

Matthew R. Siegfried

CONTACT INFORMATION	Department of Geophysics Colorado School of Mines 1500 Illinois St Golden, CO 80401 USA	Tel: 650.497.6509 Mobile: 847.525.8487 siegfried@mines.edu https://www.minesglaciology.com
ACADEMIC APPOINTMENTS	Assistant Professor	starting January 2019
	Department of Geophysics College of Earth Resource Sciences and Engineering Colorado School of Mines	
	Thompson Postdoctoral Fellow	May 2017 to present
	Department of Geophysics School of Earth, Energy, and Environmental Sciences Stanford University Mentor: Dr. Dustin M. Schroeder	
EDUCATION	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	
	PhD in Earth Sciences	October 2015
	Institute of Geophysics and Planetary Physics Scripps Institution of Oceanography, La Jolla, CA Dissertation: <i>Investigating Antarctic ice sheet subglacial processes beneath the Whillans Ice Plain, West Antarctica, using satellite altimetry and GPS</i> Adviser: Dr. Helen A. Fricker	
	Master of Science in Earth Sciences	July 2010
	Dartmouth College, Hanover, NH Thesis: <i>On the use of high-precision GPS surveys for validation of ICESat altimetry measurements and investigation of seasonal ice-surface fluctuations</i> Adviser: Dr. Robert L. Hawley	
	Bachelor of Arts in Earth Sciences	June 2008
	Dartmouth College, Hanover, NH <i>Magna cum Laude, Phi Beta Kappa</i> Senior Thesis for High Honors: <i>Hydrothermal Waters of Ischia, Italy: A revisitation of groundwater mixing and the ramifications for environmental arsenic contamination</i> Adviser: Dr. Benjamin Bostick	
MANUSCRIPTS IN REVIEW	* indicates student-led manuscript	
	[29] 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, 2018. Land ice height-retrieval algorithms for NASA's ICESat-2 photon-counting laser altimeter, <i>Remote Sensing of Environment</i>, in review. [28] 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., 2018. Tectonic	

imprint on bathymetry drives Ross Ice Shelf response to changing climate, *Nature Geoscience*, in review.

REFEREED
JOURNAL
PUBLICATIONS

- [27] 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*, accepted
 - [26] **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.
 - [25] 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*, doi:10.1029/2018JC013987, in press.
 - [24] *Adusumilli, S., H. A. Fricker, **M. R. Siegfried**, L. Padman, F. Paolo and S. Ligtenberg, 2018. Basal melt rates of Antarctic Peninsula ice shelves from satellite radar altimetry, 1994–2016, *Geophysical Research Letters*, **45**(9), 4086–4095, doi:10.1002/2017GL076652.
 - [23] 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.
 - [22] Paolo, F. S., L. Padman, H. A. Fricker, S. Adusumilli, S. Howard and **M. R. Siegfried**, 2018. Rapid response of West Antarctic ice shelves to ENSO variability, 1994–2017, *Nature Geoscience*, **11**, 121–126, doi:10.1038/s41561-017-0033-0.
- 2017
- [21] **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.
 - [20] 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.
 - [19] Kerry, 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.
 - [18] 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.
 - [17] 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.

2016

- [16] 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.
- [15] **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.
- [14] Alley, K. E., T. A. Scambos, **M. R. Siegfried** and H. A. Fricker, 2016. Impacts of warm water on basal channel formation and links to Antarctic ice shelf stability, *Nature Geoscience*, **9**(4), 290–293, doi:10.1038/ngeo2675.
- [13] 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.

2015

- [12] 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.
- [11] 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

- [10] **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.
- [9] 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.
- [8] 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.
- [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 and others, 2013. A microbiologically clean strategy for access to the Whillans Ice Stream subglacial environment, *Antarctic Science*, **25**(05), 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.

OTHER
PUBLICATIONS

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>.

FUNDED
GRANTS**National Aeronautics and Space Administration**

- Solicitation: IceBridge Science Team
 Title: *Quantifying the error distribution of Operation IceBridge swath altimetry to generate robust, long-duration time series of height-changes over dynamic features in Antarctica*
 Period: 4/2017–3/2020
 Science PI/Science Team Member: M. Siegfried (Institutional PI: H. Fricker)
 Funded Amount: \$334,080
- Solicitation: Studies with ICESat and CryoSat-2
 Title: *Understanding the climate drivers of Antarctic ice shelf changes through analyses of multi-mission satellite altimetry, airborne remote sensing and models*
 Period: 1/2017–12/2019
 PI: L. Padman (ESR)
 Co-I: H. Fricker (SIO)
 Funded Amount: \$863,849 (\$384,955 to UCSD)

National Science Foundation

- Program: Antarctic Integrated System Science
(supplement to *Collaborative Research: Subglacial Antarctica Lake Scientific Access*)
Period: 5/2018–5/2019
Title: *Subglacial Lake Mercer temperature time series for quantifying lake dynamics*
Science PI: M. Siegfried (Institutional PI: H. Fricker)
Funded Amount: \$39,917
- Program: Antarctic Glaciology
Period: 12/2017–11/2020
Title: *Mapping Antarctic subglacial water in three dimensions with novel electromagnetic techniques*
Science PI: M. Siegfried (Institutional PI: H. Fricker)
Co-I: K. Key
Funded Amount: \$448,933
- Program: Antarctic Integrated System Science
Title: *Collaborative Research: Subglacial Antarctica Lake Scientific Access (SALSA)*
Period: 9/2016–8/2019
PI: J. Priscu (MSU)
Co-Is: M. Skidmore (MSU), A. Leventer (Colgate), E. Domack (U. South Florida),
Brad Rosenheim (U. South Florida), Brent Christner (U. Florida), W.B. Lyons (OSU),
H. Fricker (SIO)
Funded Amount: \$2,900,162 (\$349,732 to UCSD)

Stanford University Department of Geophysics

- Thompson Postdoctoral Fellowship, 2017–2019 \$135,000

National Aeronautics and Space Administration

- Earth and Space Science Fellowship, 2011-2014 \$90,000

TEACHING
EXPERIENCE**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 |

Guest Lecturer

- | | |
|--|--------------|
| The basal rheology knob | |
| <i>SIO209: Ice Sheet Seminar</i> | 3 Feb. 2017 |
| Antarctic Estuary Dynamics | |
| <i>SIO219: Estuarine and Coastal Processes</i> | 6 Jun. 2016 |
| Ice Dynamics | |
| <i>SIO115: Ice and the Climate System</i> | 25 Feb. 2015 |
| Joint Workshop at the Vatican | |
| <i>SIO209: Lectures in Sustainable Science</i> | 6 Jun. 2014 |

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, Quaternary 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

Guest Lecturer

Data analysis and scientific writing

ENVS25: Ecological Agriculture 25 Aug. 2009

Paleoclimate and ice ages

EARS70: Glaciology 19 May 2009

Life through a Snowball

EARS86: Polar Geobiology 9 Dec. 2008*Grader*

Differential Equations Winter 2008

INVITED
TALKS

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

<i>Geophysics Seminar, Stanford University</i>	1 Mar. 2016
Extending the episodic hydrology record across Antarctica	
<i>West Antarctic Ice Sheet Workshop</i>	19 Sep. 2015
Peering under the ice to the Antarctic Slip 'n' Slide	
<i>UCSD Extension: Environmental Leadership & Sustainability</i>	06 Jul. 2015
Investigating coupled subglacial hydrologic and ice dynamic evolution using ground- and satellite-based observations	
<i>Center for Climate Sciences Research Seminar, NASA-JPL</i>	19 Jun. 2015
Using CryoSat-2 to retrieve dynamic surface changes (& observations of stick-slip motion)	
<i>IGPP Geodesy Seminar, Scripps Institution of Oceanography</i>	22 Apr. 2015
A decade of progress observing and modeling Antarctic subglacial water systems	
<i>Subglacial Antarctic lake exploration: first results and future plans, The Royal Society [H. Fricker invited; M.R.S. presented]</i>	30 Mar. 2015
Understanding the Antarctic Slip 'n' Slide	
<i>Scripps Donor Brunch, Scripps Institution of Oceanography</i>	1 Mar. 2015
Highlights and reflections on The Workshop and beyond	
<i>CMBC Brown Bag, Scripps Institution of Oceanography</i>	3 Jun. 2014
Instability of the Amundsen Sea Embayment	
<i>Climate Journal Club, Scripps Institution of Oceanography</i>	22 May 2014
WISSARD: Progress, Pictures, and Prospects	
<i>Scripps Polar Seminar, Scripps Institution of Oceanography</i>	4 Jun. 2013
GLAS accuracy and elevation change at Summit, Greenland	
<i>Geolunch Brown Bag Series, Dartmouth College</i>	11 May 2010

PROFESSIONAL
SERVICE

Committee Service

- IRIS/UNAVCO, Polar Networks Science Committee, Member, 2018–present
- NASA IceBridge Mission, Science Team, Member, Jan. 2017–present
- American Meteorological Society Committee on Polar Meteorology and Oceanography, Member, Jan. 2017–present
- OpenAltimetry User Working Group, Member, Jun. 2017–present
- NASA ICESat-2 Science Definition Team, Participant, 2011–present

Editorial Service

- Section Editor for Cryosphere, *Encyclopedia of Ocean Sciences*

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 Cryospheric Sciences (panel member, ad hoc)*, *NSF Antarctic Earth Sciences (ad hoc)*, *NSF Antarctic Integrated System Science (ad hoc)*

Conference Service

- 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: *Cryosphere/Sea-Level* (2018 UNAVCO Science Workshop); *Advances in understanding processes at the beds of glaciers and ice sheets* (AGU Fall Meeting 2017); *Advances in understanding processes at the beds of glaciers and ice sheets* (AGU Fall Meeting 2016); *IgniteIGS—Early career perspectives on the future of ice-ocean research* (IGS La Jolla 2016); *Greenland Run-off* (IGS La Jolla 2016); *Advances in Our Understanding of Processes at the Beds of Glaciers and Ice Sheets* (AGU Fall Meeting 2015)
- Judging: *Flash Freeze Cryosphere Innovation Award for Students* (AGU Fall Meeting 2017); *Outstanding Student Presentation Award* (AGU Fall Meeting 2017)

Workshops

- Rapid Access Ice Drill (RAID) Science Workshop 2017, 2–3 Mar. 2017, La Jolla, California.
Helped develop and write Science and Implementation Plan for the future use of RAID.
- Subglacial Access Drilling: An Ice Drilling Program Office science planing workshop, 22–23 May 2016, Herndon, Virginia.
Invited participant to discuss community scientific goals, potential drilling targets, and proposed dates for major science projects to be included in the IDPO Long Range Science Plan.
- West Antarctica Ice Sheet science plan development, 13–15 Jan. 2016, University of Colorado, Boulder.
Co-authored white paper submitted to the National Science Foundation Antarctic Program entitled, How much, how fast? A decadal science plan quantifying the rate of change of the West Antarctic Ice Sheet now and in the future.

Outreach

- Research highlighted in press releases from multiple institutions, including the [National Science Foundation](#), [University of Colorado, Boulder](#), and [Scripps Institution of Oceanography](#).
- Developed exhibit “Understanding Ice: Antarctica in 360” for Stanford Library’s Earth Day 2018 symposium (24 Apr. 2018)
- Worked with U.S. Senator Lisa Murkowski’s DC staff to highlight Operation Ice-Bridge’s work in her home state of Alaska (Facebook, 17 Mar. 2017)
- Featured in “Science fest at South Pole: Scripps Institution of Oceanography participating in eight studies, leading seven, in Antarctica this winter” (San Diego Union Tribune, Page B1, 16 Oct. 2016)
- Featured in “What Are You Doing This (Austral) Summer?” (UC San Diego News, 6 Oct. 2016)
- Invited panelist for “A Deep Dive in Ocean and Climate Science”, hosted by U.S. Department of State at the COP21 Summit, Paris, France; [available on YouTube](#) (9 Dec. 2015)
- Live Q&A on [nature.com](#): “Life on the ice” (13 Nov. 2015)
- Fieldwork weblog: “Antarctic Journal” (*Nature News*, Oct.–Dec. 2015)
- Participated in briefing for Congressman Scott Peters (CA-52) on current climate change research (18 Feb. 2015)
- Featured in “Scripps Grad Students Attend Sustainability Conference at the Vatican” (*explorations now*, 3 Jul. 2014)
- Radio interview: “Maybe Next Year? Antarctic Research Suspended Under Government Shutdown” (KPBS News, 10 Oct. 2013)

- TV interview: “Government Shutdown’s Impact on San Diegans” (NBC7 San Diego Evening News, 1 Oct. 2013)
- Ocean Beach Elementary, 3rd and 4th Grade, 7 Jun. 2013
- Featured in “At the Ends of the Earth” (*Triton Magazine*, May 2013)
- Featured in “Drilling into the Unknown” (*explorations now*, 11 Jan. 2013)
- Ocean Beach Elementary, 3rd and 4th Grade, 26 Mar. 2012

UNIVERSITY
SERVICE

Stanford School of Earth, Energy, & Environmental Sciences Strategic Plan
Postdoctoral Scholar Committee, member, 2017.

Scripps Peer Leadership Committee

Founding student member, 2014–2016. Committee oversees the Peer Mentor Program for first-year graduate students at the Scripps Institution of Oceanography.

Scripps Polar Seminar

Seminar organizer, 2013–2016.

Scripps Earth Section Seminar

Seminar co-organizer, 2012–2013.

Dartmouth College Faculty Search Committee, Geomorphology

Student Representative, 2008.

Dartmouth College Faculty Search Committee, Remote Sensing

Student Representative, 2007.

SIGNIFICANT
FIELD
EXPERIENCE

Whillans Ice Plain, West Antarctica, Surface Geophysics	2018–2019
<i>Expedition Lead, Field Medic</i>	
Whillans Ice Plain, West Antarctica, Surface Geophysics	2017–2018
<i>Expedition Lead, Field Medic</i>	
Whillans Ice Plain, West Antarctica, Surface Geophysics	2016–2017
<i>Expedition Lead, Field Medic</i>	
Ross Ice Shelf, Antarctica, Airborne Geophysics	2015
<i>Flight Scientist, Data Engineer</i>	
Whillans Ice Plain, West Antarctica, Surface Geophysics	2014–2015
<i>Expedition Lead, Field Medic</i>	
Whillans Ice Plain, West Antarctica, Surface Geophysics	2013–2014
<i>GPS Team Leader, Field Medic</i>	
Whillans Ice Plain, West Antarctica, Surface Geophysics	2012–2013
<i>Surface Geophysics Team Leader, Field Medic</i>	
Whillans Ice Plain, West Antarctica, Surface Geophysics	2011–2012
Northern New Mexico, Southern Colorado, Geology and Geomorphology	2010
<i>Field Trip Organizer and Leader</i>	
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

Scripps Institution of Oceanography

Student Video Challenge, 2014

Award Winner

Director's Cabinet Quarterly Meeting, May 2014	Invited Presenter
Pontifical Academy of Sciences/Pontifical Academy of Social Sciences	
<i>Sustainable Humanity, Sustainable Nature: Our Responsibility</i>	
Joint Workshop, May 2014	Invited Observer
West Antarctic Ice Sheet Workshop	
Best Student Presentation, 2013	Award Winner
United States Congress	
Antarctic Service Medal, 2012	Medal Recipient
Dartmouth College	
NASA Space Grant Graduate Student Award, 2010	Award Winner
Dana Collection of Minerals, 2007-2008	Assistant Curator

PROFESSIONAL MEMBERSHIPS American Geophysical Union, 2008–present
International Glaciological Society, 2010–present
American Meteorological Society, 2017–present

CONFERENCE
ABSTRACTS

* indicates student presentation
† indicates M.R.S. presenting author

- [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*.
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