

Seth William Campbell

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Juneau Icefield Research Program
The Foundation for Glacier
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Education

2014	Ph.D. Earth & Climate Sciences	University of Maine, Orono
2010	M.S. Earth Sciences	University of Maine, Orono
2008	B.S. Earth Sciences	University of Maine, Orono
2005	M. Business Administration	University of Maine, Orono
2001	B.A. Environmental Science, Minor: Geology	University of Maine, Farmington

Current Employment

2018 – Present	University of Maine, Assistant Professor of Glaciology Climate Change Institute <i>and</i> School of Earth & Climate Sciences
2018 – Present	Juneau Icefield Research Program, Director of Academics & Research
2016 – Present	ERDC-CRREL, Research Geophysicist (Intermittent Status)

Prior Employment

2015 – 2018	University of Maine, Research Assistant Professor
2016 – 2018	University of Washington, Post-Doctoral Research Associate
2014 – 2016	ERDC-CRREL, Research Geophysicist
2014 – 2017	University of California, Davis, Research Associate
2011 – 2014	University of Maine, Graduate Research Assistant
2009 – 2014	ERDC-CRREL, Research Physical Scientist
2010 – 2012	University of Washington, Professional Research Staff
2008 – 2009	University of Maine, Graduate Teaching Assistant
2000	E/Pro Engineering & Environmental Consulting, Survey Technician
1999 – 2000	Central Maine Power Company, Survey Technician
1999	Maine Dept. of Environmental Protection, Research Technician
1998	U.S. Environmental Protection Agency, Environmental Research Intern

Funded Grants & Awards (Total Current: \$4,157,209) (63% Funding Success Rate with NSF)

2019-2020: NSF EAGER P2C2: Reconnaissance of a new Potential Arctic Ice Core Drill Site on Mount Logan. D Winski (PI) **S Campbell**, K Kreutz (co-PI's) \$62,106

2018-2022: NSF Antarctic Glaciology: Constraining WAIS elevation at Mt. Waesche during the last interglacial using AR/AR and cosmogenic exposure ages of sub-glacial lava flows. J Mitrovica (PI) R Ackert, M Zimmerer, N Dunbar, W Macintosh (Co-PI's) **S Campbell** (UMaine PI) \$734,190* (\$182,224 to UMaine) (25% Author)

2018-2019: NSF RAPID Proposal: Constraining kinematics of the Whillans/Mercer Ice Stream Confluence. **S Campbell** (PI) P Koons (Co-PI) \$48,438* (all to UMaine) (30% Author)

2018-2019: Purdue Prime Lab: Reconstruction of Juneau Icefield Holocene Deglaciation and Erosion Rates in support of Understanding Broader Earth Systems Dynamics in Southeast Alaska. **S Campbell** (PI), L Corbett, P Bierman, G Balco, P Koons (Co-PI's) \$10,900* (\$0 to UMaine) (100% Author)

2019-2021: Replacement of the Mount Logan Ice Core. A Criscitiello (PI) **S Campbell**, K Kreutz (co-PI's) \$465,876* (\$77,868 to UMaine) (10% Author)

2018-2019: NSF AIL: McMurdo Shear Zone Route Move. Z Courville (PI), **S Campbell** (Co-PI's) \$145,000* (\$0 to UMaine) (40% Author)

2017-2019: NSF Antarctic Glaciology: Collaborative research: Computational methods supporting joint seismic and radar inversion for ice fabric and temperature in streaming flow. C Gerbi (PI), **S Campbell**, K Christianson, Sentil Vel (Co-PI's) \$328,622* (\$195,010 to UMaine) (10% Author)

2016-2019: NSF Arctic # 1503924: Collaborative Research: Influence of natural ice microstructure on rheology in general shear: In-situ studies in the Alaska Range; C Gerbi (PI), **S Campbell**, R Hawley, P Koons, K Kreutz (Co-PIs) \$639,818* (\$420,937 to UMaine) (15% Author)

2018-2022: NSF Antarctic Glaciology: NSFPLR-NERC: Geological History Constraints on the Magnitude of Thwaites Glacier Grounding Line Retreat. B Goehring (PI), J Johnson, B Hall, **S Campbell**, G Balco, J Stone, J Woodward (Co-PI's) \$1,834,792* (\$246,566 to UMaine) (15% Author)

2016-2018: NSF P2C2 #1502783: Geophysical Reconnaissance to expand ice core hydro-climate reconstructions in the Northeast Pacific; K Kreutz (PI), **S Campbell** (Co-PI) \$214,890*

2016-2018: NSF AIL: Reconnaissance of a new potential route to access McMurdo Ice Shelf from McMurdo Station. **S Campbell** (PI), N Lamie (Co-PI) \$85,357

2017-2018: NSF AIL: GPR Survey, Analysis, and Interpretation of McMurdo Station. S Sinclair (PI) **S Campbell**, S Arcone (Co-PI's) \$51,236

2014-2017: NSF Polar #1304905: What role do glaciers play in terrestrial sub-arctic hydrology? A Liljedahl (PI), R Hock, **S Campbell** (co-PIs) \$844,653

2015-2017: NSF Antarctic Glaciology: Allan Hills Englacial Site ice core site selection; N Spaulding (PI), H Conway, A Kurbatov, P Mayewski (Co-PI's) **S Campbell** (Post-Doc) \$188,845

2014 – 2017: NSF Antarctic Glaciology #1341658: Constraining Plio-Pleistocene West Antarctic ice sheet behavior from the Ohio Range and Scott Glacier; S Mukhopadhyay (PI), R Ackert, **S Campbell** (Research Associate) \$582,113

2015-2016: BSEE Research: Quantitative Measurements of In-Situ burn efficiency and rate. P Panetta (PI), **S Campbell** (CRREL PI) G Hewitt, L Zabilansky, A Rangwal (co-PIs) \$172,885

2015-2016: NSF AIL: Geotechnical Assessment for McMurdo Station Landscape and Infrastructure Improvements; R Affleck (PI), **S Campbell** (Co-PIs) \$197,427

2015-2016: NSF AIL: Geophysical Survey of McMurdo Ice Shelf to determine current infrastructure stability and for future planning; **S Campbell** (PI), S Shoop, Z Courville (Co-PIs) \$98,500

2015: Engineer Research and Development Center Development Funding for ERDC-CRREL Ice Engineering Facility; B Davis, Z Courville, **S Campbell**, R Affleck (Co-PI's) \$2,500,000

2015: NSF AIL: Crevasse Snow Bridge Strength: Extending Current Crevasse Crossing Criteria to the Arctic; Z Courville (PI), **S Campbell**, J Lever (Co-PI's) \$55,000

2015: National Geographic Waitt Grant: Developing a Holocene climate record for the Southern Hemisphere Westerlies in Patagonia and South Georgia Island; K Kreutz (PI), **S Campbell** (co-PI) \$11,952

2014: BSEE Research: Testing of Oil Skimmer Equipment Components for use in Arctic Environments; L Zabilansky (PI) S Campbell (co-PI) \$300,000

2012 – 2014: NSF P2C2 #1204035: Reconstructing central Alaskan precipitation variability and atmospheric circulation during the past millennium; E Osterberg (PI), K Kreutz, S Birkel, C Wake (Co-PIs), **S Campbell** (PhD candidate) \$891,846

Pending Proposals

NASA SnowEx Pre-Proposal: (to NASA) East Coast SnowEx. C Vuyovich (PI) J Brotzge, L Burakowski, **S Campbell**, E Deeb, M Durand, J Jacobs, E Kelsey, T Letcher, A Langlois, S M, J Minder, J Ramage, A Roy, A Royer, P Siqueira, S Tuttle, J Wang (Co-PI's) (no budget required) (10% Author)

NASA EPSCoR Proposal: lighter than air (LTA) airship technology for Forestry, Coastal, and Polar Research. W Friess (PI), A Goupee, P Rahimzadeh-Bajgirani, M Tajvidi, **S Campbell** (Co-PI's) (\$743,515; all to UMaine) (20% Author)

NSF Antarctic Glaciology: Site Survey for Subglacial Bedrock Exposure dating at the Margin of Wilkes Basin in Northern Victoria Land. G Balco (PI), **S Campbell**, C Todd (Co-PI's) (\$357,348; \$99,742 to UMaine) (20% Author)

NSF P2C2: Evaluating North Pacific hydroclimate during the Holocene using the Denali ice core archive. K Kreutz (PI) **S Campbell**, D Winski, A Kurbatov (Co-PI's) (\$333,031) (10% Author)

Proposals in Prep 2019-2020

NSF Radar Facility and Instrumentation Proposal: **S Campbell** (PI), Z Courville (Co-PI) (80% Author on Internal Proposal to NSF, approved for full proposal submission to NSF)

NSF Cryosphere Geophysics Workshop Proposal: **S Campbell** (PI), R Aster (Co-PI)

NSF Arctic Seismic/GPS Juneau Icefield Instrumentation Proposal: **S Campbell** (PI) (80% Author on Internal Proposal to NSF; Approved for full proposal submission to NSF)

Withdrawn Proposals 2019-2020

NSF Critical Zone Observatory: Critical Zone Collaborative Network of permafrost and glacier affected Alaska. J Guerard (PI), A Liljedahl, **S Campbell**, C Gerbi, P Koons, K McHenry, D D'Amore, E Hood, J Fellman, L Munk, S Hayes, G Wolken, R Daanen (co-PI's) NOTE: I provided input on planning, strategy,

and science objectives for this proposal at early stages. Unfortunately, proposal leadership failed to meet initial proposal deadlines. (10% Author)

Declined Proposals

The Research Council of Norway: FRIPRO (Fri Projektstøtte - Free Project Support) International Mobility Grant: Constraining the influence of glacier hydrology on ice dynamics of the Juneau Icefield, Alaska. C Shackleton (PI), **S Campbell**, J Kingslake, A Hodson (Co-PI's) (\$431,894) (25% Author)

European Commissions: Marie Skłodowska-Curie Actions, Global Individual Fellowship: Glacier hydrology and impacts on ice dynamics of the Juneau Icefield, Alaska. C Shackleton (PI), **S Campbell**, J Kingslake, A Hodson (Co-PI's) (\$312,695) (25% Author)

Keck Pre-Proposal (Stage 2): Decadal Prediction to 2100 of Arctic Coastal Evolution with Changing Climate. P Koons (PI), **S Campbell**, K Schild, L Ross, S Roy, S Birkel, A Liljedahl (co-PI's) \$999,956 (3 years – Due 8 Nov 2019) \$1,000,000; \$949,698 to UMaine (20% Author)

NSF Antarctic Glaciology: An Absolute Pinning Point for Ice-Core Paleo-altimetry P Spector (PI), G Balco, **S Campbell**, D Winski (Co-PI's) (\$881,377; \$190,747 to UMaine) (20% Author)

NSF CAREER Proposal: Reducing Uncertainty of meltwater influence on Glacier Mass Balance and Dynamics in Alaska. **S Campbell** (PI) \$1,327,774 (100% Author)

NASA ICESat-2 Proposal: Quantifying Mass Balance Components and Dynamic Surface Lowering Contributions across Alaska Glaciers. **S Campbell** (PI) K Schild, B Minchew, M Truffer, C Vuyovich, S O'Neel (Co-PI's) \$843,981 (Total to UMaine: \$513,066 of which \$208,961 is subawarded to MIT and UAF; Total to NASA and USGS: \$90,915) If funded, UMaine has the option to negotiate up to \$240,000 over three years direct to UMaine to cover project management and support activities) (Total: \$843,981; Total to UMaine: \$753,066) (80 % Author)

NSF NRT Pre-Proposal: (to UMaine) Developing an Earth Engineering Graduate Program Focused on Polar to Marine Environments. **S Campbell** (PI) Kristin Schild, Peter Koons, Alex Friess, Lauren Ross, Sam Roy, Peter Koons, Chris Gerbi, Jean McCrae (co-PI's) \$2,998,499 (80% Author)

NSF CAREER Proposal: Constraining supra-glacial, englacial, and basal water influence on Glacier Dynamics: An Alaska analog to Ice Sheet Hydrology. **S Campbell** (PI) \$999,950 (100% Author)

NSF Antarctic Glaciology: Structural, Meteoric, and Marine Ice Controls on McMurdo Ice Shelf Dynamics. **S Campbell** (PI), K Schild, P Koons, D Winski, S Arcone, Z Courville (co-PI's) \$1,289,504 (80% Author)

NSF P2C2: A high-resolution Holocene ice core record of North Pacific climate variability from the Eclipse Icefield. Kreutz K (PI) **S Campbell**, D Winski, A Kurbatov, E Osterberg, K Christianson. Total Funds: \$1,302,070 UM Funds: \$742,789. Submission Date: 10/2018 (48 months) (15 % Author)

University of Maine Internal Proposal: Graduate STEM Training for Aerial Remote Sensing (Graduate STARS) Alex Friess (PI) **S Campbell**, A Goupee Total Funds: \$141,924 UM Funds: \$141,924 Submission Date: 11/2018 (12 months) (30% Author)

NASA ICESat-2: Cal-Val measurements and Mass Balance-Dynamic Signals of the Temperate Juneau Icefield, Alaska. S Campbell (PI) K Schild, M Truffer, B Smith, B Csatho, B Minchew Total Funds: TBD

Submission Date: 11/2018 (12 months). NOTE: I discussed a proposal idea with prior NASA Cryosphere and ICESat-2 program manager, Dr. Tom Wagner. Dr. Wagner requested I submit an internal proposal with no specific budget. I submitted the proposal, however, Dr. Wagner moved on to a new program manager position within NASA, so the proposal was no longer under consideration for internal funds. Our team revised and expanded the proposal for full submission in FY 2019. (80% Author)

Publications

2019

Baker EH, McGee S, **Campbell S**, Pierce JL, McNeil CJ (2019) Weather station data on the Juneau Icefield: U.S. Geological Survey data release, <https://doi.org/10.5066/P9DUI71J>. (5% Review)

2018

Campbell S, Affleck R, Sinclair S* (2018) [Ground-Penetrating Radar Studies of Permafrost, Periglacial, and Near-Surface Geology at McMurdo Station, Antarctica](#). *Cold Regions Science & Tech.*, (148), 38-49 (95% Author)

Miner KR, **Campbell S**, Gerbi C, Liljedahl A, Anderson T, Perkins BL, Bernsen S, Kreutz KJ (2018) [Organochlorine Pollutants within a Polythermal Glacier in the Interior Eastern Alaska Range](#). *Water*, 10, 1157, 14 pp. doi:10.3390/w10091157. (20% Fieldwork; 10% Review)

Sinclair S*, Licciardi J, **Campbell S**, Madore B (2018) [Origin of De Geer moraines in the Seacoast region of New Hampshire](#). *Journal of Quaternary Science*, 13 pp. ISSN 0267-8179. DOI: 10.1002/jqs.3017 (20% Author, 20% Field Effort)

Miner K, Kreutz K, Jain S, **Campbell S**, Liljedahl (2018) A screening-level approach to quantifying risk from glacial release of organochlorine pollutants in the Alaskan Arctic. *Nature (Journal of Exposure Science & Environmental Epidemiology)*. <https://doi.org/10.1038/s41370-018-0100-7>. (10% Author-review, 20% Field Effort)

Kehrl L*, Conway H, Holschuh N, **Campbell S**, Kurbatov A, Spaulding N (2018) [Evaluating the Duration and Continuity of Potential Climate Records from the Allan Hills Blue Ice Area, East Antarctica](#). *Geophysical Research Letters*, 45(9), 4096-4104. (20% Field Effort; 10% Author-review)

Polashenski D*, Osterberg E, Koffman B, Winski D, Kreutz K, Wake C, Ferris D, Introne D, **Campbell S**, Stamieszkin K, Lewis G* (2018) [Denali ice core methanesulfonic acid records north Pacific marine primary production](#). *Geophysical Research Letters*, 123(9), 4642-4653. (20% Field Effort, 5% Manuscript Review)

Winski D, Osterberg E, Kreutz K, Wake C, Ferris D, **Campbell S** (2018) [A 400-year ice core melt layer record of summertime warming in the Alaska Range](#). *Journal of Geophysical Research: Atmospheres*, 123. <https://doi.org/10.1002/2017JD027539> (20% Field Effort, 15% modeling and manuscript review)

2017

Campbell S, Courville Z, Sinclair S*, Wilner J* (2017) Brine, [Englacial structure, and basal properties near the terminus of McMurdo Ice Shelf, Antarctica](#). *Ann. Glaciol.* 1-11. DOI: 10.1017/aog.2017.26

Winski D, Osterberg E, Ferris D, Kreutz K, Wake C, **Campbell S**, Hawley R, Roy S, Birkel S, Introne D, Handley M (2017) [Industrial-age doubling of snow accumulation in Central Alaska linked to tropical ocean warming](#). *Nature Scientific Reports*, (2017) 7:17869 DOI:10.1038/s41598-017-18022-5

Osterberg E, Winski D, Kreutz K, Wake C, Ferris D, **Campbell S**, Introne D, Handley M, Birkel S (2017) [1200-Year Composite Ice Core Record of Aleutian Low Intensification](#). *Geophysical Res. Letters*, 44, 7447–7454, doi:10.1002/2017GL073697

2016

Balco G, Todd C, Huybers K, **Campbell S**, M Vermeulen*, M Hegland*, B Goehring, T Hillebrand (2016) [Cosmogenic-nuclide exposure ages from the Pensacola Mountains adjacent to the Foundation Ice Stream, Antarctica](#). *American Journal of Science*, **316**, 542-577. DOI: 10.2475/06.2016.02

Douglas T, Jorgenson T, Brown D, **Campbell S**, Hiemstra C, Saari S, Bjella K, Liljedhal A (2016) [Degrading permafrost mapped with electrical resistivity tomography, airborne LiDAR, and seasonal thaw measurements](#). *Geophysics*, **81**(1), WA71–WA85, DOI: 10.1190/GEO2015-0149.1

Briggs M, **Campbell S**, Nolan J, Ntarlagiannis D, Day-Lewis F, Lane J (2016) [Geophysical methods for characterizing the active layer and new permafrost formation](#). *Permafrost & Periglacial Processes*, 15 pp. DOI: 10.1002/ppp.1893

2014

Arcone S, **Campbell S**, Pfeffer T (2014) [GPR Profiles of Glacial Till, and its Transition to Bedrock: Interpretation of Water Content, Depth, and Signal Loss from Diffractions](#). *J. Environ. & Engineering Geophysics*, **19**(4), 207–228, DOI: 10.2113/JEEG19.4.207

2013

Campbell S, Balco G, Conway H, Todd C, Huybers K, Simmons C, Vermeulen M* (2013a) [Radar-detected englacial stratigraphy in the Pensacola Mountains, Antarctica; implications for recent changes in ice flow and accumulation](#). *Ann. Glaciol.*, **54**(63), 91-100.

Campbell S, Roy S*, Kreutz K, Arcone S, Koons P, Osterberg E (2013b) [Strain Rate Estimates for Crevasse formation at an Alpine Ice Divide: Mount Hunter, Alaska](#). *Ann. Glaciol.*, **54**(63), 200-208.

Spaulding N, Kurbatov A, Bender M, Higgins J, Mayewski P, Arcone S, **Campbell S**, Dunbar N, Introne D (2013) [Climate archives from 90 to 250 ka in horizontal and vertical ice cores from the Allan Hills Blue Ice Area, Antarctica](#). *Quaternary Research*, **80**, 562-574.

2012

Campbell S, Kreutz K, Wake C, Osterberg E, Arcone S, Introne D, Winski D, Volkening K* (2012a) [Melt regimes, internal stratigraphy, flow dynamics, and glaciochemistry of three glaciers in the Alaska Range](#). *J. Glaciol.*, **58**(207), 99-109. DOI: 10.3189/2012JoG10J238

Campbell S, Kreutz K, Wake C, Osterberg E, Arcone S, Winski D, Volkening K* (2012b) [Flow dynamics of an accumulation basin: A case study of the upper Kahiltna Glacier on Mount McKinley, Alaska](#). *J. Glaciol.*, **58**(207), 185-195. DOI: 10.3189/2012JoG10J233

Winski D, Kreutz K, Osterberg E, **Campbell S**, Wake C (2012) [High Frequency Observations of Melt Effects on Snowpack Stratigraphy, Kahiltna Glacier, Central Alaska Range](#). *Hydro. Processes*, **26**(17)

Peer Reviewed Manuscripts (In preparation or Submitted; student author*)

Campbell S, Roy S, Briggs M, Douglas T, Saari S. Ground-penetrating radar observations of permafrost distribution relative to terrain and vegetation at 12-Mile Lake, Alaska. *Permafrost & Periglacial Processes*, in major revision.

Campbell S, Roy S, Arcone S, Conway H, Kreutz K, McNeil C*, Schild K, Braddock S*, Slavin B*, Wilner J*, Smith B*, Koons P, Osterberg E, Hollander J*, Wolf J*. Surface-based ground-penetrating radar profiles of the Juneau Icefield, Alaska: Resolving annual accumulation in a temperate snowpack. *Journal of Glaciology*, in major revision.

William Kochtitzky W*, Winski D, McConnel E*, Kreutz K, **Campbell S**, Enderlin E, Copland L, Williamson S, Main B*, Dow C, Jiskoot H. The Impact of Climate on Surging at Donjek Glacier, Yukon, Canada. *Arctic, Antarctic, and Alpine Sciences*. Submitted.

Lee I*, Hawley R, Bernsen S*, **Campbell S**, Clemens-Sewell D*, Gerbi C, Hruby K* (2019) A novel tilt sensor for studying ice deformation: application to streaming ice on Jarvis Glacier, Alaska. *Journal of Glaciology*. Resubmitted after major revisions.

McNeil C, O'Neel S, Loso M, Pelto M, Sass L, Baker E, **Campbell S** (2019) Surface Mass Balance Reanalysis of Taku and Lemon Creek glaciers, Alaska: 1946–2018. *Journal of Glaciology*. Resubmitted after major revisions.

Campbell S, Lamie N, Schild K. Structure, dynamics, and stability the McMurdo Transition Zone and Hut Point Peninsula, Antarctica. *Journal of Glaciology*. In preparation.

Campbell S, Liljehdal A, Douglas T, Bernsen S*, Gatesman T*, Gerbi C. Water contributions from winter accumulation across Jarvis Glacier Watershed inferred from airborne and ground-penetrating radar between 2012-2017. *Journal of Geophysical Research*. In preparation.

Technical Reports and Extended Abstracts, and Other Publications (student author*)

Campbell S, Balco G, Ackert R, Goehring B. 2020. Improving West Antarctic Ice Sheet Reconstructions from Compiling Local GPR Observations. 18th International Conference on Ground-Penetrating Radar. June 14-19, 2020. (Invited Abstract).

Campbell S, Lamie N, Schild K. 2018. Structure and stability of the McMurdo Ice Shelf Transition Zone and Glaciated Hillside near Scott Base, Antarctica. ERDC-CRREL Technical Report, 35 pp.

Sinclair S, **Campbell S**, Arcone S, Affleck R. 2018. Using Ground-Penetrating Radar to delineate regions of massive ice at McMurdo Station, Antarctica. ERDC-CRREL Technical Report, 47 pp.

Arcone S, Breton D, **Campbell S**, Barrowes B, Lamie N. 2015. Surface Wave Propagation over a Rough Talus Slope at 160 MHz. IEEE Extended Abstract. Doi: 10.1109/APS.2015.7304670, 568-569.

Campbell S and Arcone S. 2014. Surficial and bedrock geology mapping with ground-penetrating radar in New England: general results and a case study from Mount Adams, New Hampshire. SEG Technical Program Expanded Abstract. pp 2145-2147.

Affleck R, **Campbell S**, Sinclair S*, Tischbein B. 2017. Subsurface assessment at McMurdo Station, Antarctica. ERDC-CRREL Technical Report, 135 pp.

Campbell S, Courville Z, Sinclair S*, Wilner J*. 2017. Geophysical Survey of McMurdo Ice Shelf to Determine Infrastructure Stability and for Future Planning. ERDC-CRREL Technical Report, 33 pp.

Campbell S, Haskins K, Winn B, Stanley J, Zabilansky L. 2014. Testing of oil skimmer equipment components for use in Arctic Environments. 2014 Report to Dept. of the Interior Bureau of Safety and Environmental Enforcement, 200 pp. <http://www.bsee.gov/Technology-and-Research/Oil-Spill-Response-Research/Projects/Project1026/>

Campbell S. 2011. Learning about climate change from ice cores. Publication for the National Park Service U.S. Department of the Interior, Denali National Park and Preserve.

Osterberg E, Kreutz K, Wake C, **Campbell S**. 2011. Drill site reconnaissance and snow chemistry survey in Denali National Park: 2010 report to Denali National Park and Preserve, Alaska.

Lawson D, Finnegan D, Klaar M, **Campbell S**. 2010. Climate monitoring in Glacier Bay National Park and Preserve: capturing climate change indicators. 2010 Report to Glacier Bay National Park and Preserve, Alaska.

Field Experience

Over 50 geophysical, glaciological, or geological exploration/research trips to Alaska, Greenland, Antarctica, Canada, South America, and the Continuous US

- **2009-2017**: Over 3000 km of ground collected radio-glaciology data and ~1000 km of surficial and bedrock geology geophysical data for research applications
- **2008, 2009, 2010, 2011, 2012 (2), 2013, 2014, 2016**: Denali National Park, Alaska (9 seasons)
- **2016, 2017, 2018**: Eclipse Icefield, Canada (3 seasons)
- **2017**: Mount Logan, Canada (1 season)
- **2012, 2015 (2), 2016 (2), 2017**: Jarvis Glacier, Alaska (6 seasons)
- **2010-2019**: Pensacola Mountains (2), McMurdo Ice Shelf (5), Ohio Range (2), Dry Valleys (1), and Allan Hills (1), Mt. Waesche (1), Mount Murphy (1), Thwaites Grounding Line (1), Antarctica (13 seasons)
- **2010, 2015**: Greenland (2 seasons)
- **2015**: Tierra Del Fuego, Argentina (1 season)
- **2011, 2013**: Mount Rainier, Washington (2 seasons)
- **2007, 2011, 2012, 2015, 2018, 2019**: Juneau Icefield, Alaska (6 seasons)
- **2009-2015**: 15+ permafrost and near-surface geology field research efforts in Alaska
- **2010**: Banff, Canada (1 season)
- **2008**: St. Elias Erosion and Tectonics Project Seismic Survey; Gulf of Alaska (1 season)

Other Project Involvement

2019: International Thwaites Glacier Collaboration (ITGC): I was directly solicited by NSF and NSF's Antarctic Support Contractor to support a Thwaites Project during the 2019-2020 field season. ITGC is the largest US-UK collaborative project ever completed in Antarctica and represents over 100 scientists on nine separate projects. I am now supporting one project as co-PI and a second project as a participant due to the direct NSF request based on my geophysical expertise.

2019: Iceland GPR Crevasse Detection Workshop: I was directly solicited by NSF to attend an international meeting in Iceland to represent the United States based on my expertise in field geophysical use of ground-penetrating radar for glaciological applications. I attended this meeting in the spring of 2019 with costs covered directly by NSF.

2010-Present: Geophysical investigation of lacustrine geology using GPR in Maine, New Hampshire, and Vermont. Co-PIs: **S Campbell**, S Arcone (M.S. Student: Ian Nesbitt)

2011-2015: Climate change impacts on US Army Alaska determined through geophysical field work and modeling (geophysical permafrost/surficial/bedrock geology mapping in Ft Wainwright/Yukon, Alaska)
PIs: T Douglas, FD Lewis, M Walvoord

2010-2014: Volume scattering and EM wave propagation in complex terrain, New Hampshire. PI: S Arcone.

2011-2013: Ice depth, ice volume, and snow accumulation radar survey. Mount Rainier National Park, WA. PI: C Todd; Co-PI: **S Campbell**

2012, 2015: Snow Accumulation and Ice Thickness Radar Survey, Juneau Icefield, AK. PI: **S Campbell**

2010-2012: Geophysical survey of the Pensacola Mountains, Antarctica. Co-PIs: G Balco, H Conway, C Todd

2009-2011: Geophysical 3D permafrost and geology mapping for groundwater flow modeling at a contaminated site. Fairbanks, Alaska. PI: B Astley

2010: Geophysical survey of the Wapta Icefield/Peyto Glacier, Canada. PI: R Hawley

2010: Permafrost and hydrological geophysical survey; Thule, Greenland. PI: K Bjella

2010: Search and recovery geophysical survey of Coast Guard Grumman WWII airplane in Greenland. PI: US Coast Guard

2010: EM and acoustic wave propagation in urban environments. PI: D Albert

2010: Climate monitoring project of Glacier Bay National Park and Preserve, AK. PI: D Lawson

2009-2010: Unexploded ordinance geophysical mapping, Fairbanks, Alaska. PI: B Astley

2009-2010: Permafrost tunnel geophysical site selection. Fox, Alaska. PI: M Sturm

2008: St. Elias Erosion and Tectonics project. Gulf of Alaska. Co-PIs: P Koons, S Gulick

Academic Teaching Experience

- University of Maine School of Earth & Climate Sciences credit courses:
 - 2019: Director/Assistant Professor, Juneau Icefield Research Program (ERS 499 Sec 870)
 - 31 students
 - 25 students at UMaine for 6 credits
 - 5 students at UAlaska (Alaska students per agreement with UAlaska and the non-profit which owns JIRP facilities, the Foundation for Glacier and Environmental Research)
 - First year with UMaine
 - 82 people on the icefield including science teams
 - **2019:** Assistant Professor for *Introduction to Glaciology* (ERS 444/544 – 4 credits)

- 4 undergraduate students
 - 3 graduate students
 - **2016:** Assistant Professor for *Geology & Geophysics Field Camp* (ERS 499 – 6 credits)
 - **2010:** Teaching Assistant for *Tectonics* (ERS 451 – 3 credits)
 - **2008-2009:** Teaching Assistant for *Introduction to Geology* (ERS 101 – 4 credits)
 - **2008:** Teaching Assistant for *Introduction to Geophysics* (ERS 317 – 3 credits)
- University of Maine Outdoor Education/Kinesiology Department courses offered for college credit:
 - **2004-2006:** Lead Instructor for *Wilderness First Responder* (KPE 209 – 3 credits)
 - **2002-2004:** Lead Instructor for *Introduction to Rock Climbing* (KPE 284 – 1 credit)
 - **2002-2004:** Lead Instructor for *Artificial Climbing Wall Management* (KPE 285 – 1 credit)
 - **2002-2004:** Lead Instructor for *Top Rope Rock Climbing* (KPE 288 – 1 credit)
 - Dartmouth College Outdoor Education program course offered for college credit:
 - **2010:** Instructor for *Wilderness First Responder*

Other Teaching and Mentoring Experience

2019: GPR Theory and Application Workshop: Instructor at the North East Geological Society of America Workshop (12 students) March 16, 2019

2019: Structure from Motion for Geological Applications Workshop: Instructor at the North East Geological Society of America Workshop (14 students) March 15, 2019

2015: GPR Theory and Application Workshop: Co-instructor at the North East Geological Society of America Workshop (18 students)

2014: Permafrost Geophysics Course: Co-Instructor, U.S. Geological Survey and Department of Defense Sponsored Training Program (17 students) <http://water.usgs.gov/ogw/bgas/courses/GW1829/>

2004-Present: SOLO Wilderness Medicine: Lead Instructor; Instructed >1500 hours of wilderness emergency medicine courses (Wilderness First Aid, Wilderness First Responder, and Wilderness EMT) for certifications through SOLO Wilderness Medicine including courses taught at the following institutions:

- | | | |
|-----------------------------|------------------------|---------------------|
| • Maine EMS | • Trinity College | • Skidmore College |
| • University of Maine | • University of Alaska | • Dartmouth College |
| • University of New England | • Colby College | |

2013: Oak Ridge National Laboratory (ORISE): Student mentor (1 student)

2012-2013: Dartmouth College Women in Science Program (WISP): Student mentor (2 students)

2011-2015: Juneau Icefield Research Program: Geophysics Field Instructor; Alaska (82 students)

2007-2008: University of Maine Ambulance Service: Assistant Chief of Service (60+ students)

2003-2008: Atlantic Climbing School: Rock Climbing Guide; Bar Harbor, ME

2003-2008: CLC Ambulance Service: Emergency rescue service EMT-Intermediate; Damariscotta, ME

2002-2006: University of Maine, Maine Bound; Outdoor Program Supervisor (40+ student staff)

Graduate Students

- Scott Braddock (PhD Student, University of Maine; Co-advisor - Current)
- Steve Bernsen (PhD Student, University of Maine; Co-advisor - Current)
- Ian Nesbitt (MS Student, University of Maine; Co-advisor - Current)
- Annie Boucher (MS Student, University of Maine; Committee Member - Current)
- Ann Hill ((MS Student, University of Maine; Committee Member – Current)
- Colby Rand (Undergrad Senior Thesis, University of Maine; Advisor - Current)
- Renee Clavette (Undergraduate Senior Thesis, University of Maine; Committee Member – Current)
- Kate Hruby (MS Student, University of Maine; Committee Member - Graduated)
- Will Kochtitzky (MS Student, University of Maine; Committee Member - Graduated)
- Clara Deck (MS Student, University of Maine; Committee Member – Graduated)
- Ben Partan (MS Student, University of Maine; Committee Member - Graduated)

Other Student or Professional Mentoring (Field Research*)

- Josh Plourde (University of Maine)*
- Lyndsey Monroe (University of Maine)*
- Curtis Marston (University of Maine)*
- Scott Braddock (University of Maine)*
- Kevin Volkening (Montana State University)*
- Loren Rausch (Montana State University)*
- Hazel Shapiro (Dartmouth)*
- Theo Fehsenfeld (Bates College)*
- Lindsey Slavin (Wake Forest University)*
- Blaire Slavin (The Benjamin School)*
- Joel Wilner (Middlebury College)*
- Joseph Wolf (Minnesota State University)*
- Tadhg Moore (Univ. College Cork, Ireland)*
- Justin Leavitt (University of Maine)*
- Dorota Medrzycka (University of Ottawa)*
- Ian Lee (Dartmouth)*
- Thomas Beutler (University of Maine)
- Jeremy McComas (New Mexico Tech)*
- Jill Horing (Dartmouth)
- Nancy Wu (Dartmouth)
- Jon Thompson (Dartmouth)*
- Alex Lee (Dartmouth College)*
- Dave Silverstone (University of Alaska)*
- Chris McNeil (University of Alaska)*
- Harry Sandler (University of Vermont)*
- Annie Boucher (Carleton College)*
- Adam Toolanen (Lund University)*
- Abi Bradford (University of Maine)*
- Jacob Hollander (University of Georgia)*
- Betsy Smith (Sonoma State University)*
- Kimberley Miner (University of Maine)*
- Patrick Saylor (Dartmouth College)*
- Tiffany Gatesman (University of Alaska)*
- David Clemens-Sewell (Dartmouth)*
- Brittany Main (University of Ottawa)*

Geophysical Instruments and Geological Field Methods

- GSSI SIR-3000, SIR-4000, SIR-20, and SIR-30 GPR Control Units (15-2600 MHz antennas)
- Blue Systems Ice Radar (4-20 MHz dipole antennas)
- GSSI EM-400 Profiler
- S&S. Pulse Ekko Pro and Noggin GPR (50-800 MHz antennas)
- Geometrics Ohm Mapper Resistivity Meter
- Advanced Geosciences Super Sting R8 IP Resistivity Meter
- ABEM Resistivity Terrameter and ABEM WalkTEM Time Domain EM System
- GF Instruments CMD-4 Electromagnetic Conductivity Meter
- Geometrics 856 Proton Precession Magnetometer and Geonics EM31-MK2 Magnetometer
- Worden and Lacoste-Romberg Gravimeters
- Bison 9024 24 Channel Seismograph
- GPS rapid static, RTK surveys, and various GPS hardware

- Geologic, gravity, magnetic, air photo/satellite image geologic mapping and interpretation, sediment analysis, soil mapping, sediment/ice coring, hydro-geological field and modeling studies, and topographic, boundary, construction, land/water surveys

Technical Software

- Res2DInv and Res3DInv
- COMSOL Multiphysics (Intermediate user)
- GSSI Radan and S&S Ekko View Deluxe
- Matlab and Python (Intermediate user)
- ESRI ArcGIS
- ENVI
- Trimble Business Center/Geomatics
- Golden Software Surfer, Voxler, Grapher

Conference Oral Presentations (Student author*)

Conference Session Co-Chair:

2015: American Geophysical Union; Applications of Near Surface Geophysics in Periglacial Regions

2014: American Geophysical Union; Applications of Near Surface Geophysics in Cold Regions

2013: North East GSA; Ground-Penetrating Radar Investigations for Geologic Formations

Campbell S (2019) Hew Horizons for the Longest Operating Polar Research and Education Program in North America. Harold W. Borns, Jr. Symposium, 2 May 2019. (Invited)

Nesbitt IM*, Smith S, Koffman B, **Campbell S**, Arcone A (2019) A decision-making framework for sedimentation analyses in dammed river corridor impoundments. Northeast Geological Society of America Meeting, March 2019.

Kreutz KJ, Winski D, Osterberg EC, Wake, CP, **Campbell S**, Introne DS, Ferris D (2019) Moisture transport dynamics in the north pacific over the last millennium and impacts on the Mount Hunter (Alaska) ice core isotope record. Northeast Geological Society of America Meeting, March 2019.

Middleton JL, Mason Z*, Mukhopadhyay S, Ackert R, Putnam A, **Campbell S** (2018) C22B-05 Cosmogenic nuclides suggest long-term Pleistocene exposure of subglacial bedrock at the Ohio Range in the West Antarctic Ice Sheet. American Geophysical Union Conference, December 11, 2018.

Kaluziński L*, Koons PO, Enderlin E, Arcone S, **Campbell S**, Courville Z, Deck C* (2018) C43A-03 Evolution of the McMurdo Shear Zone, Antarctica: Determining Critical Kinematic Threshold Values for Crevasse Initiation and Predicting Long-term Changes to Shear Zone Stability. American Geophysical Union Conference, December 13, 2018.

Gerbi C, Mills S*, Bernsen S*, Lee I*, Clemens-Sewell D*, Hruby K*, **Campbell S**, Hawley R, Clavette R*, Bellefontaine J*, Kreutz K (2018) C44A-07 Crystallographic Orientations in the Lateral Margin of Jarvis Glacier, Eastern Alaska Range. American Geophysical Union Conference, December 13, 2018.

Campbell S, Boucher A, Jennings C. 72 Year Legacy of Research & Training in Polar Earth Systems Science: The Juneau Icefield Research Program. Geological Society of America Meeting; Indianapolis, Indiana. November 11, 2018.

Campbell S, Kreutz K, Arcone S, Braddock S*, Osterberg E, Koons P. Determining winter mass balance and the previous year snowline position on the Juneau Icefield, Alaska, using ground-penetrating radar. Northeast Geological Society of America Meeting; Bretton Woods, NH. March, 2015.

Campbell S. Influences of terrain and vegetation on permafrost distribution: case studies from Tanana Flats and 12-Mile Lake, Alaska. Northeast Geological Society of America Meeting; Bretton Woods, NH. March, 2015.

Campbell S, Williams K, Marston L*, Kreutz K, Wake C, Osterberg E. Linking ice core climate research to the K-12 and broader community in Denali National Park, Alaska. AGU Conference; San Francisco, CA. December, 2013.

Campbell S and Arcone S. Applications of Ground-Penetrating Radar Profiles to Surficial and Bedrock Geology Mapping in New Hampshire. Geological Society of America Meeting; Denver, CO. October, 2013.

Campbell S, McNeil C*, Arcone S, Kreutz K, Koons P, Hamilton G, Conway H. Determining winter mass balance and the previous year snowline position of the Juneau Icefield, Alaska, using high-frequency ground-penetrating radar. International Glaciological Society Radioglaciology Conference; Lawrence, KS, September, 2013.

Campbell S and Arcone S. Applications of Ground-Penetrating Radar Profiles to Surficial and Bedrock Geology Mapping in New Hampshire. Northeast Geological Society of America Meeting; Bretton Woods, NH. March, 2013.

Campbell S, Arcone S, Kreutz K, Hamilton G, Conway H, McNeil C*, Braddock S*. Preliminary winter accumulation rates for mass balance estimates of the Juneau Icefield, Alaska using 400 MHz ground-penetrating radar. Invited speaker, AGU-SEG Cryosphere Workshop; Boise, ID. January, 2013.

Campbell S, Saari S, Douglas T, Day-Lewis F, Walvoord M, Nolan J*, Briggs M. Shallow Geology and Permafrost Characterization using Ground-Penetrating Radar to infer Hydrological Controls and Landscape Evolution of Interior Alaska. AGU Conference; San Francisco, CA. December, 2012.

Arcone S and **Campbell S.** Multi-Bandwidth GPR Profiles of Granite in New Hampshire: Attributes of Fracture Horizons and Wavelets. AGU Conference; San Francisco, CA. December, 2012.

Campbell S, Kreutz K, Arcone S, Osterberg E. Strain Rate Estimates on Mount Hunter, Alaska: What Causes Crevassing at an Ice Divide? Arctic Workshop; Winter Park, CO. March, 2012.

Campbell S. GPR investigation of glacier structure and dynamics near exposure-dating sites in the Pensacola Mountains, Antarctica. Workshop on geological constraints for Antarctic ice sheet models; Lamont-Doherty Earth Observatory Workshop, NY. April, 2011.

Conference Poster Abstracts (*Student Author)

Campbell S, Barnett C*, Borreggine M*, Goss G*, Henzmann I*, Miller R*, Kaluziński L* (2018) C51F-1123 Ground-Penetrating Radar Ice Thickness Survey of Matthes, Lewellyn, and Tulsequah Glaciers on the Juneau Icefield, Alaska and Canada. American Geophysical Union Conference, December 14, 2018.

Nesbitt I*, **Campbell S,** Arcone S, Smith S, Koffman B (2018) NS41B-0830 Sedimentary architecture and accumulation rates of multiple lakes in New England, USA. American Geophysical Union Conference, December 2018.

Bernsen S*, Gerbi C, **Campbell S**, Vel S, Christianson K (2018) NS43B-0839 A Numerical Toolbox to Guide Radar and Seismic Field Campaign Planning. American Geophysical Union Conference, December 2018.

McConnell E*, Kreutz K, **Campbell S**, Winski D, Copland L, Zdanowicz C, Kochtitzky W*, Introne D, Nolan A* (2018) C41C-1779 Calibrating Ice Core, Weather Station, and NASA MODIS Ice-Surface Temperature Records to Analyze Atmospheric Variability in the St. Elias, Yukon, Canada. American Geophysical Union Conference, December 13, 2018.

Kreutz K, Winski D, Osterberg E, Introne D, **Campbell S**, Wake C, Ferris D (2018) PP21F-1474 The possible influence of shifting North Pacific moisture source on the Mt. Hunter (Alaska) ice core deuterium excess record over the past millennium. American Geophysical Union Conference, December 2018.

Hruby K*, Gerbi C, Koons PO, Martin C, **Campbell S**, Hawley R (2018) C31C-1543 Determining the Influence of Lateral Margin Mechanical Properties on Glacial Flow. American Geophysical Union Conference, December 2018.

Lee I, Hawley R, Bernsen S, Gerbi C, Clemens-Sewell D, **Campbell S**, Waszkiewicz, Kreutz K (2018) C31C-1548: Collection and Analysis of Shear Strain Data of Polythermal Ice from Jarvis Glacier, Alaska. American Geophysical Union Conference, December 2018.

Campbell S, Liljedahl A, Douglas T, Bernsen S*, Gatesman T, Gerbi C. Contributions to Jarvis Creek Watershed, Alaska, from winter snowpack and glacier melt inferred through airborne and ground-penetrating radar. American Geophysical Union Meeting, San Francisco, CA. December, 2017.

Campbell S, Hollander J*, Slavin B*, Wolf J*, Wilner J*, Smith B*, Moore T*. Spatial and temporal variability of winter accumulation on Taku Glacier, Southeast Alaska, between 2012 and 2015. American Geophysical Union Meeting, San Francisco, CA. December, 2015.

Wilner J*, Smith B*, Moore T*, Slavin B*, Hollander J*, Wolf J*, **Campbell S**. Estimating temporal redistribution of surface melt water into upper stratigraphy of the Juneau Icefield, Alaska. American Geophysical Union Meeting, San Francisco, CA. December, 2015.

Gaedeke A, Liljedahl A, Gatesman T*, **Campbell S**, Hock R, O'Neel S. Long-term linkages between glaciers, permafrost, and hydrology at two glacierized watersheds in Alaska. American Geophysical Union Meeting, San Francisco, CA. December, 2015.

Osterberg E, Wake C, Kreutz K, Winski D, Ferris D, Introne D, **Campbell S**, Birkel S. Denali ice core record of North Pacific hydroclimate, temperature and atmospheric circulation over the past millennium. American Geophysical Union Meeting, San Francisco, CA. December, 2015.

Winski D, Osterberg E, Ferris D, Kreutz K, Wake C, **Campbell S**. Denali Ice Core record of Alaska Summertime Temperature over the past Millennium. American Geophysical Union Meeting, San Francisco, CA. December, 2015.

Winski D, Osterberg E, Ferris D, Kreutz K, Wake C, **Campbell S**. A Record of Rising 20th Century Snow Accumulation from the Denali Ice Core. American Geophysical Union Meeting, San Francisco, CA. December, 2015.

Boucher A*, Koons P, Roy S, Birkel S, Kaluziński L, **Campbell S**. Implications of fault damaged bedrock to tectonic and landscape evolution in Coastal Alaska. American Geophysical Union Meeting, San Francisco, CA. December, 2015.

Campbell S, Balco G, Conway H, Huybers K. A GPR approach to searching for pre-WAIS collapse glacier ice. West Antarctic Ice Sheet Annual Science Workshop, Loveland, CO. September, 2015.

Kreutz K, **Campbell S**, Osterberg E, Wake C, Winski D, Roy S, Koons P. Geophysical approaches to improve Holocene ice core based hydro-climate reconstructions in the Northeast Pacific. Northeast Geological Society of America Meeting; Bretton Woods, NH. March, 2015.

Winski D, Osterberg E, Kreutz K, Baum M, Wake C, **Campbell S**. Abrupt summer warming in the Alaska Range from melt layers in the Mount Hunter Ice Core. Northeast Geological Society of America Meeting; Bretton Woods, NH. March, 2015.

Campbell S, Kreutz K, Arcone S. Ground-penetrating radar vertical resolution, signal attenuation, and penetration in temperate and polar glaciers: case studies from North America and Antarctica. AGU Conference; San Francisco, CA. December, 2013.

Wu N*, **Campbell S**, Douglas T. Developing an Ice Volume Estimate of the Jarvis Glacier, Alaska, using Ground-Penetrating Radar and High Resolution Satellite Imagery. AGU Conference; San Francisco, CA. December, 2013.

Douglas T, Bjella K, **Campbell S**. What's down below? Current and potential future applications of geophysical techniques to identify subsurface permafrost conditions. AGU Conference; San Francisco, CA. December, 2013.

Burzynski A*, Osterberg E, Kreutz K, Wake C, **Campbell S**, Volkening K*, Winski D. Relationships between atmospheric aerosols and snow chemistry at Denali, Alaska. AGU Conference; San Francisco, CA. December, 2013.

Horing J*, **Campbell S**, Douglas T, Saari S. Thickness and Extent of Permafrost Determined by Resistivity Profiles Compared to Vegetation Type in Tanana Flats, Alaska. Geological Society of America Conference; Denver, CO. October, 2013.

Braddock S*, Sandler H*, Boucher A*, McNeil C*, **Campbell S**, Kreutz K. Accumulation Rate Variability and Winter Mass Balance Estimates using High Frequency Ground-Penetrating Radar and Snow Pit Stratigraphy on the Juneau Icefield, Alaska. AGU Conference; San Francisco, CA. December, 2012.

Shapiro H*, Osterberg H, Kreutz K, Wake C, **Campbell S**. Using temperature and precipitation at an alpine weather station (Denali, AK) to represent regional climate patterns. AGU Conference; San Francisco, CA. December, 2012.

Kreutz N, Plourde J*, **Campbell S**, Kreutz K, Wanamaker A. Developing K-5 and public outreach products for Alaskan glaciology and sea level using the iPad App platform. Arctic Workshop; Winter Park, CO. March, 2012.

Astley B, Douglas T, **Campbell S**, Snyder C, Goggin E, Saari S. Response of permafrost to anthropogenic land surface disturbance near Fairbanks, Alaska. AGU Conference; San Francisco, CA. December, 2011.

Osterberg E, Thompson J*, Landis J*, Albert M, **Campbell S**, Hawley R, Virginia R. Tracking radioactive fallout from the Fukushima Dai-ichi Accident in Arctic Snow. AGU Conference; San Francisco, CA. December, 2011.

Astley B, Snyder C, **Campbell S**, Arcone S, Smith B. An integrated geophysical program to map permafrost extent, Fort Wainwright, Alaska. Symposium on the Application of Geophysics to Engineering and Environmental Problems; Charleston, SC. April, 2011.

Campbell S, Kreutz K, Wake C, Osterberg E, Arcone S, Winski D, Volkening K*. Application of Ground Penetrating Radar to the selection of an ice core drill site on the Kahiltna Glacier of Mount McKinley, Alaska. Symposium on the Application of Geophysics to Engineering and Environmental Problems; Charleston, SC. April, 2011.

Academic Invited Talks

Tulane University, New Orleans, LA (2017)

Indiana University-Purdue University Indianapolis; Indianapolis, MN (2017)

University of Washington; Seattle WA (2016 and 2017)

Middlebury College; Middlebury, VT (2015)

University of New Hampshire; Durham, NH (2013)

Colby Sawyer College; New London, NH (2013)

University of Maine at Farmington; Farmington, ME (2010)

Community Outreach

Campbell S. Global and New England Climate Change 101. Invited Speaker, Protect Our Winters, Freeport, Maine, September, 2019.

Campbell S. American Alpine Club “Climb the Hill” Invited Scientist to present to Congress (declined due to multiple conflicts) September, 2019.

Campbell S and K Williams. Linking Maine to Alaska: K-12 education outreach about climate change research on the highest point in North America. Invited Speaker, Maine Rotary Club. Damariscotta, Maine, July, 2014.

Campbell S and K Williams. Linking Maine to Alaska: K-12 education outreach about climate change research on the highest point in North America. Invited Speaker at Skidompha Library “Chats with Champions” Speaker Series. Damariscotta, Maine. January, 2014.
<https://www.youtube.com/watch?v=Owc5sxy1tDs>

Campbell S. Operating safe and successful field research campaigns in Polar Regions. Invited speaker, webinar series, Association of early career polar scientists. November, 2012. <http://vimeo.com/53487539>

Campbell S. Radio Waves Over Rough Terrain: "Can You Hear Me Now?" Invited speaker, Mount Washington Observatory, Science in the Mountains Series; North Conway, NH. August, 2012.

Campbell S, K Kreutz, E Osterberg, C Wake. Glacier Ice Volume and Ice Core Research in Denali National Park and Preserve. Invited speaker, Denali National Park and Preserve Park Headquarters; Alaska. May, 2012.

Campbell S. Changing Climate and Changing Mountains. Invited speaker, American Alpine Club and Mount Washington Observatory; North Conway, NH. March, 2012.

Campbell S. GPR and GPS applications to modeling flow dynamics of the Kahiltna Glacier, Mount McKinley, Alaska; Invited speaker, University of Maine at Farmington; Farmington, ME. April, 2010.

Invited Upcoming Talks

Boucher A and **Campbell S** (2019) American Geophysical Union Conference. *Supporting Diverse Student Participation in the Juneau Icefield Research Program*. Scheduled for December, 2019. (Note: Annie Boucher will deliver this presentation because I will be in Antarctica completing field research).

Campbell S (2020) *Global and New England Climate Change 101 for the Ski Industry: What do we expect and How can you Prepare?* New England Summit, Sunday River, Maine. Scheduled for September 2020.

Campbell S (2020) *Title, TBD*. 18th International Conference on Ground Penetrating Radar. Scheduled for June 2020.

Campbell S (2020) *The Uncertainty of Thwaites Glacier and West Antarctica*. University of Maine Physics Colloquium. Scheduled for 27 March, 2020.

K-12 Outreach

2009-2017: Nobleboro Central School; Nobleboro, ME (9 visits)

2015: Great Salt Bay Middle School; Damariscotta, ME

2014: Hanover Middle School; Hanover, NH

2013: Bristol Consolidated School and South Bristol School; Bristol, ME

2013: Mount View High School and Middle School; Thorndike, ME

2012: Greely High School; ME

Community Involvement

2018-Present: Intergovernmental Panel on Climate Change, Expert Reviewer

Special Report on the Ocean and Cryosphere, Chapter 2: High Mountain Areas (Invited- ultimately had to decline due to field season obligations)

2018-Present: American Alpine Club, Climate Policy Task Force (Invited)

2018-Present: IRIS and UNAVCO Polar Networks Science Committee (Invited)

2018-Present: NASA Proposal Reviewer

2017-Present: NSF Proposal Reviewer

2017-Present: UNAVCO Academic Committee Member – University of Maine Representative (Invited)

2015: PolarTREC Application Selection Committee (Invited)

2015: “School of Ice” IDPO/NICL/INSTAAR Sponsored Workshop Presentation (Invited)

2015: AGU Sponsored Congressional Science-Policy Washington D.C. Visit (Invited)

2014-Present: Academic Council Member, Juneau Icefield Research Program (Invited)

2010-Present: Peer Journal Reviewer: *Science*, *J. Glaciology*; *A. Glaciology*; *Arctic, Antarctic, and Alpine Res.*; *Hydro. Processes*; *Remote Sensing*; *Geografiska Annaler: Series A, Physical Geography*; *Sensors*; *Geophysics*; *Journal of Geophysical Research*; *Cryosphere*

2010-2016: AGU Near-surface Geophysics Group Executive Committee Representative

2014-2016: CRREL HAZMAT and Ammonia Response Team

2012-2014: PolarTREC Teacher-Research Outreach program

2012-2013: Chair, Research Advisory Committee, Juneau Icefield Research Program (Invited)

2002-2010: University Volunteer Ambulance Corps (UVAC); University of Maine
2006-2010: EMS Instructor, Maine Emergency Medical Services and UVAC
2007-2008: University of Maine Geological Society, President
2007-2008: University of Maine Student Advisory Committee

Paper and Proposal Reviews

- Science Advances – Manuscript Review (11/2019)
- Journal of Glaciology – Manuscript Review (7/2019)
- PNAS – Manuscript Review (5/2019)
- Journal of Glaciology – Manuscript Review (12/2018)
- IPCC - Special Report on the Ocean and Cryosphere in a Changing Climate, Chapter 2: High Mountain Areas (11/1/2018-12/30/2018) (NOTE: I initially accepted as a reviewer but unfortunately needed to withdraw due to unforeseen field season schedule conflicts with review due date)
- Journal of Glaciology – Manuscript Review (10/2018)
- Geophysical Research Letters – Manuscript Review (9/2018)
- NSF Major Instrumentation Proposal External Review (9/2018)
- NSF Major Instrumentation Proposal Panel (8/2018)
- NASA Early Career Proposal Review Panel (2/1/2018-2/2/2018)

Special Trainings and Certifications

2011-2017: Approved Field Mountaineer, US Antarctic Program
2016: Notary Public, State of Maine (Exp. 2020)
2014: 40 Hour HAZWOPER Certification, U.S. Occupational Safety and Health Administration
2014: Contracting Officer Representative Course, U.S. Dept. of Defense
2014: Hazardous Waste Coordinator Course, New Hampshire Dept. of Environmental Services
2014: AMGA Ice Instructor Course, New Hampshire
2011: Secret Security Clearance. U.S. Dept. of Defense (valid through 2020)
2007: Juneau Ice Field Research Program, Alaska
2005: EMT-Intermediate Course, Maine (Expired)
2004: NOLS Mountain Instructor Course, Wyoming
2003: Alpine Guide Course, Colorado
2003: AMGA Rock Instructor Course, Colorado
2003: NREMT, New Hampshire (Expired)
2003: Wilderness EMT-Basic, New Hampshire (Expired)
2002: SOLO Wilderness First Responder, New Hampshire
2002: AAIRE Avalanche Level I and II Certification, New Hampshire

Memberships

American Geophysical Union (AGU), Geological Society of America (GSA), Society of Exploration Geophysicists (SEG), International Glaciological Society (IGS), Association of Polar Early Career Scientists (APECS), National Geoscience Teachers Association (NAGT), American Mountain Guides Association (AMGA), American Alpine Club (AAC)

Prior Academic Awards

2016-2018: University of Washington, Future of Ice Postdoctoral Program Award (\$54,756)

2014: University of Maine Climate Change Institute Service Award
2012: Explorers Club Research Grant: S Campbell (PI) (\$2,500)
2012 – 2013: NSF/PolarTREC Grant: S Campbell (PI) K Williams (Co-PI) (~\$28,500)
2008 – 2012: Churchill Research Grant: S Campbell (PI and co-PI, Multiple proposals) (\$14,433)
2011: Denali National Park Science & Learning Center Research Fellowship: S Campbell (PI) (\$4,500)
2011: American Alpine Club Nikwax Alpine Bellwether Research Grant: S Campbell (PI) (\$1,500)
2011 – 2012: American Alpine Club Research Grant: S Campbell (PI) (\$2,000)
2011: Geometrics Geophysics Scholarship (\$1,000)
2010-2011: University of Maine GSG Grant: S Campbell (PI) (\$1,500)
2008: Trefethen Field Research Scholarship (\$1,000)
2008: Nancy Morse Dysart Travel Scholarship (\$250)
2008: Presidential Achievement Award and Deans List
2007: NASA Space Grant Scholarship (\$2,000)

Publicity

2020: PBS Newshour Report by Miles O'Brien: ["Visiting the most vulnerable place on earth: the doomsday glacier"](#)

2019: American Alpine Journal: Article written by D. Higgins titled ["Ice Pilgrimage: Over 70 years of studying glaciers on the Juneau Icefield"](#) showcasing the Juneau Icefield Research Program

2019: American Alpine Club, Membership Guide: Article written by S Campbell titled ["A Climate Scientist Reflects"](#)

2019: Scientific American: ["Warming Arctic on Thin Ice"](#)

2018: Sierra Magazine: ["On the Juneau Icefield, Women Reimagine Who Does Science"](#)

2018: Scientific American: ["Studying Climate Change in One of the Grandest Classrooms in the World"](#)

2018: Capital City Weekly: ["In Focus – Juneau Icefield Research Program"](#)

2018: ["Adventure Dispatch – Juneau Icefield Research Program"](#)

2016: National Ice Core Laboratory, News Article: ["Ice Flow and Ice Cores in the St. Elias Mountains"](#)

2015: [APECS, Invited Webinar: "Basics of Field Safety"](#)

2014: PBS News Hour: ["Just how much ice is left underneath Alaska's glaciers?"](#)

2014: NSF Science Nation: ["Alaska mountain glaciers retreating due to climate change"](#)

2013: PolarTREC: ["Reconstructing the past climate of Central Alaska"](#)

2013: APECS, Invited Webinar: ["Operating Safe & Successful Polar Field Research Campaigns"](#)