, C., 2020, Antarctica, in Scott Elias, S. and Alderton, D. (eds.), *Encyclopedia of Geology*, 2nd edition; 17 pages. Amsterdam: Academic Press, 10.1016/B978-0-08-102908-4.00136-3.
- Flowers, R. M., Macdonald, F.A., Siddoway, C.S., and Havranek, R., 2020, Diachronous development of the Great Unconformity prior to Snowball Earth, *Proceedings of the National Academy of Sciences*, doi: [10.1073/pnas.1913131117](#).
- Jordan, T.A., Riley, T.R. and Siddoway, C., 2020, Geology of West Antarctica, *Nature Reviews Earth and Environment*, doi: 10.1038/s43017-019-0013-6.
- Das, I., L. Padman, R.E. Bell, H.A. Fricker, K.J. Tinto, C.L. Hulbe, C.S. Siddoway, T. Dhakal, N.P. Frearson, C. Mosbeux, S. I. Cordero, M.R. Siegfried, 2020, Multi-decadal basal melt rates and structure of the Ross Ice Shelf, Antarctica using airborne ice penetrating radar, *Journal of Geophys. Research-Earth Surface*, doi: 10.1029/2019JF005241.
- Siddoway, C., Palladino, G., Prosser, G., Freedman, D., and Duckworth, W. C., 2019, Basement-hosted sand injectites: Use of field examples to advance understanding of hydrocarbon reservoirs in fractured crystalline basement rocks, in Bowman, M. (ed.), *Subsurface Sand Remobilization and Injection*, Geological Society of London Special Publication 493, doi: 10.1144/SP493-2018-140.
- Tinto, K. J., Padman, L., Siddoway, C.S., and 15 others, 2019, Ross Ice Shelf response to climate driven by the tectonic imprint on seafloor bathymetry, *Nature Geoscience*, 12, 441–49, doi: 10.1038/s41561-019-0370-2.
- Jensen, J.L., Siddoway, C. S., Reiners, P.W., Ault, A.K., Thomson, S.N. and Steele-MacInnis, M., 2018, Single-crystal hematite (U-Th)/He dates and fluid inclusions document widespread Cryogenian sand injection in crystalline basement, *Earth and Planetary Science Letters*, v. 500, 145–155, doi: 10.1016/j.epsl.2018.08.021.
- Colleoni, F., De Santis, L., Siddoway, C.S., Bergamasco, A., Golledge, N., Lohmann, G., Passchier, S. and Siegert, M., 2018, Spatio-temporal variability of processes across Antarctic ice-bed-ocean interfaces, *Nature Communications*, v. 9, 2289, <https://rdcu.be/ZLBI>.
- Langridge, R.M. Ries, W., Dolan, J., Schermer, E. and Siddoway, C., 2017, Geologic slip rate estimates for the Alpine Fault at Maruia River (Calf Paddock), New Zealand, *New Zealand Journal of Geology & Geophysics*, 10.1080/00288306.2016.1275707.
- Brown, C., Yakymchuk, C., Brown, M., Fanning, C.M. Korhonen, F.J., and Siddoway, C.S., 2016, From source to sink: Petrogenesis of Cretaceous anatectic granites from the Fosdick migmatite–granite complex, West Antarctica, *Journal of Petrology*, 10.1093/petrology/egw039.
- McFadden, R.R., Teyssier, C., Siddoway, C.S., Cosca, M., and Fanning, C.M., 2015, Mid-Cretaceous oblique rifting of West Antarctica: emplacement and rapid cooling of the Fosdick Mountains migmatite-cored gneiss dome, *Lithos*, doi:10.1016/j.lithos.2015.07.005
- Yakymchuk, C., Brown, C.R., Brown, M., Siddoway, C.S., Fanning, C.M. and Korhonen, F.J., 2015, Paleozoic evolution of West Marie Byrd Land, West Antarctica: *Geological Society of America Bulletin*, doi:10.1130/B31136.1.
- Siddoway, C.S. and Gehrels, G.E., 2014, Basement-hosted sandstone injectites of Colorado: A vestige of the Neoproterozoic revealed through detrital zircon provenance analysis, *Lithosphere*, v. 6, p. 403-408, <http://dx.doi.org/10.1130/L390.1>.
- Yakymchuk, C.; Brown, M., Korhonen, F., Piccoli, P., Siddoway, C., and Vervoort, J.D., 2014, Decoding polyphase migmatites using geochronology and phase equilibria modeling, *Journal of Metamorphic Geology*, v. 33 (2), p. 203–230, doi: 10.1111/jmg.12117.

INVITED LECTURES // PAST 5 YEARS

- Carleton College**, June 14, 2024, **Time is on my Side: 40 Years of Antarctic Inquiry (that all started here)**
- Duke University**, Feb. 19, 2024, From Cores to Continent: Use of detrital minerals and a volcanic ash bed to expand knowledge of West Antarctica's bedrock and neotectonics
- Community Workshop** on Future Directions for Southern Ocean and Antarctic Nearshore and Coastal Research, National Academy of Sciences, February 9-10, 2023
- University of Arizona**, Feb. 9 and 16, 2022, Bedrock Geology of Antarctica, and hypotheses about cross-Ross Ice Shelf sedimentary connections (Lectures presented to "CURE" students, course taught by Martin Pepper)
- Colorado Scientific Society** [Denver, CO], Jan. 22, 2022, Antarctica at the juncture of bedrock geology and dynamic ice sheet
- Northern Illinois University**, Nov. 20, 2020, From Cores to Continent: Use of detrital minerals and a volcanic ash bed to expand knowledge of West Antarctica's bedrock and neotectonics
- SCAR-COMNAP Open Science Conference**, Aug. 6, 2020, Updated tectonic framework of West Antarctica and legacy of formation upon Gondwana's complex convergent margin
- Café Scientifique – Univ. Colorado/Colorado Springs**, Nov. 12, 2019, Tavakaiv Quartzite: An uncommon rock record of 'Snowball Earth' times, preserved on the flanks of Pikes Peak.
- Lamont-Doherty Earth Observatory**, Nov. 6, 2019 [Geochemistry Seminar], Subglacial geology and its influence on icesheet origins and processes, West Antarctica.

ACADEMIC / PROFESSIONAL SERVICE, 2012 TO PRESENT

Professional Service since 2012

- ongoing Peer review for publications and National Science Foundation proposals
- 2017-20 Deputy Chair, SCAR International GeoMAP Action Group (Antarctica)
- 2016 – 19 Member-at-Large, GSA Penrose Conferences and Thompson Field Forums Committee; *and* Fellowships and Membership Committee
- 2016 Review Panel, NSF Antarctic Geoscience
- 2005-16 Doctoral committee member for Jacquie Baumann and Cailey Condit (U. Colorado); Chris Yakymchuk (U. Maryland); Jamie Levine (U. Texas-Austin); and Rory McFadden (U. Minnesota). Collaborator/advisor for J.V. Jones IV (U. Texas-Austin).

Colorado College – administrative appointments and committee service

- 2022 Faculty Executive Committee (Governance Subcommittee)
- 2020- Chair, Department of Geology, Colorado College
- 2019-20 Natural Sciences Division Executive Committee
- 2017-18 Design Review Board
- 2015 - 16 Advancement Advisory Committee (Chair); Watson Fellowship Committee

CONFERENCE PRESENTATIONS, 2018 to present. (Includes only those not represented by published articles)

- Siddoway, C.; Thomson, S.N.; Hemming, S. and Brachfeld, S., 2024, Multichronometer dating of dropstones and ice-rafted debris (latest Miocene through Pliocene) recovered from IODP drill cores offshore West Antarctica, AGU Fall Meeting (9-13 December), Paper [1655273](#).

- Courtney-Davies, L., Flowers, R.M., Metcalf, J.R., Siddoway, C., Tasistro-Hart, A., and Macdonald, F., 2024, In-situ U-Th/He-Pb Double Dating of Snowball Earth Meltwater Events, AGU Fall Meeting (9-13 Dec.), Paper [V22A-03](#).
- Siddoway, Christine, 2024, Neoproterozoic origin of the Ute Pass fault (southern Front Range) and structural control upon the preservation of a Snowball Earth sedimentary record in Colorado, GSA Abstracts with Program, 56(4), doi: 10.1130/abs/2024CD-399780
- Siddoway, C., Breyak, A., Gevedon, M., Pollatsek, E., Hemming, S., and Cox, S.E., 2024, investigation of tourmaline-mineralized mirrored brittle faults from West Antarctica using δO (qz-tur), tourmaline Ar/Ar thermochronology, and brittle kinematic analysis, GSA Abstracts with Program, 56(4), doi: 10.1130/abs/2024CD-399623.
- Siddoway, Christine; Morin, Paul; Elkind, Samuel; Cox, Simon; and Smith Lyttle, Belinda, 2023, Glacial sequences and surficial features within Antarctic GeoMAP, the new open-access geological map dataset of Antarctica, 30th Annual West Antarctic Ice Sheet Workshop (Sept. 25-28, Cloquet, MN), [WAIS 2023 booklet](#), p 81.
- Courtney-Davies, L., Flowers, R.M., Siddoway, C., 2023, Hematite U-Pb dating brackets age of Tavakaiv sandstone injectites and provides minimum age for Great Unconformity erosion surface, Colorado, USA. Gordon Research Conference in Geochronology (13-18 August 2023, Mt Snow, VT).
- Siddoway, C., 2023, West Antarctica crustal evolution and ice sheet history, investigated using IRD, coarse sediment and volcanic tephra from IODP379 cores and Marie Byrd Land shelf deposits. IODP Expedition 379 Science Meeting (2–4 May 2023, Heidelberg University, Germany).
- Horikawa, K., Iwai, M., Asahara, Y., Hillenbrand, C.-D., Cowan, E., Siddoway C., and Halberstadt, A.R., 2023, West Antarctic Ice Sheet retreat in the glacial–interglacial cycles during the Mid Pliocene: Results from Sr-Nd-Pb isotopes, IODP Expedition 379 Science Meeting (2–4 May 2023, Heidelberg University, Germany).
- Siddoway, C., Thomson, S.N., Cavosie, A., Alfaro, J. and Iverson, N., 2023, Inventory of ice-rafted clasts and sediment constituents that track with dynamic ice-margin processes and biological productivity, Amundsen Sea region, Antarctica. European Geophysical Union Meeting (Vienna, 23–28 April), Abstract EGU23-9728, <https://doi.org/10.5194/egusphere-egu23-9728>.
- Thomson, S.T., Siddoway, C. (presenter), Hemming, S., Colorado College CURE undergraduates, Expedition 379 scientists, Expedition 382 scientists, 2022, Evidence of Diminished WAIS and Open Interior Seaway, from Distinctive Dropstones in Amundsen Sea that Originated in the Ellsworth Mountains, 29th Annual WAIS Workshop (Sept. 27-29, Estes Park, CO).
- Siddoway, C., Thomson, S.T., Taylor, J., Pepper, M., Furlong, H., Ruggiero, J., Reed, B., 2022, Enlisting Historically Excluded Undergraduates in the Effort to Extend Knowledge of West Antarctica's Bedrock, Through Coursebased Undergraduate Research Experiences (CUREs) and Art-Science Initiatives, 29th Annual WAIS Workshop (Sept. 27-29, 2022), Estes Park, CO.
- Flowers, R., Macdonald, F., Peak, B., Siddoway, C., Sturrock, C., Havranek, R., Ketcham, R., 2022, Development of the Great Unconformities, Geological Society of America Abstracts with Programs, v. 54 (5), doi:10.1130/abs/2022AM-377840, [Paper 377840](#).
- Siddoway, C., Thomson, S.T., Hemming, S., Buchband, H., Quigley, C., Furlong, H., Hilderman, R., and 6 others, 2021, U-Pb zircon geochronology of dropstones and IRD in the Amundsen Sea, applied to the question of bedrock provenance and Pliocene ice sheet extent in West Antarctica, European Geophysical Union v-Meeting, [Abstract EGU21-9151](#), session CR1.1.
- Iverson, N., Siddoway C., Zimmerer M., Smellie J., Dunbar N., Gohl K. and IODP Exp. 379 scientists, 2021, Rhyolite volcanism in the Marie Byrd Land volcanic province, Antarctica: New evidence for

- pyroclastic eruptions during latest Pliocene icesheet expansion, European Geophysical Union v-Meeting, [Abstract EGU21-9003](#), session GMPV9.4.
- Jordan, T., Riley, T., and Siddoway, C.: Overview of West Antarctic tectonic evolution from ~500 Ma to the present, EGU General Assembly 2021, online, 19–30 Apr 2021, [EGU21-8265](#), 2021.
- Siddoway, C., Riley, T., Jordan, T.A., Tinto, K.J. and Tankersley, M., 2020 (invited), Updated tectonic framework of West Antarctica and legacy of formation upon the complex convergent margin of the Gondwana supercontinent, SCAR 2020 Online, [Session 13, Abstract 920](#).
- Siddoway, C., Cavosie, A., Bohaty, S., Hillenbrand, C.D. and IODP Expedition 379 scientists, 2020, Origin of detrital and diagenetic minerals in a terrigenous sand layer, Resolution Drift, northern Amundsen Sea (Site U1533, IODP Expedition 379), Scientific Committee on Antarctic Research Open Science Conference, Hobart, Tasmania.
- Iverson, N., Siddoway, C., Zimmerer, M., Smellie, J. and IODP Expedition 379 scientists, 2020, Geochemical characterization and geochronology of distinctive rhyolite tephra and other sparse volcanogenic material in IODP379 deep-sea cores, Resolution Drift, northern Amundsen Sea, Scientific Committee on Antarctic Research Open Science Conference, Hobart, Tasmania.
- Siddoway, CS, SN Thomson, JM Taylor, C Teyssier, C Kinney, 2019, ICI-Hot project: Timing of development of West Antarctica's subglacial topography evaluated using apatite and zircon double/triple-dating, AGU Fall Meeting 2019.
- Tinto, KJ, RE Bell, L Padman, SR Springer, CS Siddoway, HA Fricker, et al., 2019, New insights into Ross Ice Shelf stability over broad timescales from high-resolution ROSETTA-Ice survey, AGU Fall Meeting.
- Padman, L., RE Bell, I Das, C Mosbeux, DF Porter, CS Siddoway, et al., 2018, Ice Shelf Vulnerability to Increased Seasonal Upper Ocean Warming AGU Fall Meeting Abstracts.
- Siddoway, C., 2018, Geodesign in the Undergraduate Classroom: An avenue to urban environmentalism. GIS in Higher Ed Summit, Colorado Springs (15 March).
- Siddoway C.S., Cox S.C., Burton-Johnson, A., Millikin, A., Smith Lyttle B., Elkind S., and SCAR Geomap Initiative, 2018, West Antarctica Digital Geological Dataset for Cross-discipline Use, POLAR2018 Open Science Conference (June 15-26, Davos, Switzerland) Abstract A- 938-0073-01410.

Education Activities, past 5 years

GRADUATE AND POST-DOCTORAL RESEARCH MENTORING

- Tom Arney, PhD 2024, University of Southampton, UK, Ice-rafted feldspar grains in recent shelf sediments of West Antarctica: provenance pathways via lead isotope compositions. Doctoral advisor: Steven M. Bohaty.
- Ludmila Fonseca Teixeira, PhD 2023, ETH - Zurich, Magmatic to hydrothermal conditions in A-type Pikes Peak granite (Colorado) and associated pegmatites. Doctoral advisor: Olivier Bachmann.

TEACHING AND RESEARCH MENTORING AT COLORADO COLLEGE, 2016 TO PRESENT

Courses taught

- | | |
|--------|---------------------------------------------------------------------------------------------|
| CC 120 | First Year Program: Writing in the Disciplines – Discerning and Writing the Record of Earth |
| GY 140 | Introduction to Earth Systems |
| GY 212 | Earth as a Physical System |
| GY 250 | Topics in Geology: Explore Antarctica / Experience STEM |
| GY 315 | Rock Deformation and the Structure of Mountains |
| GY 316 | Field analysis of Geological Structures |

- GY 400 Senior Research Seminar: Subglacial hydraulics and glaciotectonics of Snowball Earth in Colorado (2025)
- GY 400 Senior Research Seminar: Antarctic ice sheet evolution and subglacial landscape (2020)
- GY 405 Research Topics in Geology: Diverse topics, reflected in the thesis and project titles, below.
- GY 445 Regional Studies in Geology (2019): Mojave region, California, to Colorado Plateau

Undergraduate Research Mentoring, past 5 years:

Senior Research Advising [GY405]:

- Cade Quigley, 2023, Environmental influences on seismic noise across Alaska, using USA-Array data
- Emory Pollatsek, 2023, Understanding fault-fluid interaction through stable isotope analysis of tourmaline-coated brittle faults of the West Antarctic Rift System
- Abby Roat, 2022, Characterizing changes in 21st century subglacial hydrology at Humboldt Glacier, Northern Greenland
- Swope, Fiona, 2022, Glacial Exhumation History of the DeVicq Region in West Antarctica
- Haddad, Helen, 2022, Developing Geology Curriculum in Collaboration with Concrete Couch (local non-profit)
- Brandhorst, Claire, 2021, Primary observation and development of online educational resource for the Sutherland Creek / Bear Creek segment of the Ute Pass fault, Colorado Front Range
- Norwine, Jonny, 2021, Comparison of geostatistical vs. machine learning workflows applied to a geologic modeling problem
- Bering, Liza, 2020, Geological review of notable features surrounding the Stabler Gilmore Cabin
- Meyer, Ellie, 2019, Brittle kinematic analysis of transcurrent deformation, Mosca Creek (CO)
- Krauss, Zoe, 2019, Magnetics and Gravity modeling of Ross Ice Shelf
- Rundquist, Will, 2019, Geodesign for rehabilitation of campus-creek relationship
- Sachs, David, 2019, Geologically Influenced Design (Interdisciplinary Major)
- Vick, Jordan, 2019, GIS development and Geodesign for educational use of Monument Park 'duck pond' (post graduation internship for Environmental major)
- Patterson, Kevin, 2019, Matrix analysis of sillimanite quartz pods in a high strain zone
- Keeshin, Skye, 2018, Analysis of Shallow Ice Radar for the North-Western Ross Ice Shelf: Quantifying Ocean-Cryosphere Interaction
- Thompson, Cole, 2018, Mode of Emplacement of Tava Sandstone Injectites Using Dike Geometries and Detrital Zircon Provenance Analysis

Undergraduate (non-thesis) Research Projects advised, past 5 years:

- Annie Breyak, 2024, Microstructural study of tourmaline-mineralized mirrored brittle faults
- Harold Oppenheim, 2024, (U-Th)/He apatite dating of felsic glacial erratics (West Antarctica) for information about thermal history of subglacial bedrock
- Jan Alfaro, 2022, Investigation of volcanic tephra on the West Antarctica marine shelf: composition and potential climate significance
- Amanda Yoo, 2021, Iceberg-rafted rocks and what they reveal about climate-warming in Antarctica: Evidence from uranium-lead isotopes and Antarctica's rock record
- Jonny Norwine, 2019, Spectral analysis and geological modeling of potential fields data, Ross Ice Shelf
- Sarah Packard, 2019, Airborne radar analysis for ice shelf structures, Ross Ice Shelf

Zoe Krauss, 2018, Magnetics and Gravity modeling of Ross Ice Shelf

Will Rundquist, 2019, Geodesign for rehabilitation of campus-creek relationship

David Sachs, 2019, Geologically Influenced Design

Meeting presentations arising from collaborations with students

*Undergraduates in boldface type, * indicates graduate student.*

*Giardino, J., *White, S., Blackburn, T., Tulaczyk, S.M., and Siddoway, C., 2024, [Pedogenic Carbonates Record Insolation Driven Melting in Antarctica](#), AGU Fall meeting (9-13 December), Paper 1597941.

Adkins, Roxanne, Taylor, Jennifer M., Siddoway, C., Thomson, S.N. and Teyssier, C., 2024, Unveiling the geologic history of Marie Byrd Land, West Antarctica: insights from thermo-kinematic modeling and low-temperature thermochronology, *GSA Abstracts with Program*, 56(5), doi: 10.1130/abs/2024AM-402995.

*Furlong, Heather; Scherer, R., and Siddoway, C., 2023, Link Between Iceberg Melt and Diatom Productivity Demonstrated Through Analysis of Mid-Pliocene Amundsen Sea Interglacial Sediments, 30th Annual WAIS Workshop (Sept. 25-28), Cloquet, MN.

Brigham, Noah, Blackburn, T., Gagliardi, J., Tulaczyk, S., Siddoway, Christine, 2023, West Antarctic pedogenic carbonates record insolation driven snow melt, 30th Annual WAIS Workshop (Sept. 25-28), Cloquet, MN.

Pollatsek, A., Siddoway, C., & Gevedon, M., 2022, Understanding fault-fluid interaction through stable isotope analysis of tourmaline-coated brittle faults of the West Antarctic Rift System, *Geological Society of America Abstracts with Programs*, v. 54 (5), doi: 10.1130/abs/2022AM-383864.

*Fonseca Teixeira, Ludmila, Laurent, O., Troch, J., Siddoway, C., and Bachmann, O., 2023, Tracking volcanic, plutonic, and pegmatitic sources in sediments: implications for the Early Earth history. *European Geophys. Union Meeting (Vienna, 23–28 April)*, Abs. EGU23-5447, doi: 10.5194/egusphere-egu23-5447.

*Tankersley, M., Siddoway, C., Horgan, H., Caratori Tontini, F., Tinto, K., 2021, New Contribution to Ross Ice Shelf (Antarctica) Boundary Conditions: Basement Depths and Sediment Thickness Determined from Aeromagnetic Data, AGU Fall meeting (11-15 December 2021), Abstract C45C-1013.

*Taylor, J., **Swope, F.**, Siddoway, C., Thomson, S.N., Teyssier, C., 2021, Development of Glacial Topography over a Hot Geotherm: Insights from Low-Temperature Thermochronology and Thermo-Kinematic Modeling in Marie Byrd Land, West Antarctica, AGU Fall meeting (11-15 December 2021), Abstract EP15A-02.

Sachs D., Rundquist W., Cooney M., Hines C., and Siddoway C., 2018, Geodesign applied to an urban campus and its river reach: Colorado College and Monument Creek, GIS in the Rockies, Denver, CO (27-28 September). *Undergraduate poster session: 3rd Place award*

Keeshin, S., Robin E. Bell, Christine Siddoway, **Gina Jozef**, Kirsty Tinto, S. Isabel Cordero, Nick Frierman, Indrani Das, and ROSETTAIce Team, 2017, Shallow Ice Radar Expression of TAM glaciers within Ross Ice Shelf, and a new method to distinguish mechanisms of ice sheet thinning. [24th Annual WAIS Workshop](#). Camp Casey Conference Center, Coupeville, WA.

Jozef, Gina, R.E. Bell, C. Siddoway, **Skye Keeshin**, Kirsty Tinto, N. Frearson, S. Isabel Cordero, Indrani Das, and ROSETTAIce Team, 2017, Analyzing Kamb Ice Stream Flow Line from Grounding Line to Front of Ross Ice Shelf for Evidence of Basal Melt. [24th Annual WAIS Workshop](#). Camp Casey Conference Center, Coupeville, WA.

Siddoway, C., **Millikin, Alexis, White, T., Elkind, S.**, Cox, S.C., Smith Lyttle, B.P., 2017, New geological dataset of Marie Byrd Land & the Ellsworth Mountains: a milestone in the SCAR GeoMAP initiative, New Zealand Antarctic Science (NZARI) Conference, Dunedin, New Zealand (26 - 28 June).

Collaborators/current, and over the past 5 years:

Simon C. Cox, GNS Science, New Zealand
Stephen E. Cox, Lamont Doherty Earth Observatory
Liam Courtney-Davies, University of Colorado
Rebecca Flowers, University of Colorado
Keiji Horikawa, Toyama University, Japan
Nels Iverson, New Mexico Tech
James Marschalek, Imperial College, London
Reed Scherer, Northern Illinois University
Matt Tankersley, Victoria University, Wellington, New Zealand
Christian Teyssier, University of Minnesota
Basil Tikoff, University of Wisconsin
Kirsty Tinto, Lamont Doherty Earth Institute, Columbia University
Stuart Thompson, University of Arizona