Matthew R. Siegfried [he/him]

CONTACT INFORMATION

Department of Geophysics
Colorado School of Mines
1500 Illinois St
Golden, CO 80401 USA

Tel: 303.384.2004
Mobile: 847.525.8487
siegfried@mines.edu
https://glaciology.mines.edu/

ACADEMIC APPOINTMENTS

Associate Professor — April 2024 to present

Assistant Professor — January 2019 to April 2024
Department of Geophysics
Hydrologic Science and Engineering, Affiliated Faculty
Payne Institute for Public Policy, Faculty Fellow
Colorado School of Mines

Thompson Postdoctoral Fellow — May 2017 to December 2018
Department of Geophysics
School of Earth, Energy, and Environmental Sciences
Stanford University
Mentor: Dr. Dustin M. Schroeder

Postdoctoral Scholar — October 2015 to April 2017
Institute of Geophysics and Planetary Physics
Scripps Institution of Oceanography
University of California, San Diego
Supervisor: Dr. Helen A. Fricker

EDUCATION

PhD in Earth Sciences — October 2015
Institute of Geophysics and Planetary Physics
Scripps Institution of Oceanography, La Jolla, CA
Dissertation: *Investigating Antarctic ice sheet subglacial processes beneath the Whillans Ice Plain, West Antarctica, using satellite altimetry and GPS*
Adviser: Dr. Helen A. Fricker

Master of Science in Earth Sciences — July 2010
Dartmouth College, Hanover, NH
Thesis: *On the use of high-precision GPS surveys for validation of ICESat altimetry measurements and investigation of seasonal ice-surface fluctuations*
Adviser: Dr. Robert L. Hawley

Bachelor of Arts in Earth Sciences — June 2008
Dartmouth College, Hanover, NH
Magna cum Laude, *Phi Beta Kappa*
Senior Thesis for High Honors: *Hydrothermal Waters of Ischia, Italy: A revisitation of groundwater mixing and the ramifications for environmental arsenic contamination*
Adviser: Dr. Benjamin Bostick

MANUSCRIPTS IN REVIEW

* *indicates student or postdoctoral advisee*
ˆ *indicates student on whose dissertation committee I served*
† *indicates co-first authors*

[81] *Follingstad, V. M., R. J. Michaelides*, M. R. Siegfried, T. M. Meng, J. Bradford, K. H. Hughson, A. R. Kubas, A. Mullen, E. Quartini, A. Routt, H. G. Sizemore, A. Swidinsky and B. E. Schmidt, in review. Quantifying the Surface Deformation of Pingos on the Alaskan North Slope using Interferometric Synthetic Aperture Radar (InSAR), *Permafrost and Periglacial Processes*.

[80] *Hills†, B. H., T. J. Young†, D. A. Lilien†, E. Babcock, N. Bienert, D. Blankenship, J. Bradford, G. Brighi, A. Brisbourne, J. Dall, R. Drews, O. Eisen, M. R. Ershadi, T. A.

Gerber, N. Holschuh, D. Jansen, T. M. Jordan, N. B. Karlsson, J. Li, C. Martín, K. Matsuoka, D. May, F. M. Oraschewski, J. Paden, N. M. Rathmann, N. Ross, D. M. Schroeder, M. Siegert, M. R. Siegfried, E. Smith and O. Zeising, in review. Radar Polarimetry in Glaciology: Theory, Measurement Techniques, and Scientific Applications for Investigating the Anisotropy of Ice Masses, *Reviews of Geophysics*.

[79] *Katz, Z. S., M. R. Siegfried and L. Padman, in review. Ice Stream Deceleration and Slip-Event Timing is Modulated at Long-Period Ocean Tidal Frequencies at Whillans Ice Plain, West Antarctica, *AGU Advances*.

[78] ^Peter, I., E. J. Anderson, M. R. Siegfried and N. T. Kurtz, in review. A Novel Algorithm for Ice-Water Discrimination in Large Lakes using ICESat-2 and Data Driven Machine Learning, *Earth and Space Science*.

[77] *Savidge, E., J. Millstein*, T. Snow*, M. R. Siegfried, C. Bézu, K. Alley and B. Riel, in review. Deteriorating Structural Integrity of Pine Island Glacier's Southern Ice Shelf (2017–23) Identified with Satellite-Derived Surface Deformation, Ice Velocity, and Strain Rates, *Journal of Glaciology*.

[76] Bingham†, R. G., J. A. Bodart†, M. G. P. Cavitte†, A. Chung†, R. J. Sanderson†, J. C. R. Sutter†, O. Eisen, N. B. Karlsson, J. A. MacGregor, N. Ross, D. A. Young, D. W. Ashmore, A. Born, W. Chu, R. Drews, S. Franke, V. Goel, J. W. Goodge, A. C. J. Henry, A. Hermant, B. H. Hills*, N. Holschuh, M. R. Koutnik, G. J.-M. C. Leysinger Vieli, E. J. MacKie, E. Mantelli, C. Martín, F. S. L. Ng, F. M. Oraschewski, F. Napoleoni, F. Parrenin, S. V. Popov, T. Rieckh, R. Schlegel, D. M. Schroeder, M. J. Siegert, T. O. Teisberg, K. Winter, X. Cui, X. Tang, S. Yan, H. Davis, C. F. Dow, T. J. Fudge, T. A. Jordan, B. Kulessa, K. Matsuoka, C. J. Nyqvist, M. Rahnemoonfar, M. R. Siegfried, S. Singh, V. Višnjević, R. Zamora and A. Zuhr, in review. Antarctica's internal architecture: Towards a radiostratigraphically-informed age–depth model of the Antarctic ice sheets, *The Cryosphere*, doi:10.5194/egusphere-2024-2593.

[75] Horgan, H. J., C. Stewart, C. Stevens, G. Dunbar, L. Balfoort, B. E. Schmidt, P. Washam, M. A. Werder, D. Mandeno, J. Marschalek, C. Hulbe, N. Holschuh, R. Levy, B. Hurwitz, S. Jendersie, K. Johnson, J. Lawrence, R. Morgenstern, A. D. Mullen, E. Quartini, W. Sauthoff*, M. R. Siegfried, H. Still, S. Thorpe-Loversuch, T. van de Flierdt, R. Venturelli and A. Whiteford, in review. Subglacial water flow from beneath a West Antarctic ice stream, *Nature Geoscience*.

[74] Roth, D. L., G. Jin, M. Bezada, C. C. Masteller, M. R. Siegfried, A. Titov and B. Tate, in review. A River on Fiber: Spatially Continuous Fluvial Monitoring with Distributed Acoustic Sensing, *Seismica*.

[73] Smith, B., T. C. Sutterley, H. A. Fricker, L. Padman, M. R. Siegfried, T. Black, D. Felikson, B. I. D. Freer, A. Gibbons, S. L. Howard, B. Jelley, M. King, B. Medley, M. Morlighem, C. Sadlik and W. Sauthoff*, in review. ICESat-2 land ice products resolve Greenland and Antarctic ice-sheet height changes on seasonal to multiyear time scales, *Journal of Glaciology*.

Refereed Journal Publications

[72] ^Sartore, N. B., T. J. Wagner, M. R. Siegfried, N. Pujara and L. K. Zoet, 2025. Wave erosion, frontal bending, and calving at Ross Ice Shelf, *The Cryosphere*, **19**, 249–265, doi:10.5194/tc-19-249-2025.

[71] *Verboncoeur, H., M. R. Siegfried, J. P. Winberry, N. Holschuh, D. Byrne*, W. Sauthoff*, T. C. Sutterley and B. Medley, 2025. Multi-decadal evolution of Crary Ice Rise region, West Antarctica, amid modern ice-stream deceleration, *Journal of Glaciology*, **71**(e3), 1–11, doi:10.1017/jog.2024.79.

[70] Campbell, T. C., M. L. Skidmore, M. O. Patterson, J. E. Dore, D. M. Harwood, A. Leventer, A. B. Michaud, B. E. Rosenheim, M. R. Siegfried, A. Steigmeyer, M. Tranter, R. A. Venturelli, J. C. Priscu and the SALSA Science Team, 2025. Dynamic subglacial

meltwater history archived in Antarctic subglacial lake sediments , *GSA Bulletin*, doi:10.1130/B37731.1.

2024

[69] *Hills, B. H., M. R. Siegfried and D. M. Schroeder, 2024. Entrained Water in Basal Ice Suppresses Radar Bed-Echo Power at Active Subglacial Lakes, *Geophysical Research Letters*, **51**(13), doi:10.1029/2024gl109248.

[68] *Michaelides, R. J., M. R. Siegfried, J. Lovekin, K. Berry, B. Dugan and D. L. Roth, 2024. Wildfire Progression Time Series Mapping With Interferometric Synthetic Aperture Radar (InSAR), *IEEE Geoscience and Remote Sensing Letters*, **21**, 1–5, doi:10.1109/lgrs.2024.3365994.

[67] Bryant, M. B., A. A. Borsa, C. C. Masteller, R. J. Michaelides*, M. R. Siegfried, A. P. Young and E. J. Anderson, 2024. Multiple modes of shoreline change along the Alaskan Beaufort Sea observed using ICESat-2 altimetry and satellite imagery, *The Cryosphere*, doi:10.5194/egusphere-2024-1656, accepted.

[66] Freer, B. I. D., O. J. Marsh, H. A. Fricker, A. E. Hogg, M. R. Siegfried, D. Floricioiu, W. Sauthoff*, R. Rigby and S. F. Wilson, 2024. Coincident Lake Drainage and Grounding Line Retreat at Engelhardt Subglacial Lake, West Antarctica, *Journal of Geophysical Research: Earth Surface*, **129**(9), e2024JF007724, doi:10.1029/2024JF007724.

2023

[65] *Savidge, E., T. Snow*, M. R. Siegfried, Y. Zheng, A. B. Villas Bôas, G. A. Bortolotto, L. Boehme and K. E. Alley, 2023. Wintertime Polynya Structure and Variability From Thermal Remote Sensing and Seal-Borne Observations at Pine Island Glacier, West Antarctica, *IEEE Transactions on Geoscience and Remote Sensing*, **61**, 1–13, doi:10.1109/tgrs.2023.3271453.

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[63] Siegfried†, M. R., R. A. Venturelli†, M. O. Patterson, W. Arnuk, T. D. Campbell, C. D. Gustafsonˆ, A. B. Michaud, B. K. Galton-Fenzi, M. B. Hausner, S. N. Holzschuh*, B. Huber, K. D. Mankoff, D. M. Schroeder, P. Summers, S. Tyler, S. P. Carter, H. A. Fricker, D. M. Harwood, A. Leventer, B. E. Rosenheim, M. L. Skidmore, J. C. Priscu and the SALSA Science Team, 2023. The life and death of a subglacial lake in West Antarctica, *Geology*, **51**(5), 434–438, doi:10.1130/G50995.1.

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[61] Davis, C. L., R. A. Venturelli, A. B. Michaud, J. R. Hawkings, A. M. Achberger, T. J. Vick-Majors, B. E. Rosenheim, J. E. Dore, A. Steigmeyer, M. L. Skidmore, J. D. Barker, L. G. Benning, M. R. Siegfried, J. C. Priscu, B. C. Christner and the SALSA Science Team, 2023. Biogeochemical and historical drivers of microbial community composition and structure in sediments from Mercer Subglacial Lake, West Antarctica, *ISME Communications*, **3**(1), doi:10.1038/s43705-023-00216-w.

[60] Robel, A., S. Sim, C. Meyer, M. R. Siegfried and C. Gustafson, 2023. Contemporary ice sheet thinning drives subglacial groundwater exfiltration with potential feedbacks on glacier flow, *Science Advances*, **9**(33), doi:10.1126/sciadv.adh3693.

[59] Rosenheim†, B. E., A. B. Michaud†, J. Broda, A. Gagnon, R. A. Venturelli, T. D. Campbell, A. Leventer, M. Patterson, M. R. Siegfried, B. C. Christner, D. Duling, D. Harwood, J. E. Dore, M. Tranter, M. L. Skidmore, J. C. Priscu and the SALSA Science Team, 2023. A method for successful collection of multicores and gravity cores from Antarctic subglacial lakes, *Limnology and Oceanography: Methods*, **21**(5), 279–294, doi:10.1002/lom3.10545.

[58] Ryan, J. C., B. Medley, C. M. Stevens, T. C. Sutterley and M. R. Siegfried, 2023. Role of snowfall versus air temperatures for Greenland Ice Sheet melt-albedo feedbacks, *Earth and Space Science*, **10**(11), e2023EA003158, doi:10.1029/2023EA003158.

[57] Stubblefield, A. G., C. R. Meyer, M. R. Siegfried, W. Sauthoff* and M. Spiegelman, 2023. Reconstructing subglacial lake activity with an altimetry-based inverse method, *Journal of Glaciology*, 1–15, doi:10.1017/jog.2023.90.

[56] Venturelli, R. A., B. Boehman, C. Davis, J. R. Hawkings, S. E. Johnston, C. D. Gustafson, A. B. Michaud, C. Mosbeux, M. R. Siegfried, T. J. Vick-Majors, V. Galy, R. G. M. Spencer, S. Warny, B. C. Christner, H. A. Fricker, D. M. Harwood, A. Leventer, J. C. Priscu, B. E. Rosenheim and the SALSA Science Team, 2023. Constraints on the Timing and Extent of Deglacial Grounding Line Retreat in West Antarctica, *AGU Advances*, **4**, e2022AV000846, doi:10.1029/2022AV000846.

2022

[55] Bienert, N. L., D. M. Schroeder, S. T. Peters, E. J. MacKie, E. J. Dawson, M. R. Siegfried, R. Sanda and P. Christoffersen, 2022. Post-Processing Synchronized Bistatic Radar for Long Offset Glacier Sounding, *IEEE Transactions on Geoscience and Remote Sensing*, **60**, 1–17, doi:10.1109/tgrs.2022.3147172.

[54] ^Gustafson, C. D., K. Key, M. R. Siegfried, J. P. Winberry, H. A. Fricker, R. A. Venturelli and A. B. Michaud, 2022. A dynamic saline groundwater system mapped beneath an Antarctic ice stream, *Science*, **376**(6593), 640–644, doi:10.1126/science.abm3301.

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2021

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[51] *Michaelides†, R. J., M. Bryant†, M. R. Siegfried and A. A. Borsa, 2021. Quantifying Permafrost Deformation with ICESat-2, *Earth and Space Science*, **8**(8), e2020EA001538, doi:10.1029/2020EA001538.

[50] Barcheck, C. G., E. E. Brodsky, P. M. Fulton, M. A. King, M. R. Siegfried and S. Tulaczyk, 2021. Migratory earthquake precursors are dominant on an ice stream fault, *Science Advances*, **7**(6), doi:10.1126/sciadv.abd0105.

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[48] Horgan, H. J., L. van Haastrecht, R. B. Alley, S. Anandakrishnan, L. H. Beem, K. Christianson, A. Muto and M. R. Siegfried, 2021. Grounding zone subglacial properties from calibrated active-source seismic methods, *The Cryosphere*, **15**(4), 1863–1880, doi:10.5194/tc-15-1863-2021.

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2020

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2019

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2018

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2017

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2016

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2015

[14] Fisher, A. T., K. D. Mankoff, S. M. Tulaczyk, S. W. Tyler, N. Foley and the WISSARD Science Team (incl. **M. R. Siegfried**), 2015. High geothermal heat flux measured below the West Antarctic Ice Sheet, *Science Advances*, **1**(6), e1500093–e1500093, doi:10.1126/sciadv.1500093.

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2014

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2013

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2012

[2] Taylor, V. F., B. P. Jackson, M. R. Siegfried, J. Navratilova, K. A. Francesconi, J. Kirshtein and M. Voytek, 2012. Arsenic speciation in food chains from mid-Atlantic hydrothermal vents, *Environmental Chemistry*, **9**(2), 130–138, doi:10.1071/EN11134.

2011

[1] Siegfried, M. R., R. L. Hawley and J. F. Burkhart, 2011. High-Resolution Ground-Based GPS Measurements Show Intercampaign Bias in ICESat Elevation Data Near Summit, Greenland, *IEEE Transactions on Geosciences and Remote Sensing*, **49**(10), 3393–3400, doi:10.1109/TGRS.2011.2127483.

Technical Reports

Smith, B., D. Hancock, K. Harbeck, L. Roberts, T. Neumann, K. Brunt, H. A. Fricker, A. Gardner, M. R. Siegfried, S. Adusumilli, B. Csathoó, N. Holschuh, J. Nilsson and F. Paolo, 2021. Algorithm Theoretical Basis Document (ATBD) for Land Ice Along-Track Height Product (ATL06), Release 004, *NASA Goddard Space Flight Center Technical Reference*.

Other Publications

Snow, T., C. Holdgraf, W. Sauthoff*, J. Scheick, E. Abrahams, J. Millstein*, S. Bhangarj, C. Boettigerk, J. Colliander, L. A. Lopez Espinosa, E. Holmes, J. H. Kennedy, J. S. Lowndes, A. I. Mandel, F. Pérez, J-P Swinski, A. Teucher and **M. R. Siegfried**, in review. A path to better science through co-creation and open infrastructure, *Proceedings of the National Academy of Sciences (Commentary)*.

Sauthoff, W., T. Snow, J. D. Millstein*, J. Colliander and **M. R. Siegfried**, 2024. Democratizing Science in the Cloud. *EOS: Earth & Space Science News*, **105**, doi:10.1029/2024EO240385.

Siegfried, M. R., and C. D. Gustafsonˆ, 2022. Scientists in Antarctica discover a vast, salty groundwater system under the ice sheet – with implications for sea level rise, *The Conversation*, https://theconversation.com/scientists-in-antarctica-discover-a-vast-salty-groundwater-system-under-the-ice-sheet-with-implications-for-sea-level-rise-182506.

Padman, L., and **M. R. Siegfried**, 2018. Ocean Tides Affect Ice Loss from Large Polar Ice Sheets, *EOS: Earth & Space Science News*, **99**, doi:10.1029/2018EO092835.

Fricker, H. A., F. Paolo, **M. R. Siegfried**, and S. Adusumilli, 2018. Short-term changes in Antarctica's ice shelves are key to predicting their long-term fate, *The Conversation*,

https://theconversation.com/short-term-changes-in-antarcticas-ice-shelves-are-key-to-predicting-their-long-term-fate-95207.

Data Sets

Siegfried, M. R., R. A. Venturelli, M. O. Patterson, W. Arnuk, T. D. Campbell, C. D. Gustafson, A. B. Michaud, B. K. Galton-Fenzi, M. B. Hausner, S. N. Holzschuh, B. Huber, K. D. Mankoff, D. M. Schroeder, P. T. Summers, S. Tyler, S. P. Carter, H. A. Fricker, D. M. Harwood, A. Leventer, B. E. Rosenheim, M. L. Skidmore, J. C. Priscu and T. S. S. Team, 2023. Data for Siegfried*, Venturelli*, et al., 2023, Geology, Zenodo, doi:10.5281/ZENODO.7597019.

Smith, B. E., H. A. Fricker, A. Gardner, M. R. Siegfried, S. Adusumilli, B. M. Csathó, N. Holschuh, J. Nilsson, F. S. Paolo and the ICESat-2 Science Team, 2021. ATLAS/ICESat-2 L3A Land Ice Height, Version 4, NASA National Snow and Ice Data Center Distributed Active Archive Center, Boulder, Colorado USA, doi:10.5067/ATLAS/ATL06.004.

Published Software

Siegfried, M. R., W. Arnuk, R. A. Venturelli and M. O. Patterson, 2023. SiegVent2023-Geology code repository (Version 1.1), Zenodo, doi:10.5281/ZENODO.7605994.

Siegfried, M. R., 2021. mrsiegfried/Siegfried2021-GRL: Initial release with acceptance (Version 1.0), Zenodo, doi:10.5281/ZENODO.4914107.

Arendt, A., B. Smith, D. Shean, A. Steiker, Alek Petty, F. Perez, S. Henderson, F. Paolo, J. Nilsson, M. Becker, Susheel Adusumilli, D. Shapero, B. Wallin, J. Meyer, A. Schweiger, S. Dickinson, N. Hoschuh, M. R. Siegfried and T. Neumann, 2019. ICESAT-2HackWeek/ICESat2_hackweek_tutorials (Version 0.1), Zenodo, doi:10.5281/ZENODO.3360994.

Expanded Abstracts

* *indicates student or postdoctoral advisee*

[12] *Abrahams, E., T. Snow*, F. Perez and M. R. Siegfried, 2024. A Scalable Data Augmentation Strategy Enhancing Tile-Position Invariance in Small Object Segmentation for Earth Observation, *International Conference on Learning Representations: Machine Learning 4 Remote Sensing (ICLR: ML4RS 2024)*, doi:10.48550/arXiv.2404.10927.

[11] *Byrne, D., J. Klemm*, M. R. Siegfried, D. Castelletti, R. Michaelides* and D. M. Schroeder, 2024. Radar Altimetry Simulation to Identify Sub-Footprint Ice-Sheet Surface Change, *IGARSS 2024: 2024 IEEE International Geoscience and Remote Sensing Symposium*, doi:10.1109/IGARSS53475.2024.10641847.

[10] Medley, B., S. Bhushan, T. Black, T. Dixon, D. Felikson, A. Gardner, R. Michaelides, P. Milillo, J. Millstein*, A. Petty, D. Shean, M. R. Siegfried, B. Smith, T. Sutterley and T. Teisberg, 2024. Cryospheric Science Activities Supporting Development of NASA's Surface Topography and Vegetation Observing System, *IGARSS 2024: 2024 IEEE International Geoscience and Remote Sensing Symposium*.

[9] Michaelides, R. J., M. R. Siegfried, S. Batzli, J. A. Villegas Bravo, D. Losos and W. C. Straka III, 2024. Robust Wildfire Time Series Imaging with Spaceborne Interferometric Synthetic Aperture Radars, *IGARSS 2024: 2024 IEEE International Geoscience and Remote Sensing Symposium*.

[8] *Sauthoff, W., M. R. Siegfried and B. E. Smith, 2024. Evolving Outlines of Antarctic Active Subglacial Lakes using an Image Processing Algorithm on Gridded Altimetry Data, *IGARSS 2024: 2024 IEEE International Geoscience and Remote Sensing Symposium*, doi:10.1109/IGARSS53475.2024.10642198.

2023

[7] Bradford, J. H., M. R. Siegfried, V. Follingstad*, K. Hughson, A. Routt, B. Schmidt, A. Kubas, E. Quartini, A. Mullen and A. Swidinsky, 2023. Mapping the internal structure Arctic pingos using ground-penetrating radar: Results from the Pingo Canadian Landmark, *Seventh International Conference on Engineering Geophysics*.

[6] Bryant, M., E. Anderson, A. Borsa, C. Masteller, R. Michaelides*, M. R. Siegfried and A. Young, 2023. Integrating ICESat-2 elevation observation and satellite optical imagery to measure coastal topography and retreat rates on the Alaskan Beaufort Sea coast, *IGARSS 2023: 2023 IEEE International Geoscience and Remote Sensing Symposium*.

[5] Michalides, R. and M. R. Siegfried, 2023. Studying permafrost-wildfire interactions in the age of NISAR, *IGARSS 2023: 2023 IEEE International Geoscience and Remote Sensing Symposium*.

2021

[4] Siegfried, M. R., D. M. Schroeder, W. Sauthoff* and B. E. Smith, 2021. Investigating a large subglacial lake drainage in East Antarctica with ice-penetrating radar, *SEG Annual Meeting* (invited contribution).

[3] *Klemm, J. and M. R. Siegfried, 2021. Open Source Visualization for Radar Altimetry Waveforms, /textitIEEE International Symposium on Antenna Technology and Applied Electromagnetics.

[2] Summers, P. T., D. M. Schroeder and M. R. Siegfried, 2021. Constraining ice sheet basal sliding and horizontal velocity profiles using a stationary phase senstive radar sounder, *IGARSS 2021: 2021 IEEE International Geoscience and Remote Sensing Symposium*.

2020

[1] Bienert, N., D. M. Schroeder, S. T. Peters and M. R. Siegfried, 2020. Processing-based synchronization approach for bistatic glacial tomography, *IGARSS 2020: 2020 IEEE International Geoscience and Remote Sensing Symposium*.

Winner of the IEEE GRSS Symposium Prize Paper Award

Mentoring

Postdoctoral Scholars

Shane Grigsby, 2019–2021
(*now: Research & Development Scientist, National Geospatial Intelligence Agency*)

Roger Michaelides, 2020–2022
(*now: Asst. Professor, Washington University in St. Louis*)

Tasha Snow, 2021–2024
(*now: Asst. Researcher, NASA Goddard/U. Maryland*)

Benjamin Hills, 2023–present

Joanna Millstein, 2023–present

Graduate Students

Jared Klemm (PhD), Geophysics, 2020–2021
(*post Mines: Software Engineer II, Atmospheric and Environmental Research*)

Kayla Hubbard (MS-NT), Hydrologic Science & Engineering, 2020–2021
(post Mines: Science Assistant, Arctic Sciences Section, National Science Foundation)

Elena Savidge (PhD), Geophysics, 2020–2024

Wilson Sauthoff (PhD), Hydrologic Science & Engineering, 2020–present

Hannah Verboncoeur (PhD), Geophysics, 2021–present

Bailey Mullett (MS-NT), Hydrologic Science & Engineering, 2022–2024

Gabriel Thomas (MS), Hydrologic Science & Engineering, 2022–2024
co-advised with Kamini Singha

Rachel Willis(PhD), Geophysics, 2023–present

Zachary Katz (PhD), Geophysics, 2023–present

Samara Omar (PhD), Geophysics, 2024–present
co-advised with Jeff Shragge

Rohaiz Haris, Geophysics, 2024–present

Marianna Marquardt, Geophysics, 2024–present

Undergraduate Research

Matt Oleszko, Geophysics, 2019–2021
(post-Mines step: Radar Processing Engineer, The Aerospace Corporation)

Anna Valentine, Geophysics, 2020–2021

(post-Mines step: PhD student at Dartmouth College)
Becca Prentice, Geophysics, 2020–2022
(post-Mines step: PhD student at Stanford University)
Stephanie Holzschuh, Applied Math and Statistics, 2020–2021
(*post-Mines step: Data Engineer at Chevron*)
Michael Field, Geophysics, 2021–2022
(*post-Mines step: PhD student at University of Florida)*
Cash Koning, Geophysics, 2020–2023
(*post-Mines step: Polar Engineer, Earthscope Consortium)*
Venezia Follingstad, Geophysics, 2021–2023
(*post-Mines step: PhD student at University of Oregon)*
Ashleigh Miller, Geophysics, 2022–2023
(*post-Mines step: PhD student at Georgia Tech)*
Mia Jungman, Geophysics, 2023–2024
Duncan Byrne, Geophysics, 2023–present
Anastasia Horne, Applied Math & Statistics, 2023–present
Jack Logan, Geophysics, 2024–present
Lucas Holt, Geophysics, 2024–present

Senior Design
Hannah Haugen, 2021 (*post-Mines: M.S. student at U. Arizona*)
Bailey Mullett, 2022 (*post-Mines: M.S. student at Colorado School of Mines*)
Venezia Follingstad, 2022 (*post-Mines: PhD student at U. Oregon*)
Cash Koning, 2022 (*post-Mines: Polar Engineer, Earthscope Cosortium*)
Dawn Lipfert, 2024

Visiting Students
Emma Pearce (PhD), University of Leeds, 2019
Joanna Millstein (PhD), MIT, 2021–2023
Ellie Abrahams (PhD), University of California Berkeley, 2022
Eojin Lee (UG), Columbia University, 2022–2023
Sawyer Kaarto (UG), Red Rocks Community College, 2022

Dissertation Committee Membership
Jason Drebber (2024–present) Mines, Department of Geology & Geological Engineering
Kate Huelse (2024–present) Mines, Department of Civil & Environmental Engineering
Ellie Longar (2024–present) Mines, Department of Geology & Geological Engineering
Ellie Miller (2024–present) Mines, Department of Geology & Geological Engineering
Isabelle Peter (2024–present) Mines, Department of Civil & Environmental Engineering
Nicholas Dorogy (2023–present) Mines, Department of Geophysics
Ari Koshkin (2023–present) Mines, Hydrologic Science & Engineering
Ahmad Tourei (2023–present) Mines, Hydrologic Science & Engineering
Melody Zhang (2021–present) Mines, Department of Geology & Geological Engineering
Devon Dunmire (2020–2022) U. Colorado Boulder, Atmospheric & Ocean Sciences
Chloe Gustafson (2020) Columbia U., Lamont-Doherty Earth Observatory

Masters Thesis Committee Membership
Rishi Banerjee (2023–2024) U. Manitoba, Earth Observation Science

Teaching Experience

Colorado School of Mines, Golden, CO

Instructor of Record

GPGN573: Polar Cryosphere in the Earth System	Fall 2024
GPGN486: Geophysics Field Camp	Summer 2024
GPGN470/570: Applications of Remote Sensing	Spring 2024
CSCI303: Data Science	Spring 2024
GPGN486: Geophysics Field Camp	Summer 2023

GPGN470/570: Applications of Remote Sensing — Spring 2023
GPGN598b: Polar Cryosphere in the Earth System — Fall 2022
GPGN486: Geophysics Field Camp — Summer 2022
GPGN470/570: Applications of Remote Sensing — Spring 2022
GPGN599: Ice Dynamics at Whillans Ice Stream — Spring 2022
GPGN470/570: Applications of Remote Sensing — Spring 2021
GPGN101: Geophysics & Society — Spring 2021
GPGN599: Antarctic groundwater modeling — Spring 2021
GPGN470/570: Applications of Remote Sensing — Spring 2020
GPGN101: Geophysics & Society — Spring 2020
GPGN498A/C: Geophysical Remote Sensing — Spring 2019

Co-Instructor

GEGN584: Field Methods in Hydrology — *Fall 2023*
GEGN584: Field Methods in Hydrology — Fall 2022
GPGN498: Electrical & Electromagnetic Methods & Applications — Spring 2022
GPGN486: Geophysics Field Camp — Summer 2021
GPGN486: Geophysics Field Camp — Summer 2019
Cryospheric Science with ICESat-2 Hackweek 2019, U. Washington — July 2019

Scripps Institution of Oceanography, La Jolla, CA

Co-Instructor

SIO115: Ice and the Climate System — Winter 2017
GMT Workshop for geodynamics REU students — June 2016

Teaching Assistant

Remote Sensing — Spring 2013
Instructors: Dr. David Sandwell, Dr. Helen Fricker

Dartmouth College, Hanover, NH

Teaching Assistant

Dartmouth College Field Program — Fall 2009
Glaciology, Quaternery Geology, Structure and Geologic Mapping
Instructors: Dr. Bob Hawley, Dr. Erich Osterberg, Dr. Meredith Kelly
Ecological Agriculture — Summer 2009
Instructors: Dr. Jill Mikucki, Dr. Sarah Smith
Glaciology — Spring 2009
Instructor: Dr. Robert Hawley
Polar Geobiology — Fall 2009
Instructor: Dr. Jill Mikucki
Introduction to Computer Science — Spring 2006
Instructor: Dr. Thomas Cormen

Laboratory Teaching Assistant

Mineralogy — Summer 2007
Instructor: Dr. Ed Meyer

Grader

Differential Equations — Winter 2008

Invited Talks

Big Data, meet Long Data: Examining decadal-scale variability of ice-ocean-freshwater processes in Antarctica
Mines Research Council Seminar 13 Mar. 2024

Big Data, meet Long Data: Examining decadal-scale variability of ice-ocean-freshwater processes in Antarctica
Caltech Division of Geological and Planetary Sciences Seminar 4 Mar. 2024

Centering community at scientific meetings: 30 years of the West Antarctic Ice Sheet Workshop
AGU Fall Meeting 2023 11 Dec. 2023

Cryosphere@Mines
Finnish Ambassador Visit to Colorado School of Mines 13 Jun. 2023

Subglacial Secrets: What drilling holes through the Antarctic ice sheet can teach us about the past, present, and future of ice
Osher Lifelong Learning Institute, University of Denver 4 May 2023

Source to sink: Tracing freshwater beneath the Antarctic ice sheet
Colorado School of Mines Department of Geophysics Heiland Lecture 7 Mar. 2023

Technology at the coast: Probing for ice-water-ocean-Earth processes
National Academies's Future Directions for Southern Ocean and Antarctic Nearshore and Coastal Research Community Workshop 9 Feb. 2023

Glaciology at Mines
Colorado School of Mines Student Society of Geophysicists 16 Sep. 2022

Glaciology at Mines
Tulane University Research Experiences for Undergraduates 15 Jul. 2022

Twelve years of exploring subglacial Antarctica
Dartmouth College Journeys 18 Jun. 2022

Process2Paleo: Connecting modern observations to the geologic record to explore the life and death of a subglacial lake
Scripps Polar Hour 28 Oct. 2021

Slippery when wet: Exploring the hydrosphere beneath the Antarctic ice sheet
Colorado State Antarctic Lecture Series 19 Oct. 2021

Glaciology data volumes and data rates in Antarctica
2021 Antarctic Subsea Cable Workshop 28 Jun. 2021

What lies beneath: Exploring the hydrosphere beneath the Antarctic ice sheet
Delaware County Institute of Science 8 Feb. 2021

(Seminar on SALSA subglacial lake results)
British Antarctic Survey Jun. 2020
[seminar canceled due to COVID19]

(Seminar on ICESat-2 results)
Newcastle University Jun. 2020
[fellowship delayed to COVID19; seminar canceled]

(Seminar declined due to COVID)
Stanford Geophysics Seminar 4 Jun. 2020

Antarctica at Depth: New observations of subglacial water beneath ice streams
CU Boulder INSTAAR Noon Seminar 16 Mar. 2020
[canceled due to COVID19]

U.S. work int he Ross Sea Sector
International Ross Sea Region Collaboration Workshop, Korea 21 Jul. 2019

Antarctica at Depth: Drilling for Subglacial Access
U.S. Ice Drilling Program's School of Ice 24 June 2019

SALSA – A Field Debrief
Stanford University Cryospheric Scientists 12 Feb. 2019

Slippery When Wet: Dynamic subglacial hydrology and the Antarctic ice sheet
Department of Geosciences Research Seminar, Boise State University 26 Apr. 2018

Building a "Long Data" perspective to examine decadal-scale variability in Antarctica
Geophysics Seminar, Colorado School of Mines 4 Apr. 2018
Deep, Dark, and Wet: Dynamic subglacial hydrology in Antarctica
Earth & Planetary Science Seminar, Washington University in St. Louis 1 Feb. 2018
Piecing together a "Long Data" perspective to examine Antarctic ice-sheet variability
Earth and Climate Seminar, University of Maine 25 Oct. 2017
Piecing together a "Long Data" perspective in Antarctica to understand ice-sheet variability
SIO Research Seminar, Scripps Institution of Oceanography 31 Aug. 2017
Subglacial hydrology, basal processes, and velocity transients in Antarctica
Ice Sheet System Model Workshop 23 Jun. 2016
Antarctic subglacial hydrology: A review
IDPO Subglacial Access Working Group Workshop 21 May 2016
Episodic hydrology, episodic ice streams: Unraveling the impact of active subglacial lakes in Antarctica
Earth Section Seminar, University of California, Santa Cruz 10 May 2016
Unraveling the impact of dynamic subglacial lake drainage in Antarctic
Geophysics Seminar, Scripps Institution of Oceanography 22 Apr. 2016
Planes, penguins, and cookies: Scientific outreach from Antarctica
GPS and the Cyrosphere, 2016 UNAVCO Science Workshop 29 Mar. 2016
Dynamic subglacial hydrology in Antarctica: timescales, evolution, and impacts
Geophysics Seminar, Stanford University 1 Mar. 2016
Extending the episodic hydrology record across Antarctica
West Antarctic Ice Sheet Workshop 19 Sep. 2015
Peering under the ice to the Antarctic Slip 'n' Slide
UCSD Extension: Environmental Leadership & Sustainability 06 Jul. 2015
Investigating coupled subglacial hydrologic and ice dynamic evolution using ground- and satellite-based observations
Center for Climate Sciences Research Seminar, NASA-JPL 19 Jun. 2015
Using CryoSat-2 to retrieve dynamic surface changes (& observations of stick-slip motion)
IGPP Geodesy Seminar, Scripps Institution of Oceanography 22 Apr. 2015
A decade of progress observing and modeling Antarctic subglacial water systems
Subglacial Antarctic lake exploration: first results and future plans, The Royal Society [H. Fricker invited; M.R.S. presented] 30 Mar. 2015
Understanding the Antarctic Slip 'n' Slide
Scripps Donor Brunch, Scripps Institution of Oceanography 1 Mar. 2015
Highlights and reflections on The Workshop and beyond
CMBC Brown Bag, Scripps Institution of Oceanography 3 Jun. 2014
Instability of the Amundsen Sea Embayment
Climate Journal Club, Scripps Institution of Oceanography 22 May 2014
WISSARD: Progress, Pictures, and Prospects
Scripps Polar Seminar, Scripps Institution of Oceanography 4 Jun. 2013
GLAS accuracy and elevation change at Summit, Greenland
Geolunch Brown Bag Series, Dartmouth College 11 May 2010

Professional Service

Committee Service

- NASA SWOT Mission, Science Team, Member, 2024–present
- NASA Surface Topography and Vegetation Mission Incubation, Science Team, 2023–present
- Ice Drilling Program Science Advisory Board, Member, 2023–present
- NASA ICESat-2 Mission, Science Team, Member, 2021–present
- IRIS/UNAVCO, Polar Science Technology, Co-Chair, 2021–present
- IRIS/UNAVCO, Polar Science Technology Committee, Member, 2018–2020
- NASA IceBridge Mission, Science Team, Member, 2017–2020
- American Meteorological Society Committee on Polar Meteorology and Oceanography,

Member, Jan. 2017–2020
- OpenAltimetry User Working Group, Member, Jun. 2017–present
- NASA ICESat-2 Science Definition Team, Participant, 2011–2020

Editorial Service
- Scientific Editor, *Journal of Glaciology*, 2019–present
- Section Editor for Cryosphere, *Encyclopedia of Ocean Sciences, 3rd Ed.*

Referee Service
- Journals: *Nature, Nature Geoscience, Nature Communications, Geophysical Research Letters, Journal of Glaciology, Annals of Glaciology, The Cryosphere, IEEE Transactions on Geoscience and Remote Sensing, IEEE Geoscience and Remote Sensing Letters, Remote Sensing of Environment, International Journal of Remote Sensing, Journal of Applied Remote Sensing*
- Proposals: *NASA Earth Science (panel member, ad hoc), NASA Earth Science Data Systems (panel member), NASA Planetary Science (panel member), NASA Science Mission Directorate (panel member), NSF Antarctic Sciences (ad hoc), Royal Society of New Zealand (ad hoc), UK Natural Environment Research Council (ad hoc), Netherlands Space Office (ad hoc)*

Conference Service
- Organizing Committee: *West Antarctic Ice Sheet Workshop*, 2019–present.
- Local Organizing Committee: *International Symposium on Five Decades of Radioglaciology* (International Glaciological Society, Stanford, CA, 24–28 Jun. 2019); *International Symposium on Interactions of Ice Sheet and Glaciers with the Ocean* (IGS/FRISP, La Jolla, CA, 10–15 Jul. 2016); *Ice Sheet System Model Workshop* (JPL/ NASA, La Jolla, CA, May 2016), *Scripps Student Symposium* (SIO, La Jolla, CA, 24 Sep. 2015); *ICESat-2 Science Definition Team Meeting* (NASA, La Jolla, CA, 24–25 Feb. 2015); *Sea Level Change Team PI Meeting* (NASA, La Jolla, CA, 14–16 Oct. 2014), *West Antarctic Ice Sheet Workshop* (NSF/NASA, Julian, CA, 24–27 Sep. 2014); *International Symposium on Interactions of Ice Sheet and Glaciers with the Ocean* (IGS/FRISP, La Jolla, CA 5–10 Jun. 2011)
- Session Chair: *Archives and Observations From Sub-Ice Environments* (AGU Fall Meeting 2021, 2022, 2023); *Sub-Ice-Sheet and Sub-Ice-Shelf Environments: Bridging the Gap Between Modern Observations and Geologic Records* (AGU Fall Meeting 2019, 2020); *Cryosphere/Sea-Level* (2018 UNAVCO Science Workshop); *Advances in understanding processes at the beds of glaciers and ice sheets* (AGU Fall Meeting 2015, 2016, 2017); *IgniteIGS—Early career perspectives on the future of ice-ocean research* (IGS La Jolla 2016); *Greenland Run-off* (IGS La Jolla 2016)
- Judging: *Flash Freeze Cryosphere Innovation Award for Students* (AGU Fall Meeting 2017); *Outstanding Student Presentation Award* (AGU Fall Meeting 2017)

White Papers
- *CryoCloud: Accelerating Discovery for NASA Cryosphere Communities with Open-Cloud Infrastructure*, submitted to NASA NNH23ZDA005L: Request for Information: Scientific Data and Computing Architecture to Support Open Science, 2023. [available here]
- *2021 Antarctic Subsea Cable Workshop Report: High-Speed Connectivity Needs to Advance US Antarctic Science*, submitted to National Science Foundation Office of Polar Programs, 2021.
- *Dive, Dive, Dive: Accessing the Subsurface of Ocean Worlds*, submitted to the NASA Planetary Science Decadal Survey, 2020.
- *Early Career Community Vision For Future Magnetotelluric Facility*, submitted to the National Science Foundation in preparation for a competition for a future unified geophysical facility, 2020.
- *An Early Career Investigator Community Vision for the Future NSF Geophysical Facility: Instrumentation Services Needs*, submitted to the National Science Foundation in prepa-

ration for a competition for a future unified geophysical facility, 2020.

- *Assessment of East Antarctic Ice Sheet sensitivity to warming and its potential for contributions to sea level rise*, submitted to U.S. Ice Drilling Program Subglacial Access Working Group, 2019.
- *Access Drilling Priorities in the Ross Ice Shelf Region*, submitted to U.S. Ice Drilling Program Subglacial Access Working Group, 2019.
- *How much, how fast? A decadal science plan quantifying the rate of change of the West Antarctic Ice Sheet now and in the future*, submitted to NSF Office of Polar Programs, 2016.

University Service

Colorado School of Mines

Mines Geophysics Undergraduate Advisory Committee, 2022–present
Mines Geophysics Field Camp Director, 2021–present
Mines Geophysics ReImagine Committee, 2021–present
Mines Geophysics Safety Committee, 2021–present
Geophysics GP100@100 Fundraising , 2021–present
Geophysics Diversity, Inclusion, & Access Committee, committee chair, 2019–present
Mines Diversity Council, 2019–present
Mines Field Session Compensation Task Force, 2022
Geophysics Graduate Advisory Committee, member, 2019–2022
Faculty Search Committee: Computational Science & Data Analytics Cluster, 2020–21
Applied Data Science & Machine Learning, subcommittee chair
Computation Hydrology, subcommittee member
#idigmines, department representative, 2019–2020
Faculty Search Committee: Geophysical Data Science, 2019–2020

Stanford University

Postdoctoral Scholar Committee for School of Earth Strategic Plan, member, 2017

Scripps Institution of Oceanography

Leadership Committee for Peer Mentor Program, founding student member, 2014–2016
Scripps Polar Seminar, lead organizer, 2013–2016
Scripps Earth Section Seminar, co-organizer 2012–2013

Dartmouth College

Faculty Search Committee: Geomorphology, student representative, 2008
Faculty Search Committee: Remote Sensing student representative, 2007

Significant Field Experience

Pingo Canadian Landmark, Surface Geophysics — 2023
Mines Lead

Alaskan North Slope, Surface Geophysics — 2021
Mines Lead

Whillans Ice Plain, West Antarctica, Surface Geophysics — 2019–2020
Expedition Lead, Field Medic

Greenland, Airborne Geophysics (Operation IceBridge) — 2019
Mission Science Team member visit

Whillans Ice Plain, West Antarctica, Surface Geophysics — 2018–2019
Expedition Lead, Field Medic

Whillans Ice Plain, West Antarctica, Surface Geophysics — 2017–2018
Expedition Lead, Field Medic

Whillans Ice Plain, West Antarctica, Surface Geophysics — 2016–2017
Expedition Lead, Field Medic

Ross Ice Shelf, Antarctica, Airborne Geophysics — 2015
Flight Scientist, Data Engineer

Whillans Ice Plain, West Antarctica, Surface Geophysics *Expedition Lead, Field Medic*	2014–2015
Whillans Ice Plain, West Antarctica, Surface Geophysics *GPS Team Leader, Field Medic*	2013–2014
Whillans Ice Plain, West Antarctica, Surface Geophysics *Surface Geophysics Team Leader, Field Medic*	2012–2013
Whillans Ice Plain, West Antarctica, Surface Geophysics	2011–2012
Northern New Mexico, Southern Colorado, Geology and Geomorphology *Field Trip Organizer and Leader*	2010
Cherryfield, Maine, Fluvial Geomorphology & Riparian Habitat Surveying	2009
Banff National Park, Alberta, Canada, Glaciology	2008
Montana, Idaho, Eastern Washington, Geology	2008
Ischia Island, Italy, in situ Geochemical Analysis	2008
Puerto Rico, Soil and Water Sampling	2007
Western United States, Dartmouth Earth Sciences Field Camp	2006
Hawaii, Volcanology and Remote Sensing	2006

Honors and Awards

Colorado School of Mines
- Diversity Progress Report President's Choice Award, 2023
- Mines Research Council's Excellence in Research Award (Junior Faculty), 2022–2023
- Mines Earth & Society Programs Outstanding Assistant Professor Award, 2022–2023
- University Public Policy Fellow, inaugural cohort, 2022–2023
- Outstanding Mines Faculty Award, 2021–2022
- Department of Geophysics T.K. Young Geophysics Leadership Award, 2021

National Science Foundation
- NSF CAREER Award recipient, 2022
- Mentor for NSF Graduate Research Fellowship Program recipient (H. Verboncoeur), 2022

National Aeronautics and Space Administration
- Robert H. Goddard Award as part of the Operation IceBridge Science Team, 2020
- Group Achievement Award as part of the ICESat-2 Mission Science Team, 2020

National Sciences and Engineering Research Council of Canada
- Mentor for NSERC Graduate Scholarship–Doctoral Recipient (E. Savidge), 2021

American Geophysical Union
- Editors' Citation for Excellence in Refereeing, Geophysical Research Letters, 2019

West Antarctic Ice Sheet Workshop
- Mentor for Best Student Presentation recipient (H. Verboncoeur), 2021
- Best Student Presentation recipient, 2013

Scripps Institution of Oceanography
- Student Video Challenge award winner, 2014
- Director's Cabinet Quarterly Meeting invited presenter, May 2014

Pontifical Academy of Sciences/Pontifical Academy of Social Sciences
- *Sustainable Humanity, Sustainable Nature: Our Responsibility*
- Joint Workshop invited observer, May 2014

United States Congress
- Antarctic Service Medal recipient, 2012

Dartmouth College
- NASA Space Grant Graduate Student Award, 2010
- Aisstant Curator for Dana Collection of Minerals, 2007-2008

Professional Memberships

American Geophysical Union, 2008–present
International Glaciological Society, 2010–present
Society for Advancement of Chicanos/Hispanics and Native Americans in Science 2019–present

Institute of Electrical and Electronics Engineers, 2020–present
American Meteorological Society, 2017–2019
Sigma Xi, 2023–present

Conference Abstracts

* *indicates student or postdoctoral advisee*
† *indicates M.R.S. presenting author*
‡ *indicates contributed equally as co-first author*

[224] *Alfaraj, H., S. B. Zaqr*, C. Thomas*, B. S. Murphy, A. Miller*, B. Mullett, B. Passerella, B. Dugan, M. R. Siegfried and Colorado School of Mines 2023 Geophysics Field Camp, 2023. Magnetotelluric Imaging of the Northern Extension of the Rio Grande Rift in Colorado, *AGU Fall Meeting*.

[223] Bryant, M., A. Borsa, C. C. Masteller, R. J. Michaelides*, M. R. Siegfried and A. Young, 2023. Mapping coastal morphology and retreat rates along the Beaufort Sea Coast using high-resolution satellite elevation measurements, *AGU Fall Meeting*.

[222] *Follingstad, V., R. J. Michaelides*, M. R. Siegfried, K. Hughson, J. Bradford, A. Kubas, E. Quartini, A. Mullen, A. Routt, B. Schmidt, H. G. Sizemore and A. Swidinsky, 2023. Quantifying the Surface Deformation of Pingos on the Alaskan North Slope using Interferometric Synthetic Aperture Radar (InSAR), *AGU Fall Meeting*.

[221] *Howard, J., J. McCall*, B. S. Murphy, J. D. Pepin, A. Miller*, B. Mullett*, B. Passerella, B. Dugan, M. R. Siegfried and Colorado School of Mines 2023 Geophysics Field Camp, 2023. Shallow Magnetotelluric Soundings for Developing a Hydrogeological Conceptual Model of the Steamboat Basin and North Park, Colorado, *AGU Fall Meeting*.

[220] Hughson, K., B. Schmidt, M. R. Siegfried, J. Bradford, A. Kubas, A. Routt, V. Follingstad*, R. J. Michaelides*, A. Swidinsky, A. Mullen, E. Quartini and H. G. Sizemore, 2023. Exploring the Diversity of Pingo Morphology and Structure: A Comparative Analysis of Pingos in the Alaskan and Canadian Arctics, *AGU Fall Meeting*.

[219] Kubas, A., A. Routt, K. Hughson, M. R. Siegfried, J. Bradford, V. Follingstad*, A. D. Mullen, A. Swidinsky, E. Quartini, H. G. Sizemore, R. J. Michaelides* and B. Schmidt, 2023. Exploring Alien Ice Hills: Terrestrial Pingos as Analogs for Planetary Hydrology, *AGU Fall Meeting*.

[218] *Michaelides, R. J., M. R. Siegfried, J. Lovekin, K. Berry, D. L. Roth and B. Dugan, 2023. Wildfire Progression Time Series Mapping with Interferometric Synthetic Aperture Radar (InSAR), *AGU Fall Meeting*.

[217] *Miller, A., H. Verboncoeur*, E. Reddy and M. R. Siegfried, 2023. Glaciers in the South: A Comprehensive Framework for Evaluating Public School District Capacities for Cryosphere Education, *AGU Fall Meeting*.

[216] Noh, K., A. Swidinsky, K. Hughson, B. Schmidt, M. R. Siegfried, J. Bradford, A. Kubas, E. Quartini, A. Routt, V. Follingstad*, R. J. Michaelides*, A. Mullen and H. G. Sizemore, 2023. Can time-domain electromagnetics be used to characterize cryo-hydrogeological systems on Mars and Ceres? Insights from the Canadian Arctic, *AGU Fall Meeting*.

[215] Ryan, J., B. Medley, C. M. Stevens, T. C. Sutterley and M. R. Siegfried, 2023. Role of snowfall on Greenland Ice Sheet melt-albedo feedbacks, *AGU Fall Meeting*.

[214] Wagner, T. J. W., N. Sartore, N. Pujara, M. R. Siegfried and L. Zoet, 2023. The role of footloose-type calving at the front of the Ross Ice Shelf, *AGU Fall Meeting*.

[213] *Sauthoff, W., M. R. Siegfried, B. E. Smith and R. Venturelli, 2023. Altimetry-based, surface-deformation delineation algorithm reveals tens of new active subglacial lake candidates across Antarctica, *AGU Fall Meeting*.

[212] *Savidge, E., T. Snow* and M. R. Siegfried, 2023. Multi-decadal Record of Sensible-Heat Polynya Variability from Satellite Optical and Thermal Imagery at Pine Island Glacier, West Antarctica, *AGU Fall Meeting*.

[211] Schroeder, D. M. and M. R. Siegfried, 2023. Enabling Subglacial Geodesy Through High-Precision Radar Sounding and GNSS Time Series Observations, *AGU Fall Meeting*.

[210] Siegfried, M. R., L. Miller, K. A. Christianson, I. Das, J. A. MacGregor, E. MacKie, B. Medley and P. D. Neff, 2023. Centering community at scientific meetings: 30 years of the West Antarctic Ice Sheet Workshop, *AGU Fall Meeting*, [invited].

[209] Smith, B. E., B. Medley, T. C. Sutterley, N. Holschuh, M. R. Siegfried and T. Neumann, 2023. Mass balance of Antarctica and Greenland from two decades of laser-altimetry measurements, *AGU Fall Meeting*.

[208] *Snow, T., M. R. Siegfried, M. Zhao, A.-S. Zinck, W. Sauthoff*, L. Bachelot, S. L. Howard, L. Padman, A. Harris, S. Grigsby, E. Abrahams*, W. Zheng and W. Abdalati, 2023. Observing persistent polynyas at the Antarctic coastline with year-round ICESat-2 surface elevations and Landsat temperature fields, *AGU Fall Meeting*.

[207] *Snow, T., J. D. Millstein*, W. Sauthoff*, J. Scheick, J. Colliander, W. J. Leong, J. Munroe, F. Perez, D. Felikson, T. C. Sutterley, M. Fisher, F. Sapienza, E. Abrahams, W. Zheng and M. R. Siegfried, 2023. Accelerating scientific discovery for NASA Cryosphere communities with the CryoCloud JupyterHub, *AGU Fall Meeting*.

[206] *Snow, T., J. Millstein*, W. Sauthoff*, J. Scheick, W. J. Leong, J. Colliander, J. Munroe, F. Perez, D. Felikson, T. C. Sutterley, M. Fisher, F. Sapienza, E. Abrahams, W. Zheng and M. R. Siegfried, 2023. CryoCloud JupyterHub for NASA Cryosphere communities: Open science in the cloud as a process, not a product, *AGU Fall Meeting*.

[205] Tarzona, A., W. Chu, H. Verboncoeur*, M. R. Siegfried, D. M. Schroeder, A. Altaweel, B. Amaro and K. Tran, 2023. Improved Vertical Calibration of the Historical SPRI-NSF-TUD Airborne Radar Echo Sounding Ice Thickness Measurements at Ross Ice Shelf, Antarctica, *AGU Fall Meeting*.

[204] Venturelli, R., W. Sauthoff*, M. R. Siegfried, T. J. Vick-Majors, C. Davis and B. E. Rosenheim, 2023. Antarctic subglacial lakes as repositories of Holocene ice-ocean interaction, *AGU Fall Meeting*.

[203] *Verboncoeur, H., M. R. Siegfried, J. P. Winberry, N. Holschuh, D. Byrne*, W. Sauthoff*, T. C. Sutterley and B. Medley, 2023. Multidecadal signals of dynamic thickness change in the Crary Ice Rise region driven by century-scale reorganization of the southern Ross Sea sector ice streams, *AGU Fall Meeting*.

[202] Sartore, N., T. Wagner, N. Pujara, M. R. Siegfried and L. Zoet, 2023. The role of footloose-type calving at the front of the Ross Ice Shelf, *West Antarctic Ice Sheet Workshop*.

[201] *Savidge, E., T. Snow* and M. R. Siegfried, 2023. Multi-decadal Record of Sensible-Heat Polynya Variability from Satellite Optical and Thermal Imagery at Pine Island Glacier, West Antarctica, *West Antarctic Ice Sheet Workshop*.

[200] *Snow, T., M. R. Siegfried, M. Zhao, A.-S. Zinck, W. Sauthoff*, L. Bachelot, S. Howard, L. Padman, A. Harris, S. Grigsby, E. Abrahams*, W. Zheng and W. Abdalati, 2023. Observing persistent polynyas at the Antarctic coastline with year-round ICESat-2 surface elevations and Landsat temperature fields, *West Antarctic Ice Sheet Workshop*.

[199] Tarzona, A., W. Chu, H. Verboncoeur*, M. R. Siegfried, D. Schroeder, A. Altaweel, B. Amaro and K. Tran, 2023. Extraction of Ice Thickness Measurements from Digitized Historical SPRI-NSF-TUD Airborne Radar Echo Sounding at Ross Ice Shelf, Antarctica through Computer Vision Algorithms, *West Antarctic Ice Sheet Workshop*.

[198] Schroeder, D. M. and M. R. Siegfried, 2023. Enabling Subglacial Geodesy Through High-Precision Radar Sounding and GNSS Time Series Observations, *Scientific Committee on Antarctic Research INStabilities & Thresholds in ANTarctic (INSTANT) Conference 2023*.

[197] Siegfried, M. R., M. Dinniman and W. Sauthoff*, 2023. Tracing Antarctic freshwater from the grounding zone to the ice front in the Ross Embayment, *Scientific Committee*

on Antarctic Research INStabilities & Thresholds in ANTarctic (INSTANT) Conference 2023.

[196] Siegfried, M. R., M. Dinniman and W. Sauthoff*, 2023. Tracing Antarctic freshwater from the grounding zone to the ice front in the Ross Embayment, *Southern Ocean Observing System Symposium 2023: Southern Ocean in a Changing World*.

[195] Rosenheim, B., R. Venturelli, C. Davis, A. Michaud, B. Boehman, B. Christner, V. Galy, D. Harwood, A. Leventer, W. Li, Z. Liu, T. Vick-Majors, M. R. Siegfried, J. Priscu and the SALSA Science Team, 2023. Millennial scale marine incursion into an isolated environment fuels a contemporary subglacial microbial community beneath the West Antarctic Ice Sheet, *Geochemical Society Goldschmidt Conference*.

[194] *Sauthoff, W., M. R. Siegfried and B. E. Smith, 2023. Surface-deformation delineation algorithm reveals subglacial lake candidates and underestimates of subglacial volume fluxes, *International Glaciology Society Symposium on the Edges of Glaciology*.

[193] Siegfried†, M. R., R. A. Venturelli†, M. O. Patterson, W. Arnuk, T. D. Campbell, C. D. Gustafson, A. B. Michaud, B. K. Galton-Fenzi, M. B. Hausner, S. N. Holzschuh*, B. Huber, K. D. Mankoff, D. M. Schroeder, P. Summers, S. Tyler, S. P. Carter, H. A. Fricker, D. M. Harwood, A. Leventer, B. E. Rosenheim, M. L. Skidmore, J. C. Priscu and the SALSA Science Team, 2023. The life and death of a subglacial lake in West Antarctica, *International Glaciology Society Symposium on the Edges of Glaciology*.

[192] *Verboncoeur, H., M. R. Siegfried, J. P. Winberry, N. Holschuh and W. Sauthoff*, 2023. Multidecadal signals of dynamic thickness change in the Crary Ice Rise region driven by century scale reorganization of the Siple Coast ice Streams, *2nd Annual Colorado Glaciology Workshop*.

[191] *Snow, T., J. Millstein*, W. Sauthoff*, J. Colliander, C. Holdgraf, F. Pérez and M. R. Siegfried, 2023. Accelerating Discovery for NASA Cryosphere Communities with JupyterHub, *JupyterCon*.

[190] *Snow, T., J. Millstein*, W. Sauthoff*, J. Colliander, C. Holdgraf, F. Pérez and M. R. Siegfried, 2023. Accelerating Discovery for NASA Cryosphere Communities with Open-Cloud Infrastructure, *American Meteorological Society Annual Meeting*.

2022

[189] *Abrahams, E., T. Snow*, E. Lee*, W. Zheng, M. Field*, E. Savidge*, F. Sapienza, S. Grigsby*, J. Taylor, M. R. Siegfried, and F. Pérez, 2022. Automated Detection of West Antarctic Persistent Polynyas with Multiband Remote Sensing Imagery, *AGU Fall Meeting*.

[188] Bryant, M., E. J. Anderson, A. A. Borsa, C. C. Masteller, R. J. Michaelides*, M. R. Siegfried and A. Young, 2022. Integrating ICESat-2 altimetry, optical imagery, and digital elevation models to measure erosion rates and coastal morphology along the Alaskan Beaufort Sea Coast, *AGU Fall Meeting*.

[187] *Field, M., T. Snow*, E. Abrahams*, E. Lee*, C. Baumhoer and M. R. Siegfried, 2022. Mapping Ice Shelf Calving Fronts at Thwaites Glacier using Deep Learning and Satellite Imagery in a Cloud-Based Workflow, *AGU Fall Meeting*.

[186] Medley, B., T. C. Sutterley, M. E. Dattler, J. Lenaerts, T. B. Overly, J. Ryan, M. R. Siegfried, C. M. Stevens, M. Thompson-Munson and N. Wever, 2022. Constraining surface mass balance, firn air content, ICESat-2 volume change, and GRACE/-FO mass change to improve ice-sheet mass balance estimates, *AGU Fall Meeting*.

[185] Roth, D. L., G. Jin, M. Bezada, A. Titov, C. C. Masteller, B. Tate and M. R. Siegfried, 2022. The Sound of Water: Spatially Continuous River Monitoring Through Distributed (Hydro)Acoustic Sensing, *AGU Fall Meeting*.

[184] *Sauthoff, W., M. R. Siegfried and B. E. Smith, 2022. CryoSat-2/ICESat-2 integrated time series and comparison of shoreline evolution in Antarctic active subglacial lakes,

AGU Fall Meeting.

[183] *Savidge, E., T. Snow*, M. R. Siegfried, Y. Zheng, B. Villas Bôas, G. Bortolotto, L. Boehme and K. E. Alley, 2022. Wintertime Polynya Structure and Variability at Pine Island Glacier, West Antarctica, from Thermal Remote Sensing and Seal-borne Observations, *AGU Fall Meeting*.

[182] Stubblefield, A. G., W. Sauthoff*, M. R. Siegfried, M. W. Spiegelman and C. Meyer, 2022. Reconstructing subglacial lake activity with physics-based altimetry inversions, *AGU Fall Meeting*.

[181] *Snow, T., A. Wåhlin, B. Queste, G. Bortolotto, L. Boehme, E. Savidge*, E. Abrahams, M. R. Siegfried and W. Abdalati, 2022. Pairing eyes in the sky with instruments in the deep: mapping the Antarctic Coastal Current in the Amundsen Sea, *AGU Fall Meeting*.

[180] Tarzona, A., W. Chu, H. Verboncoeur*, M. R. Siegfried, D. M. Schroeder, L. Combs, A. Prabu, A. Altaweel and K. Tran, 2022. Geographical Repositioning Efforts and Vertical Calibration of Z-scopes from SPRI-NSF-TUD surveys at Ross Ice Shelf, Antarctica, *AGU Fall Meeting*.

[179] Venturelli, R., B. Boehman, C. Davis, J. Hawkings, S. E. Johnston, C. Gustafson, A. B. Michaud, C. Mosbeux, M. R. Siegfried, T. Vick-Majors, V. Galy, R. G. Spencer, S. Warny, B. Christner, J. E. Dore, H. A. Fricker, D. M. Harwood, A. Leventer, J. C. Priscu, M. L. Skidmore, B. E. Rosenheim and the SALSA Science Team, 2022. Constraints on the Timing and Extent of Deglacial Grounding Line Retreat in West Antarctica from Subglacial Sediments, *AGU Fall Meeting*.

[178] *Verboncoeur, H., M. R. Siegfried, P. Winberry, N. Holschuh, A. Tarzona, W. Chu and D. Schroeder, 2022. Leveraging Multidecadal Remote Sensing Data to Evaluate Interactions Between Century-Scale Ice-Dynamics and the Local Evolution of Crary Ice Rise, *AGU Fall Meeting*.

[177] Zheng, W., F. Pérez, C. Holdgraf, E. Sundell, M. R. Siegfried, T. Snow*, S. Grigsby, F. Sapienza, J. Taylor and the Executable Books Community, 2022. Jupyter Book-based Supplemental Material: a FAIR Practice to Connect Research Articles with Scientific Data, *AGU Fall Meeting*.

[176] Zheng, W., F. Sapienza, M. R. Siegfried, S. Grigsby, T. Snow*, F. Pérez and J. Taylor, 2022. Mapping dynamic mass loss by fully decomposing glacier elevation change, *AGU Fall Meeting*.

[175] Millstein, J., T. Snow*, W. Sauthoff*, J. Colliander, C. Holdgraf, F. Pérez, T. Sutterley and M. R. Siegfried, 2022. Accelerating Discovery for NASA Cryosphere Communities with Open-Cloud Infrastructure, *ICESat-2 Open Science Conference*.

[174] *Sauthoff, W., M. R. Siegfried and B. E. Smith, 2022. ICESat-2-extended time series of subglacial volume fluxes using time-variable shorelines of Antarctic active subglacial lakes, *ICESat-2 Open Science Conference*.

[173] Siegfried†, M. R., R. A. Venturelli†, M. O. Patterson, W. Arnuk, T. D. Campbell, C. D. Gustafson, A. B. Michaud, B. K. Galton-Fenzi, M. B. Hausner, S. N. Holzschuh*, B. Huber, K. D. Mankoff, D. M. Schroeder, P. Summers, S. Tyler, S. P. Carter, H. A. Fricker, D. M. Harwood, A. Leventer, B. E. Rosenheim, M. L. Skidmore, J. C. Priscu and the SALSA Science Team, 2022. The life and death of a subglacial lake in West Antarctica, *ICESat-2 Open Science Conference*.

[172] *Snow, T., W. Sauthoff*, M. Zhao, L. Bachelot, A.-S. Zinck and M. R. Siegfried, 2022. A tale at the coastline: paired year-round ICESat-2 and Landsat thermal infrared observations of persistent polynyas, *ICESat-2 Open Science Conference*.

[171] Hughson, K. H., B. E. Schmidt, E. Quartini, R. Michaelides*, M. R. Siegfried, A. Mullen, J. H. Bradford, J. Scully, A. Swidinsky and H. G. Sizemore, 2022. Terrestrial Pingos as morphometric and geophysical analogs for small hills on Ceres, *GSA Connects Annual*

Meeting.

[170] *Sauthoff, W., M. R. Siegfried and B. E. Smith, 2022. Variable shorelines of Antarctic active subglacial lakes reveal large underestimates of subglacial volume fluxes, *GSA Connects Annual Meeting*.

[169] Robel, A., C. Meyer, J. Sim, M. R. Siegfried and C. Gustafson, 2022. Potentially Significant Water Exfiltration from Subglacial Till Driven by Contemporary Ice Sheet Thinning, *West Antarctic Ice Sheet Workshop*.

[168] *Snow, T., A. Wåhlin, B. Queste, G. Bortolotto, L. Boehme, E. Savidge*, E. Abrahams, M. R. Siegfried and W. Abdalati, 2022. Pairing eyes in the sky with instruments in the deep: mapping the Antarctic Coastal Current in the eastern Amundsen Sea, *West Antarctic Ice Sheet Workshop*.

[167] Tarzona, A., W. Chu, H. Verboncoeur*, M. R. Siegfried, D. Schroeder, L. Combs, A. Altaweel, A. Prabu and K. Tran, 2022. Archival airborne radio-echo sounding data geographical repositioning and calibration progress at Ross Ice Shelf, Antarctica, *West Antarctic Ice Sheet Workshop*.

[166] *Verboncoeur, H., M. R. Siegfried, P. Winberry, N. Holschuh, A. Tarzona, W. Chu and D. Schroeder, 2022. Multidecadal surface elevation anomalies of the Crary Ice Rise region from combined ICESat, CryoSat-2, and ICESat-2 altimetry, *West Antarctic Ice Sheet Workshop*.

[165] Zheng, W., F. Pérez, E. Abrahams, S. Grigsby*, F. Sapienza, M. R. Siegfried, T. Snow* and J. Taylor, 2022. Recent thinning and speed-up may make the upper Pine Island Glacier more prone to diffusive thinning, *West Antarctic Ice Sheet Workshop*.

[164] *Savidge, E., T. Snow*, M. R. Siegfried, Y. Zheng, A. B. V. Bôas, G. A. Bortolotto, L. Boehme and K. E. Alley, 2022. Linking thermal remote sensing and seal-borne measurements to investigate wintertime polynya structure and variability at Pine Island Glacier, West Antarctica, *International Symposium on Ice, Snow and Water in a Warming World*.

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[147] Bryant, M., A. A. Borsa, R. J. Michaelides* and M. R. Siegfried, 2021. Exploring coupled surface hydrology and freeze-thaw dynamics around Toolik Lake, Alaska, using ICESat-2 and InSAR data, *AGU Fall Meeting*.

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