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*

[91] *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*.

[90] *Garvey, S., **M. R. Siegfried**, J. Shragge, L. Zoet, D. Hansen and N. Stevens, in review. Multi-component Rayleigh wave dispersion analysis, *Journal of Glaciology*.

[89] *Hills, B., **M. R. Siegfried**, N. Holschuh, H. Verboncoeur* and D. Schroeder, in review. Resolving radiostratigraphy with squinted synthetic aperture radar focusing, *Journal of Glaciology*.

[88] *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*.

[87] *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, *Journal of Geophysical Research: Earth Surface*.

[86] *Sauthoff, W., **M. R. Siegfried**, R. A. Venturelli and B. E. Smith, in review. Dynamic Boundaries of Antarctic Active Subglacial Lakes: Time-Evolving Outlines Reveal Underestimated Water Fluxes, *Geophysical Research Letters*.

[85] *Snow, T., A. Harris, S. Grigsby, E. Abrahams, E. Savidge*, T. Scambos, F. Pèrez, C. Shuman, W. Abdalati and **M. R. Siegfried**, in review. Application of a new Landsat sea surface temperature algorithm to the Amundsen Sea, West Antarctica, *IEEE Transactions on Geoscience and Remote Sensing*.

[84] *Willis, R., J. Grimm, F. Stanek, P. Edme, A. Fichtner, B. P. Lipovsky, P. Paitz, F. Walter, **M. R. Siegfried** and E. R. Martin, in review. Creating a Comprehensive Cryoseismic Catalog at Rhonegletscher: A Scalable Approach Using Distributed Acoustic Sensing and Machine Learning, *Machine Learning: Earth*.

[83] Matsuoka, K., G. Moholdt, J. F. Arthur, J. A. Bodart, X. Cui, F. Ferraccioli, R. Forsberg, V. Goel, T. A. Jordan, F. S. McCormack, R. Mottram, H. D. Pritchard, C. Shackleton, K. Tinto, F. Boberg, M. G. P. Cavitte, R. Drews, P. Dutrieux, J. Ebbing, O. Eisen, H. Eisermann, A. S. Gardner, C. A. Greene, N. Holschuh, S. S. R. Jamieson, B.-H. Kim, N. Krauzig, B. Kulessa, C. Leuschen, J. Li, L. Li, J. Liebsch, J. A. MacGregor, E. MacKie, A. Mahagaonkar, J. Maton, M. Morlighem, F. Navarro, P. Neff, I. N. Otosaka, F. Pattyn, A. Ruppel, R. J. Sanderson, H. Seroussi, A. Shepherd, **M. R. Siegfried**, T. Slater, A. P. Stroeven, M. Studinger, T. Teisberg, R. A. Venturelli, P. J. Winberry, C. Zhao, L. An, J. L. Bamber, R. E. Bell, R. G. Bingham, J. Brehmer-Moltmann, G. Eagles, J. Greenbaum, J. Gronset, W. S. Lee, E. L. Meur, L. M. Jon, K. Lindbäck, S. Lidström, M. Lösing, M. Minowa, M. Pandey, Y. Ray, M. Scheinert, D. M. Schroeder, T. Seehaus, K. Shahateet, D. Steinhage, X. Tang, D. Taylor, H. Verboncoeur*, J. Yang and D. A. Young, in review. Towards an improved understanding of the Antarctic coastal zone and its contribution to future global sea level, *Reviews of Geophysics*.

[82] Meng, T. M., R. J. Michaelides, S. Vivero, A. Nguyen and **M. R. Siegfried**, in review. Fusion of InSAR and stereophotogrammetry improves 3D alpine permafrost surface displacement measurements, *Earth and Space Science*.

[81] Ross, N., R. J. Sanderson, B. Kulessa, M. Siegert, G. J. G. Paxman, K. A. Nichols, **M. R. Siegfried**, S. S. R. Jamieson, M. J. Bentley, T. A. Jordan, C. L. Batchelor, D. Small, O. Eisen, K. Winter, R. G. Bingham, S. L. Callard, R. Carr, C. F. Dow, H. A. Fricker, E. Hill, B. H. Hills*, C. Hofstede, H. Jeofry, F. Napoleoni and W. Sauthoff*, in review. Review Article: The Foundation-Patuxent-Academy ice stream system, Antarctica, *The Cryosphere*, doi:10.5194/egusphere-2025-3625.

[80] 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*.

[79] Schroeder, D. M., E. Abrahams, A. L. Broome, W. Chu, R. Culberg, E. J. Dawson, E. J. MacKie, D. F. May, **M. R. Siegfried**, T. O. Teisberg and S. Zhao, in review. Time-series radar sounding as the next key ice-sheet observable, *Philosophical Transactions of the Royal Society A*.

[78] 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*.

[77] Sutterley, T. C., S. L. Howard, L. Padman and **M. R. Siegfried**, in review. pyTMD: Python-based tidal prediction software, *Journal of Open Source Software*.

Refereed Journal Publications

[76] ^Peter, I., E. J. Anderson, **M. R. Siegfried** and N. T. Kurtz, 2025. A Novel Algorithm for Ice-Water Discrimination in Large Lakes using ICESat-2 and Data Driven Machine Learning, *Earth and Space Science*, **12**(6), e2024EA004155, doi:10.1029/2024EA004155.

[75] ^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.

[74] *Savidge, E., J. Millstein*, T. Snow*, **M. R. Siegfried**, C. Bézu, K. Alley and B. Riel, 2025. 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*, accepted.

[73] *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.

[72] 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, 2025. Antarctica's internal architecture: Towards a radiostratigraphically-informed age–depth model of the Antarctic ice sheets, *The Cryosphere*, doi:10.5194/egusphere-2024-2593, accepted.

[71] Bryant, M. B., A. A. Borsa, E. J. Anderson, C. C. Masteller, R. J. Michaelides*, **M. R. Siegfried** and A. P. Young, 2025. Multiple modes of shoreline change along the Alaskan Beaufort Sea observed using ICESat-2 altimetry and satellite imagery, *The Cryosphere*, **19**, 1825–1847, doi:10.5194/tc-19-1825-2025.

[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.

[69] 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, 2025. A West Antarctic grounding-zone environment shaped by

episodic water flow, *Nature Geoscience*, **18**(5), 389–395, doi:10.1038/s41561-025-01687-3.

2024 [68] *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.

[67] *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.

[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.

[64] *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, *Geophysical Research Letters*, **50**(22), doi:10.1029/2023gl106178.

[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.

[62] *Snow, T., W. Zhang, E. Schreiber, **M. R. Siegfried**, W. Abdalati and T. Scambos, 2023. Alongshore Winds Force Warm Atlantic Water Toward Helheim Glacier in Southeast Greenland, *Journal of Geophysical Research: Oceans*, **128**, doi:10.1029/2023JC019953.

[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.

[53] Livingstone, S. J., Y. Li, A. Rutishauser, R. J. Sanderson, K. Winter, J. Mikucki, H. Björnsson, J. S. Bowling, W. Chu, C. Dow, H. A. Fricker, M. McMillan, F. Ng, N. Ross, M. J. Siegert, **M. R. Siegfried** and A. J. Sole, 2022. Global synthesis of subglacial lakes and their changing role in a warming climate, *Nature Reviews Earth & Environment*, **3**, 106–124, doi:10.1038/s43017-021-00246-9.

2021

[52] **Siegfried, M. R.** and H. A. Fricker, 2021. Illuminating active subglacial lake processes with ICESat-2 laser altimetry, *Geophysical Research Letters*, **48**(14), doi:10.1029/2020GL091089.

[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.

[49] Becker, M., S. Howard, H. A. Fricker, L. Padman, C. Mosbeux and **M. R. Siegfried**, 2021. Buoyancy-driven flexure at the front of Ross Ice Shelf, Antarctica, observed by ICESat-2 satellite laser altimetry, *Geophysical Research Letters*, **48**(12), e2020GL091207, doi:10.1029/2020GL091207.

[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.

[47] MacGregor, J., L. Boisvert, B. Medley, A. Petty, J. Harbeck, R. Bell, B. Blair, E. Blanchard-Wrigglesworth, E. Buckley, M. Christoffersen, J. Cochran, B. Csatho, E. De Marco, R. Dominguez, M. Fahnestock, S. Farrell, S. P. Gogineni, J. Greenbaum, C. Hansen, M. Hofton, J. Holt, K. Jezek, L. Koening, N. Kurtz, R. Kwok, C. Larsen, C. Leuschen, S. Manizade, S. Martin, T. Neumann, S. Nowicki, J. Paden, J. Richter-Menge, E. Rignot, F. Rodríguez-Morales, **M. R. Siegfried**, B. Smith, J. Sonntag, M. Studinger, K. Tinto, M. Truffer, T. Wagner, J. Woods, D. Young and J. Yungel, 2021. The scientific legacy of NASA's Operation IceBridge, *Reviews of Geophysics*, **59**(2), e2020RG000712, doi:10.1029/2020RG000712.

[46] Priscu, J. C., J. Kalin, J. Winans, T. Campbell, **M. R. Siegfried**, M. Skidmore, J. E. Dore, A. Leventer, D. Harwood, D. Duling, R. Zook, J. Burnett, D. Gibson, E. Krula, A. Mironov, J. McManis, G. Roberts, B. E. Rosenheim, B. C. Christner, K. Kasic, H. A. Fricker, W. B. Lyons, J. Barker, M. Bowling, B. Collins, C. Davis, A. Gagnon, C. Gardner, C. Gustafson, O.-S. Kim, W. Li, A. B. Michaud, M. Patterson, M. Tranter, R.

Venturelli, T. Vick-Majors and C. Elsworth, 2021. Scientific Access into Mercer Subglacial Lake: Scientific Objectives, Drilling Operations and Initial Observations, *Annals of Glaciology*, **62**(85–86), 340–352, doi:10.1017/aog.2021.10.

[45] Stubblefield, A. G., T. T. Creyts, J. Kingslake, **M. R. Siegfried** and M. Spiegelman, 2021. Surface expression and apparent timing of subglacial lake oscillations controlled by viscous ice flow, *Geophysical Research Letters*, **48**(17), e2021GL094658, doi:10.1029/2021GL094658.

2020

[44] Adusumilli, S., H. A. Fricker, B. Medley, L. Padman and **M. R. Siegfried**, 2020. Interannual variations in meltwater input to the Southern Ocean from Antarctic ice shelves, *Nature Geoscience*, **13**(9), 616–620, doi:10.1038/s41561-020-0616-z.

[43] Begeman, C., S. Tulaczyk, L. Padman, M. King, **M. R. Siegfried**, T. Hodson and H. A. Fricker, 2020. Tidal pressurization of the ocean cavity near an Antarctic ice shelf grounding line, *Journal of Geophysical Research – Oceans*, **125**(4), doi:10.1029/2019JC015562.

[42] 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 and **M. R. Siegfried**, 2020. Multidecadal Basal Melt Rates and Structure of the Ross Ice Shelf, Antarctica, Using Airborne Ice Penetrating Radar, *Journal of Geophysical Research – Earth Surface*, **125**(3), doi:10.1029/2019JF005241.

[41] Elsworth, C., D. M. Schroeder and **M. R. Siegfried**, 2020. Interpreting englacial layer deformation in the presence of complex ice flow history with synthetic radargrams, *Annals of Glaciology*, **61**(81), 206–213, doi:10.1017/aog.2019.41.

[40] Hawkings, J. R., M. L. Skidmore, J. L. Wadham, J. C. Priscu, P. L. Morton, J. E. Hatton, C. B. Gardner, T. J. Kohler, M. Stibal, E. A. Bagshaw, A. Steigmeyer, J. Barker, J. E. Dore, W. B. Lyons, M. Tranter, R. G. M. Spencer and the SALSA Science Team (incl. **M. R. Siegfried**), 2020. Enhanced trace element mobilization by Earth's ice sheets, *Proceedings of the National Academy of Sciences*, **117**(50), 31648–31659, doi:10.1073/pnas.2014378117.

[39] Jordan, T., D. Schroeder, C. Elsworth and **M. R. Siegfried**, 2020. Estimation of ice fabric within Whillans Ice Stream using polarimetric phase-sensitive radar sounding, *Annals of Glaciology*, **61**(81), 74–83, doi:10.1017/aog.2020.6.

[38] MacKie, E. J., D. M. Schroeder, J. Caers, **M. R. Siegfried** and C. Scheidt, 2020. Antarctic topographic realizations and geostatistical modeling used to map subglacial lakes, *Journal of Geophysical Research – Earth Surface*, **125**(3), doi:10.1029/2019JF005420.

[37] Smith, B., H. A. Fricker, A. S. Gardner, B. Medley, J. Nilsson, F. S. Paolo, N. Holschuh, S. Adusumilli, K. Brunt, B. Csatho, K. Harbeck, T. Markus, T. Neumann, **M. R. Siegfried** and H. J. Zwally, 2020. Pervasive ice sheet mass loss reflects competing ocean and atmosphere processes, *Science*, **368**(6496), 1239–1242, doi:10.1126/science.aaz5845.

[36] Venturelli, R. A., **M. R. Siegfried**, K. Roush, W. Li, J. Burnett, R. Zook, H. A. Fricker, J. Priscu, A. Leventer and B. Rosenheim, 2020. Mid-Holocene grounding line variability in the southern Ross Embayment, *Geophysical Research Letters*, **47**(15), e2020GL088476, doi:10.1029/2020GL088476.

2019

[35] Schroeder, D. M., J. A. Dowdeswell, M. J. Siegert, R. G. Bingham, W. Chu, E. J. MacKie, **M. R. Siegfried**, K. I. Vega, J. R. Emmons and K. Winstein, 2019. Multidecadal observations of the Antarctic ice sheet from restored analog radar records, *Proceedings of the National Academy of Sciences*, **116**(38), 18867–18873, doi:10.1073/pnas.1821646116.

[34] Smith, B. E., N. Holschuh, A. S. Gardner, S. Adusumili, K. M. Brunt, B. Csatho, H. A. Fricker, K. Harbeck, A. Huth, T. Neumann, J. Nilsson and **M. R. Siegfried**, 2019. Land ice height-retrieval algorithm for NASA's ICESat-2 photon-counting laser altimeter, *Remote Sensing of Environment*, **233**, 111352, doi:10.1016/j.rse.2019.111352.

[33] Tinto, K., L. Padman, C. Siddoway, S. Springer, H. A. Fricker, I. Das, F. C. Tontini, D. Porter, N. Frearson, S. Howard, **M. R. Siegfried** and et al., 2019. Ross Ice Shelf response to climate driven by the tectonic imprint on seafloor bathymetry, *Nature Geoscience*, **12**, 441–449, doi:10.1038/s41561-019-0370-2.

2018

[32] **Siegfried, M. R.** and H. A. Fricker, 2018. Thirteen years of subglacial lake activity in Antarctica from multi-mission altimetry, *Annals of Glaciology*, **59**(76), 42–55, doi:10.1017/aog.2017.36.

[31] Chu, W., D. M. Schroeder and **M. R. Siegfried**, 2018. Retrieval of Englacial Firn Aquifer Thickness from Ice-Penetrating Radar Sounding in Southeast Greenland, *Geophysical Research Letters*, **45**(21), 11,770–11,778, doi:10.1029/2018GL079751.

[30] Begeman, C. M., S. M. Tulaczyk, O. J. Marsh, J. A. Mikucki, T. P. Stanton, T. O. Hodson, **M. R. Siegfried**, R. D. Powell, K. Christianson and M. A. King, 2018. Ocean stratification and low melt rates at the Ross Ice Shelf grounding zone, *Journal of Geophysical Research – Oceans*, **123**(10), 7438–7452, doi:10.1029/2018JC013987.

[29] Adusumilli, S., H. A. Fricker, **M. R. Siegfried**, L. Padman, F. Paolo and S. Ligtenberg, 2018. Variable basal melt rates of Antarctic Peninsula ice shelves, 1994–2016, *Geophysical Research Letters*, **45**(9), 4086–4095, doi:10.1002/2017GL076652.

[28] Padman, L., **M. R. Siegfried** and H. A. Fricker, 2018. Ocean tide influences on ice sheet processes, *Reviews of Geophysics*, **56**(1), 142–184, doi:10.1002/2016RG000546.

[27] Paolo, F. S., L. Padman, H. A. Fricker, S. Adusumilli, S. Howard and **M. R. Siegfried**, 2018. Response of Pacific-sector Antarctic ice shelves to the El Niño/ Southern Oscillation, *Nature Geoscience*, **11**, 121–126, doi:10.1038/s41561-017-0033-0.

2017

[26] **Siegfried, M. R.**, B. Medley, K. Larson, H. A. Fricker and S. Tulaczyk, 2017. Snow accumulation variability on a West Antarctic ice stream observed with GPS reflectometry, 2007–2017, *Geophysical Research Letters*, **44**(15), 7808–7816, doi:10.1002/2017GL074039.

[25] Carter, S. P., H. A. Fricker and **M. R. Siegfried**, 2017. Antarctic subglacial lakes drain through sediment-floored canals: Theory and model testing on real and idealized domains, *The Cryosphere*, **11**, 381–405, doi:10.5194/tc-11-381-2017.

[24] Damsgaard, A., J. Suckale, J. Piotrowski, M. Houssais, **M. R. Siegfried** and H. A. Fricker, 2017. Sediment behavior controls equilibrium width of subglacial channels, *Journal of Glaciology*, **63**(242), 1034–1048, doi:10.1017/jog.2017.71.

[23] Key, K. and **M. R. Siegfried**, 2017. The feasibility of ground-based electromagnetic methods for mapping the subglacial hydrological structure beneath ice streams, *Journal of Glaciology*, **63**(241), 755–771, doi:10.1017/jog.2017.36.

[22] Scambos, T. A., R. E. Bell, A. M. Smith, D. G. Vaughan, R. B. Alley, S. Anandakrishnan, D. H. Bromwich, K. M. Brunt, K. Christianson, T. T. Creyts, S. B. Das, R. DeConto, P. Dutrieux, H. A. Fricker, D. Holland, J. MacGregor, B. Medley, D. Pollard, **M. R. Siegfried**, E. J. Steig and P. Yager, 2017. How Much, How Fast? A Review and Science Plan for Research on the Instability of Antarctica's Thwaites Glacier in the 21st Century, *Global and Planetary Change*, **153**, 16–34, doi:10.1016/j.gloplacha.2017.04.008.

2016

[21] **Siegfried, M. R.**, H. A. Fricker, S. P. Carter and S. Tulaczyk, 2016. Episodic ice velocity fluctuations triggered by a subglacial flood in West Antarctica, *Geophysical Research Letters*, **43**(6), 2640–2648, doi:10.1002/2016GL067758.

[20] Alley, K. E., T. A. Scambos, **M. R. Siegfried** and H. A. Fricker, 2016. Impacts of warm water on Antarctic ice shelf stability through basal channel formation, *Nature Geoscience*, **9**(4), 290–293, doi:10.1038/ngeo2675.

[19] Achberger, A. M., B. C. Christner, A. B. Michaud, J. C. Priscu, M. L. Skidmore, T. J. Vick-Majors and the WISSARD Science Team (incl. **M. R. Siegfried**), 2016. Microbial Community Structure of Subglacial Lake Whillans, West Antarctica, *Frontiers in*

Microbiology, **7**, 1457, doi:10.3389/fmicb.2016.01457.

[18] Damsgaard, A., D. L. Eghold, L. H. Beem, S. Tulaczyk, N. K. Larsen, J. A. Piotrowski and **M. R. Siegfried**, 2016. Ice flow dynamics forced by rapid water-pressure variations in subglacial granular beds, *Geophysical Research Letters*, **43**(23), 165–173, doi:10.1002/2016GL071579.

[17] Hodson, T., R. Powell, S. Brachfeld, S. Tulaczyk, R. Scherer and the WISSARD Science Team (incl. **M. R. Siegfried**), 2016. Physical processes in Subglacial Lake Whillans, West Antarctica: inferences from sediment cores, *Earth and Planetary Science Letters*, **444**, 56–63, doi:10.1016/j.epsl.2016.03.036.

[16] Marsh, O. J., H. A. Fricker, **M. R. Siegfried**, K. Christianson, K. W. Nicholls, H. F. J. Corr and G. Catania, 2016. High basal melting forming a channel at the grounding line of Ross Ice Shelf, Antarctica, *Geophysical Research Letters*, **43**(1), 250–255, doi:10.1002/2015gl066612.

[15] Vick-Majors, T. J., A. C. Mitchell, A. M. Achberger, B. C. Christner, J. E. Dore, A. B. Michaud, J. A. Mikucki, A. M. Purcell, M. L. Skidmore, J. C. Priscu and the WISSARD Science Team (incl. **M. R. Siegfried**), 2016. Physiological ecology of microorganisms in Subglacial Lake Whillans, *Frontiers in Microbiology*, **7**, 1705, doi:10.3389/fmicb.2016.01705.

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.

[13] Fricker, H. A., **M. R. Siegfried**, S. P. Carter and T. A. Scambos, 2015. A decade of progress in observing and modeling Antarctic subglacial water systems, *Philosophical Transactions of the Royal Society A*, **374**(2059), 20140294, doi:10.1098/rsta.2014.0294.

[12] Mikucki, J., P. Lee, D. Ghosh, A. Purcell, A. Mitchell, K. Mankoff, A. T. Fisher, S. Tulaczyk, S. P. Carter, **M. R. Siegfried**, H. A. Fricker, T. Hodson, J. Coenen, R. Powell, R. P. Scherer, T. Vick-Majors, A. M. Achberger, B. C. Christner and M. Tranter, 2015. Subglacial Lake Whillans biogeochemistry: a synthesis of current knowledge, *Philosophical Transactions of the Royal Society A*, **374**(2059), 20140290, doi:10.1098/rsta.2014.0290.

2014

[11] **Siegfried, M. R.**, H. A. Fricker, M. Roberts, T. A. Scambos and S. Tulaczyk, 2014. A decade of West Antarctic subglacial lake interactions from combined ICESat and CryoSat-2 altimetry, *Geophysical Research Letters*, **41**(3), 891–898, doi:10.1002/2013GL058616.

[10] Christner, B. C., J. C. Priscu, A. M. Achberger, C. Barbante, S. P. Carter, K. Christianson, A. B. Michaud, J. A. Mikucki, A. C. Mitchell, M. L. Skidmore, T. J. Vick-Majors and the WISSARD Science Team (incl. **M. R. Siegfried**), 2014. A microbial ecosystem beneath the West Antarctic ice sheet, *Nature*, **512**(7514), 310–313, doi:10.1038/nature13667.

[9] Holt, T. O., N. F. Glasser, H. A. Fricker, L. Padman, A. Luckman, O. King, D. J. Quincey and **M. R. Siegfried**, 2014. The structural and dynamic responses of Stange Ice Shelf to recent environmental change, *Antarctic Science*, **26**(06), 646–660, doi:10.1017/S095410201400039X.

[8] Purcell, A. M., J. A. Mikucki, A. M. Achberger, I. A. Alekhina, C. Barbante, B. C. Christner, D. Ghosh, A. B. Michaud, A. C. Mitchell, J. C. Priscu, R. Scherer, M. L. Skidmore, T. J. Vick-Majors and the WISSARD Science Team (incl. **M. R. Siegfried**), 2014. Microbial sulfur transformations in sediments from Subglacial Lake Whillans, *Frontiers in Microbiology*, **5**, 594, doi:10.3389/fmicb.2014.00594.

[7] Tulaczyk, S., J. A. Mikucki, **M. R. Siegfried**, J. C. Priscu, C. G. Barcheck, L. H. Beem, A. Behar, J. Burnett, B. C. Christner, A. T. Fisher, F. H. A., K. D. Mankoff, R. D. Powell,

F. Rack, D. Sampson, R. P. Scherer, S. Y. Schwartz and the WISSARD Science Team, 2014. WISSARD at Subglacial Lake Whillans, West Antarctica: scientific operations and initial observations, *Annals of Glaciology*, **55**(65), 51–58, doi:10.3189/2014AoG65A009.

2013

[6] Carter, S. P., H. A. Fricker and **M. R. Siegfried**, 2013. Evidence of rapid subglacial water piracy under Whillans Ice Stream, West Antarctica, *Journal of Glaciology*, **59**(218), 1147–1162, doi:10.3189/2013JoG13J085.

[5] Holt, T. O., N. F. Glasser, D. J. Quincey and **M. R. Siegfried**, 2013. Speedup and fracturing of George VI Ice Shelf, Antarctic Peninsula, *The Cryosphere*, **7**(3), 797–816, doi:10.5194/tc-7-797-2013.

[4] Horgan, H. J., R. B. Alley, K. Christianson, R. W. Jacobel, S. Anandakrishnan, A. Muto, L. H. Beem and **M. R. Siegfried**, 2013. Estuaries beneath ice sheets, *Geology*, **41**(11), 1159–1162, doi:10.1130/G34654.1.

[3] Priscu, J. C., A. M. Achberger, J. E. Cahoon, B. C. Christner, R. L. Edwards, W. L. Jones, A. B. Michaud, **M. R. Siegfried**, M. L. Skidmore, R. H. Spigel, G. W. Switzer, S. Tulaczyk and T. J. Vick-Majors, 2013. A microbiologically clean strategy for access to the Whillans Ice Stream subglacial environment, *Antarctic Science*, **25**(5), 637–647, doi:10.1017/s0954102013000035.

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 preparation 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 — 2014–2015
Expedition Lead, Field Medic

Whillans Ice Plain, West Antarctica, Surface Geophysics — 2013–2014
GPS Team Leader, Field Medic

Whillans Ice Plain, West Antarctica, Surface Geophysics — 2012–2013

Surface Geophysics Team Leader, Field Medic

Whillans Ice Plain, West Antarctica, Surface Geophysics	2011–2012
Northern New Mexico, Southern Colorado, Geology and Geomorphology	2010

Field Trip Organizer and Leader

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 OpenCloud 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 Antarc-

tic 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*.

[163] *Snow, T., A. Wåhlin, B. Queste, G. Bortolotto, L. Boehme, E. Savidge*, E. Abrahams, **M. R. Siegfried** and W. Abdalati, 2022. Persistent polynya variability infers basal channel outflow at the Eastern Thwaites Ice Shelf, *International Symposium on Ice, Snow and Water in a Warming World*.

[162] *Snow, T., M. Field*, E. Abrahams, F. Sapienza, W. Zheng, E. Savidge*, F. P. J. Taylor, W. Abdalati, T. Scambos and **M. R. Siegfried**, 2022. Single channel and split-window SSTs from Landsat in Antarctica, *GHRSST23 International Science Team Meeting*.

[161] Bradford, J. H., **M. R. Siegfried**, R. Michaelides*, B. Schmidt, K. Hughson, H. Sizemore and A. Swidinsky, 2022. Detailed mapping of the internal structure of Arctic pingos using ground-penetrating radar, *19th International Conference on Ground Penetrating Radar*.

[160] *Hubbard, K. A., **M. R. Siegfried**, W. Sauthoff* and B. Dugan, 2022. Integrating visual imagery and modeling to assess groundwater connectivity in Antarctica's Taylor Valley, *AGU Frontiers in Hydrology Meeting*.

[159] *Sauthoff, W., **M. R. Siegfried** and B. E. Smith, 2022. Antarctic subglacial lake shoreline migration and variability in response to fill-drain cycles, *AGU Frontiers in Hydrology Meeting*.

[158] **Siegfried†, M. R.**, R. A. Venturelli†, M. O. Patterson, W. Arnuk, T. Campbell, C. D. Gustafson, A. Michaud, B. Galton-Fenzi, M. B. Hausner, S. N. Holzschuh*, B. Huber, K. Mankoff, D. M. Schroeder, P. Summers, S. Tyler, S. P. Carter, H. A. Fricker, D. Harwood, A. Leventer, B. E. Rosenheim, M. Skidmore, J. C. Priscu and the SALSA Science Team, 2022. The Life and Death of a Subglacial Lake in West Antarctica: A Process-to-Paleo Perspective, *AGU Frontiers in Hydrology Meeting*.

[157] Roth, D., M. Zhang, V. Sahakian, J. Marshall, G. Jin, A. Titov, **M. R. Siegfried**, C. Masteller and H. Jacobson, 2022. Bridging the data gap: seismo-acoustic advances from ridgelines to rivers, *European Geosciences Union General Assembly*.

[156] Vick-Majors, T. J., C. L. Davis, B. C. Christner, W. Li, J. E. Dore, M. Tranter, J.

Barker, **M. R. Siegfried**, M. L. Skidmore, , J. C. Priscu and the SALSA Science Team, 2022. Physiochemical drivers of microbial ecosystems in Antarctic subglacial aquatic environments, *Joint Aquatic Science Meeting*.

[155] Bradford, J. H., **M. R. Siegfried**, R. Michaelides*, B. Schmidt, K. Hughson, H. Sizemore and A. Swidinsky, 2022. Detailed mapping of the internal structure of Arctic pingos using ground-penetrating radar, *Polar Radar Science and Technology Conference*.

[154] Pérez, F., E. Sundell, Y. Panda, E. Abrahams, A. Azari, S. Grigsby, C. Holdgraf, F. Sapienza, **M. R. Siegfried**, T. Snow*, J. Taylor and W. Zheng, 2022. Keeping your head in the clouds: reproducible, collaborative science with open cloud infrastructure, *EarthCube Annual Meeting*.

[153] Zheng, W., C. Holdgraf, F. Pérez, E. Sundell, **M. R. Siegfried**, T. Snow*, S. Grigsby, F. Sapienza, J. Taylor and the Executable Books Community, 2022. Let supplemental material be FAIR: using narrative and reusable Jupyter Book to complement your journal paper, *EarthCube Annual Meeting*.

2021

[152] **Siegfried‡, M. R.**, R. A. Venturelli‡, M. O. Patterson, W. Arnuk, T. Campbell, C. D. Gustafson, A. B. Michaud, B. K. Galton-Fenzi, M. B. Hausner, S. N. Holzschuh*, B. Huber, K. Mankoff, D. M. Schroeder, P. Summers, S. Tyler, S. P. Carter, H. A. Fricker, D. Harwood, A. Leventer, B. E. Rosenheim, M. Skidmore, J. C. Priscu and the SALSA Science Team, 2021. The life and death of a subglacial lake in West Antarctica, *AGU Fall Meeting*.

[151] *Michaelides, R. J., **M. R. Siegfried**, J. Lovekin, K. Berry, B. Dugan and D. L. Roth, 2021. Discrimination of Active and Inactive Burn Areas in the 2020 Cameron Peak Fire from Interferometric Synthetic Aperture Radar (InSAR) Time Series, *AGU Fall Meeting*.

[150] *Savidge, E., T. M. Snow*, **M. R. Siegfried**, L. Boehme, G. Bortolotto and K. E. Alley, 2021. Investigating Persistent Polynya Structure and Variability at Pine Island Glacier, West Antarctica, Using Seal-borne Measurements and Thermal Remote Sensing, *AGU Fall Meeting*.

[149] *Snow, T., F. Sapienza, S. Grigsby*, J. Taylor, E. Savidge*, W. Zheng, K. E. Alley, F. Perez and **M. R. Siegfried**, 2021. Basal channel outflow inferred from persistent polynya variability at the Eastern Thwaites Ice Shelf, *AGU Fall Meeting*.

[148] Bienert, N. L., D. M. Schroeder, R. Sanda, E. Dawson, E. MacKie, S. T. Peters and **M. R. Siegfried**, 2021. Passively Synchronized Bistatic Radar System for Subsurface Tomography of Glaciers, *AGU Fall Meeting*.

[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*.

[146] Gardner, A. S., S. Adusumilli, P. A. Arndt, K. Brunt, B. M. Csatho, D. Felikson, F. Paolo, H. A. Fricker, C. A. Greene, S. Kacimi, N. T. Kurtz, R. Kwok, B. Medley, T. Neumann, J. Nilsson, A. Petty, D. E. Shean, **M. R. Siegfried** and B. Smith, 2021. Surface Topography Observations Needed to Advance Cryosphere Science in the Coming Decades, *AGU Fall Meeting*.

[145] Grigsby, S., F. Sapienza, W. Zheng, J. Taylor, T. Snow*, E. Savidge*, F. Perez and **M. R. Siegfried**, 2021. Mission in a minute: Complex Spatial Query and Data Access in the Cloud for the ICESat-2 Mission, *AGU Fall Meeting*.

[144] Hawley, R. L., S. Grigsby*, G. Lewis and **M. R. Siegfried**, 2021. CrackMap: Automated Extraction of Crevasses from High-Resolution Optical Imagery using Edge Detection, *AGU Fall Meeting*.

[143] Roth, D. L., G. Jin, A. Titov, **M. R. Siegfried**, C. C. Masteller and H. Jacobson, 2021. A river on fiber: capturing fluvial processes with distributed acoustic sensing, *AGU Fall Meeting*.

[142] Sapienza, F., S. Grigsby*, W. Zheng, J. Taylor, F. Perez and **M. R. Siegfried**, 2021. Spectral Unmixing of Antarctic Snow Grain Size Distribution: A Data-Driven Perspective, *AGU Fall Meeting*.

[141] Smith, B. E., T. C. Sutterley, S. Dickinson, B. P. Jelley, S. Adusumilli, H. A. Fricker, A. S. Gardner, N. Holschuh, T. Neumann, L. Padman and **M. R. Siegfried**, 2021. An introduction to ICESat-2's gridded land-ice products, *AGU Fall Meeting*.

[140] Sutterley, T. C., B. Smith, K. Brunt, L. Padman, S. L. Howard, **M. R. Siegfried**, A. S. Gardner, H. A. Fricker, S. Adusumilli and N. Holschuh, 2021. Estimating Antarctic Grounding Zone Ice Flexure with ICESat-2 Data, *AGU Fall Meeting*.

[139] *Follingstad, V., R. Michaelides* and **M. R. Siegfried**, 2021. Quantifying the surface deformation of pingos on the Alaskan North Slope using interferometric synthetic aperture radar (InSAR), *2021 Regional Conference on Permafrost & 19th International Conference on Cold Regions Engineering*.

[138] *Michaelides, R. M., M. Bryant, A. A. Borsa and **M. R. Siegfried**, 2021. Quantifying Surface-Height Change over a Periglacial Environment with ICESat-2 Laser Altimetry, *2021 Regional Conference on Permafrost & 19th International Conference on Cold Regions Engineering*.

[137] Hughson, K. H., B. E. Schmidt, E. Quartini, R. Michaelides*, **M. R. Siegfried**, A. Mullen, J. H. Bradford, A. Swidinsky and H. G. Sizemore, 2021. Pingos as planetary analogs: The geophysical perspective, *GSA Connects Annual Meeting*.

[136] *Sauthoff, W., **M. R. Siegfried** and B. E. Smith, 2021. Observing connected subglacial lake drainage at Slessor Glacier, East Antarctica, using ICESat-2 laser altimetry, *WAIS Workshop*.

[135] *Savidge, E., T. Snow*, **M. R. Siegfried**, L. Boehme, G. A. Bortolotto and K. E. Alley, 2021. Investigating persistent polynya structure and variability at Pine Island Glacier, West Antarctica, using seal-borne measurements and thermal remote sensing, *WAIS Workshop*.

[134] *Snow, T., F. Sapienza, S. Grigsby*, J. Taylor, E. Savidge*, W. Zheng, K. Alley, F. Pérez and **M. R. Siegfried**, 2021. Eastern Thwaites basal channel outflow inferred from persistent polynya variability, *WAIS Workshop*.

[133] Rosenheim, B. E., R. A. Venturelli, T. Campbell, C. Davis, **M. R. Siegfried**, C. Mosbeux, M. Patterson, A. Michaud, T. Vick-Majors, A. Leventer, M. Skidmore, B. Christner, D. Harwood, J. C. Priscu and the SALSA Science Team, 2021. Holocene marine incursion supports a subglacial microbial community in the active hydrologic system beneath the West Antarctic Ice Sheet, *26th International Symposium on Polar Sciences*.

[132] Skidmore, M., J. Barker, B. Christner, C. Davis, J. E. Dore, C. Gardner, B. Gill-Olivas, A. Michaud, J. Hawkings, W. Li, W. B. Lyons, **M. R. Siegfried**, A. Steigmeyer, M. Tranter, T. J. Vick-Majors, J. C. Priscu and the SALSA Science Team, 2021. Solute sources and weather processes in subglacial lake systems beneath the West Antarctic Ice Sheet, *26th International Symposium on Polar Sciences*.

[131] 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*.

[130] Zheng, W., S. Grigsby*, F. Sapienza, J. Taylor, T. Snow*, F. Perez and **M. R. Siegfried**, 2021. Mapping ice flow velocity using an interactive, cloud-based feature tracking workflow, *Arctic Research Collaboration Workshop*.

[129] Livingstone, S., H. Björnsson, J. Bowling, W. Chu, C. Dow, H. A. Fricker, Y. Li, M. McMillan, J. Mikucki, F. Ng, N. Ross, A. Rutishauser, R. Sanderson, M. Siegert, **M. R. Siegfried**, A. Sole and K. Winter, 2021. Global synthesis of subglacial lakes and their changing role in a warming climate, *EGU General Assembly*.

2020

[128] *Grigsby, S., F. Sapienza, T. Snow*, A. Cima, L. J. Heagy, **M. R. Siegfried**, F. Perez and J. Taylor, 2020. Spatio-Temporal Interpolation of Cloud Data, *AGU Fall Meeting*.

[127] *Michaelides, R. J., R. H. Chen, K. M. Schaefer, A. Parsekian, G. V. Frost, Jr., T. D. Sullivan, H. A. Zebker, M. Moghaddam, S. Natali and **M. R. Siegfried**, 2020. Wildfire, permafrost, and vegetation interactions in a discontinuous permafrost region revealed by dual-frequency airborne radar observations, *AGU Fall Meeting*.

[126] Bienert, N. L., D. M. Schroeder, S. T. Peters, E. MacKie, **M. R. Siegfried** and E. Dawson, 2020. Design of Direct Path Synchronized Bistatic Radar Technique for Long Offset Glacial Temperature Tomography, *AGU Fall Meeting*.

[125] Bryant, M., A. A. Borsa, H. A. Fricker, R. J. Michaelides, W. Neely and **M. R. Siegfried**, 2020. Integrating ICESat-2 and Sentinel-1 measurements to quantify thaw subsidence in Alaska, *AGU Fall Meeting*.

[124] Campbell, T., M. L. Skidmore, **M. R. Siegfried**, J. Winans, B. Zook, J. C. Priscu and the SALSA Science Team, 2020. Basal Ice Stratigraphy from Mercer Ice Stream, West Antarctica: Implications for sub ice stream accretionary processes, *AGU Fall Meeting*.

[123] Cima, A., F. Sapienza, T. Snow, S. Grigsby*, L. J. Heagy, F. Perez and **M. R. Siegfried**, 2020. Fusion of ICESat-2 and complementary remote sensing data for interactive visualization in Jupyter, *AGU Fall Meeting*.

[122] Gustafson, C., K. Key, **M. R. Siegfried** and H. A. Fricker, 2020. Extensive saline groundwater beneath Whillans Ice Stream, West Antarctica, *AGU Fall Meeting*.

[121] Hughson, K., B. Schmidt, K. Udell, H. G. Sizemore, J. E. C. Scully, D. Buckowski, J. Bradford, **M. R. Siegfried**, A. Swidinsky, C. A. Raymond and C. T. Russell, 2020. A Comparative Morphological and Geospatial Analysis of Terrestrial Pingos and Anomalous Hills on Ceres, *AGU Fall Meeting*.

[120] Rosenheim, B. E., R. Venturelli, C. Subt, I. M. Browne, T. M. King, T. Campbell, P. J. Bart, J. E. Dore, D. M. Harwood, J. Kingslake, J.-I. Lee, A. Leventer, A. B. Michaud, M. Patterson, A. Shevenell, **M. R. Siegfried**, M. L. Skidmore, K.-C. Yoo, H. I. Yoon and the SALSA Science Team, 2020. What can advances in Antarctic deglacial sediment ^{14}C dating tell us about grounding line evolution?, *AGU Fall Meeting*.

[119] Sapienza, F., T. Snow, A. Cima, S. Grigsby*, L. J. Heagy, F. Perez, **M. R. Siegfried** and J. Taylor, 2020. Multimodal Dataset Integration for Cloud Masking of ICESat-2, *AGU Fall Meeting*.

[118] Sutterley, T. C., B. E. Smith, K. Brunt and **M. R. Siegfried**, 2020. Evaluating Southern Ocean Tides Using ICESat-2 over Ice Shelves, *AGU Fall Meeting*.

[117] Venturelli, R., C. Davis, T. Vick-Majors, W. Li, **M. R. Siegfried**, J. D. Barker, A. Leventer, D. M. Harwood, B. Christner, H. A. Fricker, J. C. Priscu, B. E. Rosenheim and the SALSA Science Team, 2020. On the origin and cycling of Holocene-aged carbon beneath the West Antarctic Ice Sheet, *AGU Fall Meeting*.

[116] Campbell, T. D., M. L. Skidmore, **M. R. Siegfried**, J. Winans, R. Zook, J. C. Priscu and the SALSA Science Team, 2020. Basal ice stratigraphy from Mercer Ice Stream, West Antarctica: Implications for sub ice stream accretionary processes, *WAIS Workshop*.

[115] Culberg, R., **M. R. Siegfried**, B. Medley and D. M. Schroeder, 2020. Quantifying uncertainty in a 16-year time series of Larsen C Ice Shelf thickness from airborne radar sounding, *WAIS Workshop*.

[114] Gustafson, C. D., K. Key, **M. R. Siegfried** and H. A. Fricker, 2020. Imaging salty groundwater in sedimentary basins beneath Whillans Ice Plain, West Antarctica, *WAIS Workshop*.

[113] Hughson, K. H., B. E. Schmidt, K. Udell, H. G. Sizemore, J. E. Scully, D. L. Buczkowski, J. H. Bradford, **M. R. Siegfried**, A. Swidinsky, C. A. Raymond and C. T. Russell,

2020. A quantitative morphometric analysis of terrestrial pingos and anomalous hills on Ceres, *GSA Connects Annual Meeting*.

[112] **Siegfried, M. R.**, R. A. Venturelli, M. O. Patterson, T. Campbell, J. Dore, H. A. Fricker, C. Gustafson, A. Leventer, A. Michaud, J. Priscu, B. E. Rosenheim, M. Skidmore, B. Huber, K. Mankoff, S. Cook, B. Galton-Fenzi and the SALSA Science Team, 2020. The life cycle of an Antarctic active subglacial lake: A process to paleo perspective, *SCAR Open Science Conference*.

2019

[111] **Siegfried, M. R.**, H. A. Fricker, C. Gustafson, K. Key, A. Leventer, J. E. Dore, B. A. Huber, K. Mankoff, J. C. Priscu, B. E. Rosenheim and the SALSA Science Team, 2019. Anatomy of a draining subglacial lake in West Antarctica, *AGU Fall Meeting*.

[110] Adusumilli, S., H. A. Fricker, B. Medley, L. Padman and **M. R. Siegfried**, 2019. Time-dependent freshwater fluxes from deep and shallow meltwater sources under Antarctica's large ice shelves, *AGU Fall Meeting*.

[109] Becker, M. K., H. A. Fricker, L. Padman, **M. R. Siegfried**, B. Medley, I. Das, S. I. Cordero, R. E. Bell and the ROSETTA-Ice Team, 2019. Mapping Marine Ice Beneath Ross Ice Shelf, Antarctica, with ROSETTA-Ice Radar Sounding and ICESat-2 Laser Altimetry, *AGU Fall Meeting*.

[108] Bienert, N. L., D. M. Schroeder, S. T. Peters, E. Dawson, E. Mackie and **M. R. Siegfried**, 2019. Inferring Temperature Distribution in Shear Margins from Large-Offset Bistatic Radar Sounding, *AGU Fall Meeting*.

[107] Gustafson, C., K. Key, **M. R. Siegfried** and H. A. Fricker, 2019. Electromagnetic imaging of subglacial hydrogeology of Whillans Ice Plain, West Antarctica, *AGU Fall Meeting*.

[106] Jordan, T. M., D. M. Schroeder, A. Brisbourne, C. Martin, C. W. Elsworth, **M. R. Siegfried**, R. Schlegel and A. Smith, 2019. Measurement of Ice Fabric within Ice Streams using Polarimetric Phase-Sensitive Radar Sounding, *AGU Fall Meeting*.

[105] Priscu, J. C., J. D. Barker, T. Campbell, B. C. Christner, C. Davis, J. E. Dore, H. A. Fricker, C. B. Gardner, D. M. Harwood, A. Leventer, W. Li, W. B. Lyons, A. B. Michaud, M. Patterson, B. E. Rosenheim, **M. R. Siegfried**, M. L. Skidmore, M. Tranter, R. Venturelli1, T. Vick-Majors, B. Zook and the SALSA Science Team, 2019. SALSA: An Integrated Program Focusing on Carbon Transformations in Mercer Subglacial Lake located ∼1100 m beneath the West Antarctic Ice Sheet, *AGU Fall Meeting*.

[104] Skidmore, M. L., C. B. Gardner, A. Steigmeyer, **M. R. Siegfried**, J. D. Barker, J. E. Dore, B. G. Olivas, J. Hawkings, W. B. Lyons, M. Tranter, J. C. Priscu and the SALSA Science Team, 2019. A tale of two lakes — contrasting weathering regimes in proximal subglacial Antarctic systems, *AGU Fall Meeting*.

[103] Smith, B. E., B. Medley, F. S. Paolo, J. Nilsson, N. Holschuh, S. Adusumilli, **M. R. Siegfried** and the ICESat-2 Land-Ice Team, 2019. Sixteen Years of Ice-Sheet Change from ICESat to ICESat-2, *AGU Fall Meeting*.

[102] Venturelli, R., B. E. Rosenheim, A. Leventer, D. M. Harwood, M. O. Patterson, T. Campbell, **M. R. Siegfried**, H. A. Fricker and the SALSA and WISSARD Science Teams, 2019. A Dynamic Holocene Grounding Line: In situ sedimentary evidence from Whillans and Mercer ice streams, West Antarctica, *AGU Fall Meeting*.

[101] Barcheck, G., E. Brodsky, P. Fulton, M. King, **M. R. Siegfried** and S. Tulaczyk, 2019. Insights into earthquake initiation from ice stream stick-slip dynamics, *International Antarctic Earth Science Workshop*.

[100] Derby, L., N. Ross, F. Ferraccioli, R. Carr, T. Jordan, **M. R. Siegfried**, G. Paxman, K. Matsuoka, R. Forsberg and T. Casal, 2019. Active subglacial lakes of the Foundation Ice Stream, Antarctica, *International Glaciological Society British Branch Meeting*.

[99] *Becker, M. K., H. A. Fricker, L. Padman, **M. R. Siegfried**, C. Mosbeaux and T. J.

W. Wagner, 2019. An overlooked ice-shelf calving process for accelerating Antarctic Ice Sheet loss, *Forum for Research into Ice Shelf Processes*.

[98] *Adusumilli, S., H. A. Fricker, B. Medley, L. Padman and **M. R. Siegfried**, 2019. Partitioning time-varying meltwater fluxes from Antarctica's large ice shelves into the intermediate and upper ocean, *Forum for Research into Ice Shelf Processes*.

[97] **Siegfried, M. R.**, H. A. Fricker, C. Gustafson, K. Key, A. Leventer, J. E. Dore, B. Huber, K. Mankoff, J. Priscu, B. Rosenheim and the SALSA Science Team, 2019. Physical properties of a draining subglacial lake, *International Symposium on Antarctic Earth Science*.

[96] **Siegfried, M. R.** and D. M. Schroeder, 2019. Interpreting radar bed-echo power from active subglacial lakes on lower Mercer and Whillans ice streams, West Antarctica, *IGS Symposium on Radioglaciology*.

[95] Bienert, N., D. Schroeder, S. Peters and **M. R. Siegfried**, 2019. Improving constraints on englacial temperature and water distribution using an autonomous phase-sensitive radio echo sounder (ApRES) and a bistatic software defined receiver, *IGS Symposium on Radioglaciology*.

[94] Chu, W., D. Schroeder and **M. R. Siegfried**, 2019. Retrieval of firn aquifer thickness and englacial water volume using ice-penetrating radar sounding, *IGS Symposium on Radioglaciology*.

[93] Jordan, T., D. Schroeder, C. Elsworth, D. Jørgen and **M. R. Siegfried**, 2019. Estimation of ice fabric within the Whillans Ice Stream using polarimetric phase-sensitive radar sounding, *IGS Symposium on Radioglaciology*.

[92] Davis, C., W. Li, T. Vick-Majors, J. D. Barker, A. Michaud, J. E. Dore, **M. R. Siegfried**, M. Tranter, M. Skidmore, C. Gardner, R. Venturelli, T. Campbell, M. O. Patterson, A. Leventer, D. M. Harwood, B. E. Rosenheim, J. C. Priscu and B. C. Christner, 2019. Life Below an Ice Sheet: Mercer Subglacial Lake, West Antarctica, *Astrobiology Science Conference*.

[91] Jordan, T. M., D. M. Schroeder, C. W. Elsworth, D. Castelletti, J. Li, **M. R. Siegfried** and J. Dall, 2019. Polarimetric coherence: a data analysis method to determine ice fabric from phase-sensitive radar sounding, *EGU General Assembly*.

2018

[90] *Adusumilli, S., H. A. Fricker, L. Padman and **M. R. Siegfried**, 2018. Time-varying freshwater fluxes from Antarctic ice shelves, *AGU Fall Meeting*.

[89] *Becker, M. K., H. A. Fricker, L. Padman, **M. R. Siegfried**, C. Mosbeux and T. J. Wagner, 2018. Dynamic small-scale morphology and mass-loss processes near the fronts of Antarctica's large ice shelves, *AGU Fall Meeting*.

[88] Chu, W., D. Schroeder and **M. R. Siegfried**, 2018. Retrieval of Englacial Firn Aquifer Thickness from Ice-Penetrating Radar Sounding in Southeastern Greenland, *AGU Fall Meeting*.

[87] Das, I., L. Padman, R. E. Bell, K. J. Tinto, H. A. Fricker, N. Frearson, C. S. Siddoway and **M. R. Siegfried**, 2018. Airborne Radar Reveals Multi-Decadal Basal Melt Rates for Ross Ice Shelf, Antarctica, *AGU Fall Meeting*.

[86] Padman, L., R. E. Bell, I. Das, C. Mosbeux, D. Porter, C. S. Siddoway, **M. R. Siegfried**, S. R. Springer, K. J. Tinto and the ROSETTA-Ice Team, 2018. Ice Shelf Vulnerability to Seasonal Upper Ocean Warming, *AGU Fall Meeting*.

[85] Smith, B. E., A. S. Gardner, N. Holschuh, **M. R. Siegfried**, B. M. Csatho, A. F. Schenk, S. Adusumilli, T. Neumann, K. M. Brunt and K. Harbeck, 2018. ICESat-2 Over Antarctica and Greenland: First Evaluation of Land-Ice Elevation Products, *AGU Fall Meeting*.

[84] Tinto, K. J., R. E. Bell, I. Das, H. A. Fricker, L. Padman, D. Porter, C. Siddoway, **M. R. Siegfried**, S. R. Springer and the ROSETTA-Ice Team, 2018. Tectonic setting controls

long term stability of Ross Ice Shelf, *AGU Fall Meeting*.

[83] **Siegfried, M. R.** and D. M. Schroeder, 2018. Reconciling conflicting observations of active subglacial lakes: A case study on lower Mercer and Whillans ice streams, *WAIS Workshop*.

[82] *Adusumilli, S., H. A. Fricker, L. Padman and **M. R. Siegfried**, 2018. Time-varying freshwater fluxes from Antarctic ice shelves, *WAIS Workshop*.

[81] *Becker, M. K., H. A. Fricker, L. Padman, **M. R. Siegfried**, C. Mosbeux and T. J. Wagner, 2018. Dynamic small-scale morphology and mass-loss processes near the front of Ross Ice Shelf, *WAIS Workshop*.

[80] Das, I., L. Padman, R. E. Bell, K. J. Tinto, H. A. Fricker, N. Frearson, C. S. Siddoway and **M. R. Siegfried**, 2018. Multi-Decadal Basal Melt Rates from Airborne Radar for Ross Ice Shelf, Antarctica, *WAIS Workshop*.

[79] Schroeder, D. M., J. A. Dowdeswell, M. J. Siegert, R. G. Bingham, W. Chu, E. J. MacKie, **M. R. Siegfried**, K. I. Vega, J. R. Emmons and K. Winstein, 2018. Multi-Decadal Observations of the Antarctic Ice Sheet from Archival Radar Film, *WAIS Workshop*.

[78] **Siegfried, M. R.** and D. M. Schroeder, 2018. Radar sounding of active subglacial lakes on the Siple Coast, *Bay Area Glaciology Meeting*.

[77] Mosbeux, C., T. Wagner, M. Becker, H. A. Fricker and **M. R. Siegfried**, 2018. Buoyancy stresses as drivers of ice-shelf calving, *IGS Symposium on Timescales, Processes, and Glacier Dynamics*.

[76] **Siegfried, M. R.**, D. M. Schroeder and D. Castelletti, 2018. Looking forward and backward: New techinques for quantifying dynamic surface-height changes with radar atlimetry in Antarctica, *European Space Agency's 25 Years of Progress in Radar Altimetry*.

[75] **Siegfried, M. R.**, S. Adusumilli, H. A. Fricker, T. Scambos, D. Schroeder and B. Smith, 2018. Investigating Large Active Subglacial Lake Drainages in East Antarctica, *Scientific Committee on Antarctica Research Open Science Conference*.

[74] *Becker, M. K., H. A. Fricker, R. E. Bell, C. Mosbeux, L. Padman, D. F. Porter, **M. R. Siegfried** and T. J. Wagner, 2018. Ross Ice Shelf front morphology from airborne and satellite laser altimetry, *Workshop on Antarctic Surface Hydrology and Future Ice Shelf Stability*.

[73] Begeman, C. B., S. M. Tulaczyk, O. J. Marsh, J. A. Mikucki, T. P. Stanton, T. O. Hodson, **M. R. Siegfried**, R. D. Powell, K. Christianson and M. A. King, 2018. Ocean stratification reduces melt rates at the grounding zone of Ross Ice Shelf, *WAIS Workshop*.

2017

[72] **Siegfried, M. R.**, S. Adusumilli, H. A. Fricker, T. A. Scambos, D. M. Schroeder and B. E. Smith, 2017. Unraveling the cause of large surface-height anomalies on Slessor and Recovery glaciers, East Antarctica, with multi-mission data integration, *AGU Fall Meeting*.

[71] *Adusumilli, S., **M. R. Siegfried**, F. S. Paolo, H. A. Fricker and L. Padman, 2017. Twenty-three years of height changes on Antarctic Peninsula ice shelves, *AGU Fall Meeting*.

[70] *Becker, M. K., H. A. Fricker, L. Padman, R. E. Bell, **M. R. Siegfried**, C. C. M. Dieck and the ROSETTA-Ice Team, 2017. Mapping Ross Ice Shelf with ROSETTA-Ice airborne laser altimetry, *AGU Fall Meeting*.

[69] Begeman, C. B., S. M. Tulaczyk, O. Marsh, J. Mikucki, T. P. Stanton, T. O. Hodson, **M. R. Siegfried**, R. D. Powell, K. Christianson and M. A. King, 2017. Ocean stratification reduces melt rates at the grounding zone of Ross Ice Shelf, *AGU Fall Meeting*.

[68] †Key, K. and **M. R. Siegfried**, 2017. The feasibility of imaging subglacial hydrology beneath ice streams with ground-based electromagnetics, *AGU Fall Meeting*.

[67] Tinto, K. J., C. S. Siddoway, L. Padman, H. A. Padman, I. Das, D. F. Porter, S. R. Springer, **M. R. Siegfried**, F. C. Tontini, R. E. Bell and the ROSETTA-Ice Team, 2017. Duality of Ross Ice Shelf systems: crustal boundary, ice-sheet processes, and ocean circulation from ROSETTA-Ice surveys, *AGU Fall Meeting*.

[66] **Siegfried, M. R.**, 2017. Six years of variable height-changes of Siple Coast ice streams from CryoSat-2 altimetry, *WAIS Workshop*.

[65] *Adusumilli, S., **M. R. Siegfried**, F. S. Paolo, H. A. Fricker and L. Padman, 2017. Contrasting causes of decadal-scale variability of ice-shelf height changes across the Antarctic Peninsula, *WAIS Workshop*.

[64] *Becker, M. K., H. A. Fricker, L. Padman, R. E. Bell, **M. R. Siegfried**, C. C. M. Dieck and the ROSETTA-Ice Team, 2017. Mapping Ross Ice Shelf with ROSETTA-Ice airborne laser altimetry, *WAIS Workshop*.

[63] Begeman, C. B., S. M. Tulaczyk, O. J. Marsh, J. A. Mikucki, T. P. Stanton, T. O. Hodson, **M. R. Siegfried**, R. D. Powell, K. Christianson and M. A. King, 2017. Ocean stratification reduces melt rates at the grounding zone of Ross Ice Shelf, *WAIS Workshop*.

[62] *Elsworth, C. W., D. M. Schroeder and **M. R. Siegfried**, 2017. Internal layer deformation reveals past ice flow over the central sticky spot of Whillans Ice Stream, West Antarctica, *WAIS Workshop*.

[61] Padman, L., **M. R. Siegfried** and H. A. Fricker, 2017. Tides on Antarctic Ice Shelves from Cryosat-2 Radar Altimetry, *WAIS Workshop*.

[60] *Vega, K. I., D. M. Schroeder, E. J. MacKie, **M. R. Siegfried**, J. R. Emmons, K. Winstein, R. G. Bingham and J. A. Dowdeswell, 2017. Initial Analysis of High-Resolution Digitized Radar Sounding Data Recovered from the SPRI/NSF/TUD Film Archive of Antarctic Ice Sheet, *WAIS Workshop*.

[59] Damsgaard, A., J. Suckale, J. A. Piotrowski, M. Houssais, **M. R. Siegfried** and H. A. Fricker, 2017. Discrete-element simulation of subglacial sediments: Grounding-line proximate till mechanics and soft-bed channel dynamics, *GSA Annual Meeting*.

[58] **Siegfried, M. R.**, 2017. What's happening at the bed: Radar sounding of dynamic surface-height anomalies in East Antarctica, *Bay Area Glaciology Meeting 2017*.

[57] *Adusumilli, S., **M. R. Siegfried**, F. S. Paolo, H. A. Fricker and L. Padman, 2017. Twenty-three years of satellite radar altimetry over Antarctic ice shelves, *Forum for Research into Ice Shelf Processes Workshop*.

[56] *Becker, M., H. A. Fricker, L. Padman, **M. R. Siegfried**, R. E. Bell, C. D. Locke, S. Adusumilli, C. Bertinato, K. J. Tinto and the ROSETTA-Ice Team, 2017. High-Resolution Mapping of Ross Ice Shelf Thickness from ROSETTA-Ice Airborne LiDAR Surveys, *Forum for Research into Ice Shelf Processes Workshop*.

[55] *Adusumilli, S., **M. R. Siegfried**, F. S. Paolo, H. A. Fricker and L. Padman, 2017. Twenty-two years of radar-derived height changes over Antarctic ice shelves, *European Geosciences Union General Assembly 2017*.

[54] **Siegfried, M. R.** and H. A. Fricker, 2017. Fourteen years of subglacial lake activity in Antarctica from multi-mission altimetry, *North American CryoSat Science Meeting*.

[53] *Adusumilli, S., **M. R. Siegfried**, F. S. Paolo, H. A. Fricker and L. Padman, 2017. Extending Antarctic ice shelf height change time series using CryoSat-2, *North American CryoSat Science Meeting*.

[52] **Siegfried, M. R.**, 2017. SALSA Surface Geophysics Update: Current state at Subglacial Lake Mercer, *SALSA Project Planning Meeting*.

2016

[51] Damsgaard, A., D. L. Egholm, L. H. Beem, S. Tulaczyk, N. K. Larsen, J. A. Piotrowski and **M. R. Siegfried**, 2016. Subglacial sediment mechanics investigated by computer simulation of granular material, *AGU Fall Meeting*.

[50] Meyer, C. R., B. P. Lipovsky and **M. R. Siegfried**, 2016. Inferring subglacial lake water pressure from a bending model of surface displacement observations, *AGU Fall Meeting*.

[49] **Siegfried, M. R.**, B. C. Medley, K. M. Larson, H. A. Fricker and S. Tulaczyk, 2016. Detection of varability in surface processes with GPS interferometric reflectometry: application on Whillians Ice Plain, *WAIS Workshop*.

[48] Damsgaard, A., D. L. Egholm, L. H. Beem, S. Tulaczyk, N. K. Larsen, J. A. Piotrowski and **M. R. Siegfried**, 2016. Creep and stick–slip in subglacial granular beds forced by variations in water pressure, *WAIS Workshop*.

[47] Das, I., J. Millstein, W. Chu, **M. R. Siegfried**, L. Padman, R. Bell, K. Tinto, H. A. Fricker and the ROSETTA-ICE Team, 2016. Basal reflectivity, mass balance and structure of the Ross Ice Shelf, *WAIS Workshop*.

[46] Meyer, C. R., B. P. Lipovsky and **M. R. Siegfried**, 2016. Pressure changes in Subglacial Lakes, *WAIS Workshop*.

[45] **Siegfried, M. R.**, D. M. Schroeder, T. Scambos, S. P. Carter and H. A. Fricker, 2016. A large, rapid subglacial lake drainage beneath Slessor Glacier, East Antarctica, and its potential impact in the Filchner Trough, *IGS Symposium on Ice-Ocean Interaction*.

[44] Damsgaard, A., D. L. Egholm, L. H. Beem, S. Tulaczyk, N. K. Larsen, J. A. Piotrowski and **M. R. Siegfried**, 2016. Creep and stick–slip in subglacial granular beds forced by ocean tides, *IGS Symposium on Ice-Ocean Interaction*.

[43] Key, K. and **M. R. Siegfried**, 2016. The feasibility of imaging subglacial water systems near the grounding zone using electromagnetic soundings, *IGS Symposium on Ice-Ocean Interaction*.

2015

[42] **Siegfried, M. R.**, H. A. Fricker, S. P. Carter and S. Tulaczyk, 2015. Rapid subglacial water system evolution triggered by subglacial floods in West Antarctica, *AGU Fall Meeting*.

[41] Carter, S. P., H. A. Fricker and **M. R. Siegfried**, 2015. Antarctic subglacial lake drainage via canals incised into sediment: Progress from modelling and observations, *AGU Fall Meeting*.

[40] Tulaczyk, S., S. Y. Schwartz, A. Fisher, R. Powell, H. A. Fricker, S. Anandakrishnan, H. Horgan, R. Scherer, J. I. Walter, **M. R. Siegfried**, J. Mikucki, K. Christianson, L. Beem, K. Mankoff, S. P. Carter, T. Hodson, O. Marsh, C. Barcheck, S. Neuhaus, R. Jacobel and the WISSARD Science Team, 2015. Grounding Zones, Subglacial Lakes, and Dynamics of an Antarctic Ice Stream: The WISSARD Glaciological Experiment, *AGU Fall Meeting*.

[39] **Siegfried, M. R.**, H. A. Fricker and S. P. Carter, 2015. Extending the active subglacial lake record across Antarctica, *WAIS Workshop*.

[38] Tulaczyk, S., R. D. Powell, J. C. Priscu, B. C. Christner, A. T. Fisher, H. A. Fricker, J. A. Mikucki, F. Rack, R. P. Scherer, S. Y. Schwartz, M. Skidmore, C. Branecky, J. Burnett, S. U. Neuhaus, D. Sampson, **M. R. Siegfried**, R. Zook and the WISSARD Science Team, 2015. WISSARD at the Grounding Zone of Whillans Ice Stream: Scientific Operations and Initial Observations, *WAIS Workshop*.

[37] **Siegfried, M. R.**, H. A. Fricker, S. P. Carter and S. Tulaczyk, 2015. Rapid subglacial water system evolution triggered by a subglacial flood in West Antarctica, *IGS Symposium on Contemporary Ice-Sheet Dynamics*.

[36] Alley, K. A., T. A. Scambos, **M. R. Siegfried** and H. A. Fricker, 2015. Observations of basal melt channels on Antarctic ice shelves, *IGS Symposium on Contemporary Ice-Sheet Dynamics*.

[35] Fricker, H. A., F. S. Paolo, A. Luckman, **M. R. Siegfried**, T. A. Scambos, P. R. Holland and L. Padman, 2015. Is Larsen-C ice shelf ungrounding from Bawden Ice Rise?, *IGS*

Symposium on Contemporary Ice-Sheet Dynamics.

[34] Marsh, O., H. A. Fricker, **M. R. Siegfried**, K. Nicholls, H. F. J. Corr and G. Catania, 2015. Highly concentrated melting and channel formation at the grounding line of the southern Ross Ice Shelf, *IGS Symposium on Contemporary Ice-Sheet Dynamics*.

[33] **Siegfried, M. R.**, H. A. Fricker, S. P. Carter and T. A. Scambos, 2015. A decade of progress observing and modeling of Antarctic subglacial water systems, *Subglacial Antarctic lake exploration: first results & future plans*.

2014

[32] Carter, S. P., H. A. Fricker and **M. R. Siegfried**, 2014. On siphons and sediments: A new model for draining active subglacial lakes in Antarctica informed with satellite radar and laser altimeter observations, *AGU Fall Meeting*.

[31] Tulaczyk, S. M., J. Mikucki, **M. R. Siegfried**, J. Priscu, C. G. Barcheck, L. Beem, A. Behar, J. Burnett, B. Christner, A. Fisher, H. A. Fricker, K. Mankoff, R. Powell, F. Rack, D. Sampson, R. Scherer and S. Schwartz, 2014. WISSARD at Subglacial Lake Whillans, West Antarctica: Scientific operations and first observations, *AGU Fall Meeting*.

[30] **Siegfried, M. R.**, 2014. The trials and tribulations of monitoring subglacial hydrology with CryoSat-2, *LDEO Subglacial Hydrology Workshop*.

[29] **Siegfried, M. R.**, H. A. Fricker, S. P. Carter and S. M. Tulaczyk, 2014. Interruption of the Whillans Ice Stream stick-slip cycle by a subglacial lake discharge event, *WAIS Workshop*.

[28] Carter, S. P., H. A. Fricker and **M. R. Siegfried**, 2014. Half-full or half-empty? Informing a model of subglacial lake drainage with observations of surface motion, *WAIS Workshop*.

[27] **Siegfried, M. R.**, H. A. Fricker, S. P. Carter and the WISSARD Science Team, 2014. Explorations of the Antarctic subglacial environment from space, from the ice-sheet surface, and by direct sampling, *Scripps Student Symposium*.

[26] **Siegfried, M. R.**, H. A. Fricker, S. P. Carter, M. W. Roberts, T. A. Scambos and S. M. Tulaczyk, 2014. A decade of West Antarctic subglacial lake interactions from combined ICESat & CryoSat-2 altimetry, *EGU General Assembly*.

2013

[25] **Siegfried, M. R.**, H. A. Fricker, M. W. Roberts and T. A. Scambos, 2013. Subglacial flood event observed using in situ GPS data, CryoSat-2 altimetry, and MODIS image differencing on the Whillans Ice Plain, West Antarctica, *AGU Fall Meeting*.

[24] Carter, S. P., **M. R. Siegfried** and H. A. Fricker, 2013. A subglacial lake flood model for Antarctic lakes based on high resolution radar sounding and validated with satellite altimetry and GPS, *AGU Fall Meeting*.

[23] Glasser, N. F., T. O. Holt, D. J. Quincey, H. A. Fricker and **M. R. Siegfried**, 2013. Changing structures and dynamics of western Antarctic Peninsula ice shelves, *AGU Fall Meeting*.

[22] **Siegfried, M. R.**, H. A. Fricker, M. W. Roberts and T. A. Scambos, 2013. Subglacial flood event observed using in situ GPS data, CryoSat-2 altimetry, and MODIS image differencing on the Whillans Ice Plain, West Antarctica, *WAIS Workshop*.

[21] Carter, S. P., **M. R. Siegfried** and H. A. Fricker, 2013. Evidence of rapid subglacial water piracy under Whillans Ice Stream, *WAIS Workshop*.

[20] **Siegfried, M. R.**, H. A. Fricker, M. W. Roberts, L. H. Beem and S. M. Tulaczyk, 2013. Results from the vertical signals of the WISSARD GPS array, 2008–present, *WISSARD Science Meeting*.

2012

[19] **Siegfried, M. R.**, H. A. Fricker, L. H. Beem, K. A. Christianson, H. J. Horgan and S. M. Tulaczyk, 2012. A comparison of grounding zone features and flexure dynamics in two geometries over a 12-hour tidal range, *AGU Fall Meeting*.

[18] Carter, S. P., H. A. Fricker and **M. R. Siegfried**, 2012. Concerning the co-occurrence of

subglacial lakes and flow bifurcations of water and ice in Antarctica, *AGU Fall Meeting*.

[17] Urban, T. J., A. A. Borsa, K. M. Brunt, D. Felikson, H. A. Fricker, R. L. Hawley, M. A. Hofton, S. B. Luthcke, N. Pie, B. E. Schutz, C. A. Shuman, **M. R. Siegfried**, D. Yi and J. Zwally, 2012. Summary of ICESat-1 inter-campaign elevation bias and detection methods, *AGU Fall Meeting*.

[16] **Siegfried, M. R.**, H. A. Fricker, L. H. Beem, K. A. Christianson, H. J. Horgan and S. M. Tulaczyk, 2012. A comparison of grounding zone features and flexure in two geometries over a 12-hour tidal cycle, *WAIS Workshop*.

[15] Carter, S. P., H. A. Fricker and **M. R. Siegfried**, 2012. Subglacial lakes and logical extensions thereof, *WAIS Workshop*.

[14] **Siegfried, M. R.**, H. A. Fricker, L. H. Beem, K. A. Christianson, H. J. Horgan and S. M. Tulaczyk, 2012. A comparison of grounding zone flexure in two geometries over a 12-hour tidal cycle, *SCAR Open Science Conference*.

[13] Carter, S. P., **M. R. Siegfried** and H. A. Fricker, 2012. Modeling hydrologic connections between subglacial llake in Kamb and Whillans ice streams, *SCAR Open Science Conference*.

2011

[12] **Siegfried, M. R.**, K. A. Christianson, H. A. Fricker and S. M. Tulaczyk, 2011. Continuing the Whillans Ice Stream subglacial lake record with GPS, *AGU Fall Meeting*.

[11] **Siegfried, M. R.**, K. A. Christianson, H. A. Fricker and S. M. Tulaczyk, 2011. Continuing the Whillans Ice Stream subglacial lake record with GPS, *WAIS Workshop*.

[10] Carter, S. P., H. A. Fricker, **M. R. Siegfried**, D. D. Blankenship and W. Liscomb, 2011. Balancing the water budget of the Whillans Ice Plain: Implications for the nature of the subglacial hydrologic system, *WAIS Workshop*.

[9] **Siegfried, M. R.**, R. L. Hawley and J. F. Burkhart, 2011. Inter-campaign bias in ICESat elevation data near Summit, Greenland, *PARCA/IceBridge Workshop*.

2010

[8] **Siegfried, M. R.**, R. L. Hawley and J. F. Burkhart, 2010. High-resolution ground-based GPS measurements show inter-campaign bias in ICESat elevation data, *AGU Fall Meeting*.

[7] Jackson, B. P., **M. R. Siegfried**, V. F. Taylor and M. A. Voytek, 2010. Multiple chromatographic approaches to arsenic speciation in hydrothermal vent organisms, *Winter Conference on Plasma Spectrochemistry*.

[6] **Siegfried, M. R.**, R. L. Hawley and J. F. Burkhart, 2010. Inter-campaign ICESat accuracy at Summit, Greenland, *Dartmouth Graduate Student Poster Competition*.

2009

[5] **Siegfried, M. R.**, R. L. Hawley, J. F. Burkhart and S. O'Neel, 2009. A first-order accuracy assessment of GLAS elevation data near Summit, Greenland, *AGU Fall Meeting*.

[4] **Siegfried, M. R.**, V. F. Taylor, M. A. Voytek and B. P. Jackson, 2009. Aresenic Concentration and Speciation in Three mid-Atlantic Ridge Hydrothermal Vent Organisms, *GSA Annual Meeting*.

2008

[3] Quicksall, A. N., B. C. Bostick and **M. R. Siegfried**, 2008. Quantifying Mineralogical Transformations of Ferrihydrite Sulfidization in Microcapillary Columns by Rietveld Refinements using In Situ Synchrotron-Based WAXS, *GSA Annual Meeting*.

2007

[2] Quicksall, A. N., B. C. Bostick, S. M. Webb and **M. R. Siegfried**, 2007. Real-Time, In-Situ, WAXS Analysis of Mineralogical Transformations from Iron (Oxy)Hydroxide Sulfidization, *SSRL/LCLS Users Meeting*.

[1] Quicksall, A. N., B. C. Bostick and **M. R. Siegfried**, 2007. Reductive Mineralogical Transformations in the Fe-S-H2O System, *Northeast GSA*.