Erin Christine Pettit

October 16, 2014

University of Alaska Fairbanks
Department of Geosciences
Box 755780, 900 Yukon Dr.
Fairbanks, Alaska 99775
http://ice.gi.alaska.edu

PO Box 85263
Fairbanks, Alaska 99708
(907) 474-5389 Office
(206) 619-1752 Cell
pettit@gi.alaska.edu

Education

2003 **Ph.D. University of Washington, Geophysics**

Dissertation: *Unique Dynamic Behaviors of Ice Divides: Siple Dome and the Rheological Properties of Ice.* Advisor: Edwin D. Waddington. Committee: Howard Conway, Charles F. Raymond, John Stone

1994 **Sc.B. Brown University, Mechanical Engineering, with Honors**

Honors Thesis: *Effects of Excited State Emission of Erbium Doped Fiber Pumped at 820 nm.* Advisor: Theodore F. Morse

Professional Appointments

2010-present **Assistant Professor of Geophysics, Glaciology**
University of Alaska Fairbanks

2008-2010 **Research Assistant Professor of Geophysics**
University of Alaska Fairbanks

2006-2008 **Research Physical Scientist**
Cold Regions Research and Engineering Lab

2005-2008 **Research Assistant Professor of Geology**
Portland State Univ.

2003-2006 **Post-Doctoral Research Fellow**
University of Washington

Honors and Awards

2013	*National Geographic* Emerging Explorer
2013	Associate Editor, *Journal of Geophysical Research, Earth Surface*
2012	UAF College of Natural Science and Mathematics Outstanding Teaching Award
2011	Representative for U.S. Department of State Brazil-US Women in Science Program
2011	UAF College of Natural Science and Mathematics Faculty Merit Award for Research Excellence and Coordination of the Girls on Ice Program.
2007	*WINGS WorldQuest* Earth Award
1998-2003	National Science Foundation Graduate Research Fellowship
2000	David A. Johnston Memorial Scholarship Award
1997-1998	University of Washington Graduate School Merit Award
1997	Fannie and John Hertz Foundation Research Fellowship Grant

Invited Talks and Panel Discussions

2014	*Invited to give 2015 Keynote Presentation* Student Climate and Conservation Congress, Green Schools Alliance
2014	Geological Society of America Annual Meeting
2014	University of Washington
2013	National Geographic Explorers Symposium
2013	West Antarctic Ice Sheet Initiative Workshop
2013	University of Houston
2012	UNAVCO Science Workshop
2012	International Glaciological Society Symposium (panel discussion for Association of Polar Early Career Scientists)
2011	United State Embassy, Brazil (panel discussion on mentoring)
2011	European Geoscience Union General Assembly
2011	Laboratorie de Glaciologie et Gèophysique de l'Environnement, Grenoble, France
2009	Montana State University
2008	Lamont-Doherty Earth Observatory, Columbia University
2008	Department of Geology, University of Chicago
2008	University of Washington, Tacoma
2008	UNAVCO Science Workshop
2007	United State Geological Survey Headquarters
2006	The Ohio State University
2006	Colorado School of Mines

Research Experience

2010–present	**Assistant Professor of Geophysics**, Univ. of Alaska Fairbanks Department of Geosciences Research Focus: Ice dynamics, paleoclimate and paleo-ice sheet studies, ice-ocean interactions, mountain-glacier change, and glacial contributions to sea level rise.
2008–2009	**Research Assistant Professor**, Univ. of Alaska Fairbanks College of Natural Science and Mathematics - Division of Research
2005–2008	**Research Assistant Professor**, Portland State University Department of Geology
2006–2008	**Research Physical Scientist**, Cold Regions Res. and Eng. Lab. Led reinvigoration of the Alaskan Glacier Monitoring Program in close collaboration with the U.S. Geological Survey.
2003–2006	**Post-Doctoral Research Associate**, University of Washington Department of Earth and Space Sciences, Supervisor: Bernard Hallet Research Focus: Dynamics of cold-based polar valley glaciers.
1997–2003	**Graduate Research Assistant**, University of Washington Department of Earth and Space Sciences Research Focus: Ice dynamics in central West Antarctica related to paleoclimate and paleo-ice sheet research
1994–1997	**Mechanical and Systems Engineer**, AeroVironment Developed hybrid vehicle power management system at this highly respected engineering research and development firm specializing in alternative energy transportation.
1992-1994	**Undergraduate Research Assistant**, Brown University Laboratory for Lightwave Technology Research Focus: Use of erbium-doped fiber optic cables for in-line signal amplification.
1993	**Summer Research Program**, AT&T Bell Labs

Teaching Experience

2010–present	**Assistant Professor of Geophysics**, University of Alaska
	Mentoring in the Sciences (graduate, Fall 2014)
	Foundations of Geophysics (graduate and upper undergraduate, Fall 2012, 2013, 2014)
	Ice in the Climate System (upper undergraduate, Spring 2012, 2014)
	Geodynamics (graduate, Fall 2010)
	Undergraduate Field Glaciology Workshop, Spring 2013
	Glaciers, Earthquakes, and Volcanoes (introductory undergraduate, Spring 2010)
	Glaciology Reading Seminar, Spring 2010, 2011, 2012, 2013 (graduate)
	International Glaciology Summer School, Summer 2010 (graduate)
	Girls on Ice: Scientific Research and Wilderness Travel for Young Women, Summer 2010, 2011, 2012, 2013, 2014 (pre-college)
2008–2010	**Research Assistant Professor**, University of Alaska
	Geodynamics, Fall 2008
	Glaciology Reading Seminar, Spring 2009
	Girls on Ice Summer 2008, 2009
2006	**Adjunct Assistant Professor**, Portland State University
	Global Environmental Change (introductory undergraduate)
2005	**Post-Doctoral Faculty Instructor**, University of Washington
	Mount Rainier Field Course: Geological, Ecological, Cultural, and Wilderness Perspectives (introductory undergraduate)
2001–2009	**Instructor**, North Cascades Institute
	Girls on Ice
	Mount Baker's Ice: Glaciology Backpack
	A River's Journey: The Skagit Watershed from Headwaters to Delta
2000–2001	**Scientist-Instructor**, Seattle Part. for Inquiry-Based Science
	Land and Water: Science Content for Elementary Teachers
2000–2001	**Teaching Assistant**, University of Washington
	Glaciers and Global Change (introductory undergraduate)
	Introduction to Geologic Sciences (introductory undergraduate)
1999	**Instructor**, UW Educational Outreach for Youth
	The Ice, An Exploration of Antarctica
	The Glacier Climate Connection, A Field Course in Glaciology

Students Advised and Post Docs Supervised

Supervisor	**Alessio Gusmeroli**. Post Doc, 2010-2012 Univ. of Alaska Fairbanks.
Chair	**Christina Carr**, PhD Geophysics, expected 2016. Univ. of Alaska Fairbanks.
Chair	**Joseph Kennedy**, PhD Physics, expected 2014. Univ. of Alaska Fairbanks.
Member	Amber Phillipe, Ph.D. Interdisciplinary, History of Glacial Landscapes, expected 2016. Univ. of Alaska Fairbanks.
Member	Kristin Timm, MS Science Communication, 2014. Univ. of Alaska Fairbanks.
Member	Kristen Rahilly, MS Geology, 2014. Univ. of Alaska Fairbanks.
Member	Joshua Carmichael, PhD Geophysics, 2013. Univ. of Washington.
Member	Robert McNabb, PhD Geophysics, 2013. Univ. of Alaska Fairbanks.
Member	Marijke Haberman, PhD Geophysics, 2013. Univ. of Alaska Fairbanks.
Member	Tim Bartholomaus, PhD Geophysics, 2013. Univ. of Alaska Fairbanks.
Member	Jason Amundson, PhD Geophysics, 2010. Univ. of Alaska Fairbanks.
Member	Erin Whorton, MS Geology, 2008. Univ. of Washington.
Mentor	**Undergraduate:** Tiffany Green (Fall 2013-present), Jessica Badgeley (Sp. 2013-present), Alison Giffoni (Fall 2012-present) Caroline Aubry-Wake (Sp. 2013), Annelise Miska (Fall 2012), Ephy Wheeler (2012/13), David Tise (2013/13), Trevor Scott (Sp. 2012), Jason Theis (2009/2010, Sum. 2010, 2010/2011, 2011/2012), Joel Brann (Sum. 2010, Fall 2010), Tara Hutchison (Sum. 2010, Fall 2010), Grace Amundson (Fall 2009), Erin Whorton (UW, Sum. and Fall 2004)

Professional Affiliations

Member	American Geophysical Union
Member	International Glaciological Society
Member	Geological Society of America
Member	Association for Women in Science
Member	National Association of Geoscience Teachers

Community Leadership and Service

2013-present	Associate Editor, Journal of Geophysical Research Earth Surface
2012-present	IDDO/IDPO Borehole Logging Advisory Group
2009-2013	NSF Ice Core Working Group
2011-2012	NSF PASSCAL/UNVACO Polar Facilities Planning Group
2008-2012	WAIS Divide Replicate Coring Planning Committee
2005-2009	UNAVCO, Inc., Education and Outreach Steering Committee
2005	NSF OPP Antarctic Artists and Writers Program Panel Review
2002-present	Manuscript and Proposal Reviewer
	Journal of Glaciology, *Annals of Glaciology*, *Journal of Geophysical Research*, *Geology*, *Earth and Planetary Letters*, NSF Office of Polar Programs, NASA, and others
2010-present	University of Alaska Fairbanks
	UAF Committee for Review of Interdisciplinary PhDs (2014-present)
	UAF Committee on the Status of Women (2014-present)
	College of Natural Science and Mathematics Outreach Committee (2011-present)
	Undergraduate and Graduate Geophysics Curriculum Revision (2010-2012)
	Remote Sensing Faculty Search Committee (2011-12)
	Departmental Student Learning Outcomes Assessment (2012-present)
1999-2002	University of Washington, Department of Earth and Space Sciences,
	Undergraduate Curriculum (during departmental merger)
	Faculty Search Committee
	Graduate Representative to Faculty
	Graduate Representative for Qualifying Exam

Selected Public Outreach

2014	Radiolab (http://www.radiolab.org/people/erin-pettit/)
	NBC science advisor
	Advisor for undergraduate-elementary student experience
2013	Fairbanks Science Cafe
	National Geographic Live! Video Presentation (http://video.nationalgeographic.com/video/ng-live/pettit-glaciers-lecture-nglive)
	McMurdo Station Sunday Science Talk
	Live from Antarctica, virtual classroom visit
	National Geographic Weekend Radio Interview (http://newswatch.nationalgeographic.com/2013/07/22/july-21-2013-swimming-from-cuba-to-florida-developing-deep-sea-suits-and-more/)
2007	Wings WorldQuest (http://www.wingsworldquest.org/pettit)
2006	Smithsonian Online (http://www.smithsonianmag.com/ist/?next=/science-nature/glaciologist-erin-pettit-reports-from-the-field-133762995/)
2005	New York Times (http://www.nytimes.com/2005/03/08/science/earth/08prof.html?_r=0)

Selected Recent Research Collaborators

University of Washington: Ed Waddington, Jeff Nystuen, Eric Steig, Ron Sletten.

Portland State University: Andrew Fountain

University of Oregon: David Sutherland

Oregon State University: Emily Shroyer, Jonathan Nash

University of Alaska, Fairbanks: Will Harrison, Martin Truffer, Laura Conner

University of Colorado: Ted Scambos (NSIDC), Robert Anderson (INSTARR)

University of Texas: Preston Wilson

Dartmouth College: Rachel Obbard

Western Washington University: Doug Clark

University of Iceland: Throstur Thorsteinsson

U.S. Geological Survey: Shad O'Neel

University of Tennessee Knoxville: Jill Mickuki

University of Santa Cruz: Slawek Tulaczyk

Desert Research Institute: Joseph McConnell

Ohio State University: Ellen Mosley-Thompson, Berry Lyons

University of Houston: Julia Smith-Wellner

Columbia- LDEO: Bruce Huber

Hamilton College: Eugene Domack

Colgate University: Amy Leventer

Scipps Institute of Oceanography: Maria Vernet

New York University: David Holland

Laboratory of Glaciology and Geophysical Environment, France: Maurine Montagnat, Catherine Ritz, Olivier Gagliardini, Gael Durand

Grants and Funding Awards

Awarded 2008 to date: $2,564,769

Proposals Currently Under Review

2015-2020 *CAREER: Project NOISE: Novel Ocean Ice Sound Exploration in Glacierized Fjords.* NSF Office of Polar Programs. PI E. Pettit (UAF). $828,758

2015-2018 *Collaborative Research: Getz Ice Shelf Geophysics and Ice-Ocean Interaction.* NSF Office of Polar Program. Lead PI T. Scambos (CU-NSIDC), PIs: E. Pettit (UAF), M. Truffer (UAF), D. Holland (New York University), S. Anadakrishnan and A. Muto (PennStateU). $428,541 (Pettit Portion)

2014-2015 *RAPID: Observing the Disintegration of the Scar Inlet Ice Shelf.* NSF Office of Polar Program. Lead PI E. Pettit (UAF), PIs: M. Truffer (UAF), T. Scambos (CU-NSIDC). $200,000 (Total UAF)

Currently Funded Projects

2012–2016 *Collaborative Research: MIDGE: Minimally Invasive Direct Glacial Exploration of Biogeochemistry, Hydrology and Glaciology of Blood Falls, McMurdo Dry Valleys* NSF Office of Polar Programs. Lead PI J. Mickuki. PIs E. Pettit (UAF), S. Tulaczyk (USCS), and W. Lyons (OSU) $316,679 (Pettit Portion)

2012–2016 *Collaborative Research: VELVET Ice: Evolution of Fabric and Texture in Ice at WAIS Divide, West Antarctica.* NSF Office of Polar Programs. Lead PI E. Pettit (UAF). PI R. Obbard (Dartmouth College). $476,328 (Pettit Portion)

2011–2015 *Girls on Ice: Using Immersion to Teach Fluency in Science.* NSF Office of Polar Programs. Lead PI E. Pettit (UAF) $299,870.

2010–2014 *The Relationship between Climate and Ice Rheology at Dome C, East Antarctica.* NSF Office of Polar Programs. Lead PI E. Pettit (UAF) $459,161.

2009–2013 *Collaborative Research in IPY: Abrupt Environmental Change in the Larsen Ice Shelf System, a Multi-disciplinary Approach – Cryosphere and Oceans.* NSF Office of Polar Programs. Lead PI T. Scambos (CU-NSIDC), PIs: E. Pettit (UAF), M. Truffer (UAF), E. Mosley-Thompson and L. Thompson (OSU), B. Huber and A. Gordon (CLDEO). $268,556 (Pettit Portion)

Grants and Funding Awards, cont.

Past Funded Projects

2012–2014	*Collaborative Research: Sonic Logging the NEEM Corehole, Greenland* NSF Office of Polar Programs. Lead PI: E. Waddington (UW), PI: E. Pettit (UAF). $58,414. (Pettit portion)
2012-2013	*Thermal Signature of Blood Falls: a Supraglacial Link to the Subglacial Environment* Alaska Space Grant. Lead PI E. Pettit (UAF) $51,898 (includes matching funds)
2009–2012	*Collaborative Research: Ice core paleoclimate records from Combatant Col, British Columbia, Canada.* NSF Paleoclimate Program. Lead PI E. Steig (UW), PIs E. Pettit (UAF), D. Clark (WWU), J. McConnCRI). $156,981 (Pettit Portion).
2007–2011	*Collaborative Research: Anisotropy, abrupt climate change, and the deep ice in West Antarctica.* NSF Office of Polar Programs. Lead PI E. Pettit (UAF), PI Ed Waddington (UW). $309,796 (Pettit Portion)
2008–2011	*Collaborative Research: A New Method for Observing Variability in Freshwater Discharge from Arctic and Antarctic Marine-Terminating Glaciers using Passive Ocean Acoustic Measurements.* NSF Office of Polar Programs. Lead-PI: E. Pettit (UAF), PIs J. Nystruen (UW-APL), S. O'Neel (CU Boulder). $140,099 (Pettit Portion).
2009	*High Resolution Ground Penetrating Radar for Undergraduate Research and Learning* . UAF TAB Proposal (Internal) $12,950.
2007–2008	*Where there Once was Ice: the Effects of Ice Shelf Breakup on Glaciers and Sea Level Rise.* National Geographic Expedition Council. PI: E. Pettit. $14,019 plus travel expenses
2006–2008	*Alaska Glacier Monitoring Program.* United States Geological Survey. Lead PI E. Pettit (no proposal written) $180,000
2007	*GPS surface profiling for volume change of North Cascades Glaciers.* North Cascades National Park. Lead PI E. Pettit. $2400
2000	*Ice-Penetrating Radar Profiles of the Summit Craters, Mount Rainier.* Mount Rainier National Park. 01 July 2000 - 15 Sept 2000. $0
2003–2008	*Collaborative Research: Mechanics of dry-based ice cliffs.* NSF Office of Polar Programs. 01 May 2003 - 30 April 2008. Lead-PI B. Hallet (UAF), PI Andrew Fountain (PSU) PostDoc: E. Pettit $266,648 (UW Portion) ***Note: I designed this project and wrote this proposal to fund my Post Doc under the guidance of Drs. Hallet and Fountain*

Publications

Papers with ** are first-authored by undergraduate students, graduate students, or post docs under my primary supervision

Peer-reviewed papers in progress (in review or expected submission in next six months)

in review — Lavoie, C., E.W. Domack, **E.C. Pettit**, T.A. Scambos, R.D. Larter, H.-W. Schenke, K.C. Yoo, J. Gutt, J. Wellner, M. Canals, J.B. Anderson, D. Amblas. *in review* Paleo-Ice flow directions of the northern Antarctic Peninsula Ice Sheet based upon a new synthesis of seabed imagery. The Cryosphere.

in review — Buizert, C. WAIS-Divide Project Members. *in review.* Precise interhemispheric phasing of abrupt climate change during the last ice age. Nature.

in review — **Kennedy, J.H. and **E.C. Pettit**. *in review.* The response of climate-induced fabric variations to simple shear and migration recrystallization. *Journal of Glaciology.*

in prep — **Pettit, E.C.** A. Gusmeroli, C. Ritz, J.H. Kennedy, M. Montagnat, C. Carr, and G. Durand. *in prep.* Strongly varying rheological properties of the deep ice in central East Antarctica.

in prep — **Pettit, E.C**. *in prep.* Ice Cliffs and the Terminus Dynamics of Polar Glaciers.

in prep — **Pettit, E.C.**, J. Brann, K. Lee, J.A. Nystuen, P. Wilson, and S. O'Neel. *in prep.* Unusually Loud Ambient Noise in Tidewater Glacier Fjords: A Signal of Ice Melt.

in prep — **Pettit, E.C.,** T.A. Scambos, R. Bauer, E. Mosley-Thompson, M. Tuffer, V. Zagorodnov, T. Haran, and R. Ross. *in prep.* The Characteristics and Dynamics of the Bruce Plateau Ice Cap, Antarctic Peninsula.

in prep — Conner, L., Tzou, C., and **E.C. Pettit**. *in prep.* Building Perseverance, Determination, and Inspiration in Teen Girls through Field Glaciology and Mountaineering.

in prep — **Badgeley, J., **E.C. Pettit**, C. Carr, T. Nylen, and S. Tulaczyk. *in prep.* Brine movement through cold glacier ice: the Blood Falls englacial conduit.

in prep — **Kennedy, J.H., **E.C. Pettit**. *in prep.* Positive feedback between fabric development and shear strain in ice sheets.

in prep — Kluskiewicz, D., **E.C. Pettit**, C. Carr, and E.D. Waddington *in prep.* Strong contrasts in ice crystal fabric at NEEM, Greenland: implications for ice folding and deformation.

in prep — Carns, R., E.D. Waddington, **E.C Pettit**. *in prep* A Stochastic Model of Grain-Size Distribution and Crystal Orientation in Snow and Firn.

in prep — **Pettit, E.C.**, C. Aubry-Wake, C. Carr, A. Giffoni, A. Miska, T. Q. Scott, J. Theis, D. Tise, E. Wheeler. Waterfall Ice Growth and Near-Surface Thermal and Crystal Structure.

Publications, cont.

Peer-reviewed papers published or accepted for publication

2014 **Pettit, E.C.**, E. Whorton, E.D. Waddington, and R. Sletten. Influence of debris-rich basal ice on flow of a polar glacier. *Journal of Glaciology* 60(223), 989–1006, doi:10.3189/2014JoG13J161

2014 Rebesco, M. E. Domack, F. Zgur, C. Lavoie, A. Leventer, S. Brachfeld, V. Willmott, G. Halverson, M. Truffer, T. Scambos, J. Smith, **E. Pettit**. Boundary condition of grounding lines prior to collapse, Larsen-B Ice Shelf, Antarctica. *Science* 345. 1354-1358.

2013 **Kennedy, J.H., **E.C. Pettit**, C.L. DiPrinzio. The evolution of ice crystal fabric in ice sheets and its link to climate history. *Journal of Glaciology* 59 (214). doi:10.3189/2013JoG12J159

2013 Balco, G., J.M. Schaefer, and LARISSA Project Community Members. Exposure-age record of Holocene ice sheet and ice shelf change in the northeast Antarctic Peninsula *Quaternary Science Reviews* 59 101-111.

2012 Neff, P.D., E.J. Steig, D.H. Clark, J.R. McConnell, **E.C. Pettit**, B. Menunos. 2012. Ice-core net snow accumulation and seasonal snow chemistry at a temperate-glacier site: Mount Waddington, southwest British Columbia, Canada. *Journal of Glaciology* 58(212): 1165-1175.

2012 **Gusmeroli, A., **E.C. Pettit**, J.H. Kennedy, and C. Ritz. 2012. The crystal fabric of ice from full-waveform borehole sonic logging. *Journal of Geophysical Research* 117(F03021) doi:10.1029/2012JF002343.

2012 **Pettit, E.C.**, J.A. Nystuen, S. O'Neel. 2012. Listening to Glaciers: Passive Hydroacoustics Near Marine-Terminating Glaciers. *Oceanography.* 25(3) 104-105.

2012 **Carmichael, J, **E.C. Pettit**, M. Hoffman, B. Hallet, and A.G. Fountain. 2012. Seismic multiplet response triggered by melt at Blood Falls, Taylor Glacier, Antarctica. *Journal of Geophysical Research.* 117 (F03004), doi:10.1029/2011JF002221

2012 Zagorodnov, V, O. Nagornov, T. A. Scambos, A. Muto, E. Mosley-Thompson, **E. Pettit**, S. Tyuflin. 2012. Borehole temperatures reveal details of 20th Century warming at Bruce Plateau, Antarctic Peninsula. in press. *The Cryosphere.* 6, 675-686, doi:10.5194/tc-6-675-2012

2012 **Pettit, E.C.**. 2012. Passive acoustic evolution of a calving event. *Annals of Glaciology.* 53(60), 113-122, doi: 10.3189/2012AoG60A137

2011 Glasser, N.F., T.A. Scambos, J. Bohlander, M. Truffer, **Pettit, E.C.**, B. Davies. 2011. Continued rapid glacier recession, acceleration and thinning following the 1995 collapse of the Prince Gustav Ice Shelf on the Antarctic Peninsula. *Journal of Glaciology.* 57(203). pp. 397-406

2011 **Pettit, E.C.**, E.D. Waddington, T. Thorsteinsson, H.P. Jacobson, W.D. Harrison, D. Elsberg, M.A. Zumberge, E. Hussman, J.L. Morack, and G. Lamorey. 2011. The Crossover Stress, Anisotropy, and the Flow Law at Siple Dome. *Journal of Glaciology.* 57 (201) pp. 39–52.

Publications, cont.

2009 Harrison W.D., L. Cox, R.S. March, R. Hock, and **E.C. Pettit** . 2009. Implications for the dynamic health of a glacier from comparison of conventional and reference-surface balances. *Annals of Glaciology.* 50. pp. 25-30.

2007 **Pettit, E.C.**, T. Thorsteinsson, H.P. Jacobson, and E.D. Waddington. 2007. The Role of Anisotropy in Flow Near an Ice Divide. *Journal of Glaciology.* 53(181). 277-288.

2006 **Pettit, E.C.**. 2006. Ice flow at low deviatoric stress: a case study of Siple Dome, West Antarctica. *Glaciers and Earth's Changing Environment.* P.G. Knight, ed. Blackwell Publishing, Ltd. Oxford.

2004 Elsberg, D.H., W.D. Harrison, E. Husmann, J.L. Morack, **E.C. Pettit**, E.D. Waddington, M.A. Zumberge. 2004. Strain rates and short term strain events measured at Siple Dome, Antarctica. *Journal of Glaciology.* 50(171). 511-521.

2003 **Pettit, E.C**. and E.D. Waddington. 2003. Ice flow at low deviatoric stress. *Journal of Glaciology.* 49(166). 359–369.

2003 Kay, J.E., A.R. Gillespie, G.B. Hansen, and **E.C. Pettit**. Spatial relationships between snow contaminant content, grain size, and surface temperature from multispectral images of Mt. Rainier, Washington (USA). *Remote Sensing of the Environment.* 86. 216–231.

2002 **Pettit, E.C**., H.P. Jacobson, and E.D. Waddington. 2002. Effects of basal sliding on isochrones and flow near an ice divide. *Annals of Glaciology.* 37. 370–376.

2002 Zumberge, M.A., D.H. Elsberg, W.D. Harrison, E. Husmann, J.L. Morack, **E.C. Pettit**, and E.D. Waddington. 2002. Measurement of vertical strain and velocity at Siple Dome with optical sensors. *Journal of Glaciology.* 48(161). 217–225.

Peer-reviewed papers published from my undergraduate work and as employee at AeroVironment

1999 **Pettit, E.C.**, J.R. Simpson, K. Oh, and T.F. Morse. 1999. Thermal effects on the excited state absorption and upconversion process of erbium ions in germanosilicate optical fiber. *Journal of Non-Crystalline Solids.* 259. 51-56.

1999 Oh, K, **E.C. Pettit**, A. Kilian, and T.F. Morse. 1999. Analysis of spectroscopic properties of erbium doped $Ta_2O_5 - Al_2O_3 - SiO_2$ optical fiber. *Journal of Non-Crystalline Solids.* 259. 10-15.

1995 Anderson, C.A. and **E.C. Pettit**. 1995. The effects of APU characteristics on the design of hybrid control strategies for hybrid electric vehicles. SAE Technical Paper Series 950493. In *Design Innovations in Electric and Hybrid Electric Vehicles.* SAE SP-1089. Bates, B. and F. Stodolsky (eds.). Society of Automotive Engineers, Inc. Warrendale, PA.

Publications, cont.

Other Publications

2014 Lee, K.M. , P.S. Wilson, **E.C. Pettit**. Underwater sound radiated by bubbles released by melting glacier ice. *Proceedings of Meetings on Acoustics* 20(1) 070004.

2011 UNAVCO/IRIS Polar Facility Draft Plan (`http://www.iris.edu/hq/polar_facility_draft/`). **E.C. Pettit** was a co-lead author on Chapter 5.

2008 Severinghaus, J, R. Bay, E. Brook, J. Cole-Dai, **E.C. Pettit**, and T. Sowers. 2008. Replicate Coring Science and Implementation Plan: WAIS Divide Ice Core and Beyond. U.S. Ice Core Working Group.

2008 **Pettit, E.C.**, R. March, E. Josbereger, W. Bidlake. 2008. 50-Year Record of Glacier Change Reveals Shifting Climate in the Pacific Northwest and Alaska, USA. USGS Factsheet.

2008 **Pettit, E.C.**. 2008. Girls on Ice: Using "Immersion" to Teach "Fluency" in Science. National Ice Core Laboratory Newsletter.

2005 Conway, H. T.A. Neumann, S. Price, E.D. Waddington, D. Morse, K. Taylor, P.A. Mayewski, D. Dixon, **E. Pettit**, and E.J. Steig. 2005. Candidate drill site near the Ross-Amundsen ice divide, West Antarctica. Report to the Ice Core Working Group.

Selected Recent Abstracts and Presentations

2014 *Invited* **Pettit, E.C.**, T.A. Scambos, T. Haran, J.S. Wellner, E. Domack, M. Vernet, A. Leventer, S. Ishman. Tidewater Glacier Dynamics on the Antarctic Peninsula. GSA Annual Meeting in Vancouver, British Columbia.

2014 **Pettit, E.C.** and Larissa Project Members. The Antarctic Peninsula: A Split Personality. International Glaciological Society Symposium. Chamonix, France.

2014 Lee, K.M. , P.S. Wilson, **E.C. Pettit**. Underwater sound radiated by bubbles released by melting glacier ice. *Proceedings of Meetings on Acoustics* 20(1) 070004.

2013 **E.C. Pettit** A Glacial Orchestra: Underwater Acoustics at the Ice-Ocean Boundary. McMurdo Science Lecture. McMurdo, Antarctica.

2013 *Invited* **Pettit, E.C.** J.M. Theis, P.D. Neff, E.J. Steig, D.H. Clark, J.R. The Neglected Middle Child - Snow, Firn, and Water Storage in the Ice Sheet Percolation Zone. West Antarctic Ice Sheet Initiative. Sterling, Virginia, U.S.A. Sept 29-Oct 2, 2013.

2013 *Invited* **Pettit, E.C.**. Ice is Alive. National Geographic Explorers Symposium. Washington, D.C. June 9-14, 2013.

2013 ** Kennedy, J. and **E.C. Pettit**. The record may be in the fabric: Preservation of climate history in polar ice sheets. *Eos Trans. AGU, Fall Meet. Suppl.,* Abstract C52B-08.

2013 Armstrong, W.H., R.S. Anderson, **E.C. Pettit**, and H. Rajaram. Hydrometeorology and basal sliding on the Kennicott Glacier, Alaska, USA: Evidence for seasonal, diurnal, and event-scale glacier velocity fluctuations due to varying meltwater inputs and precipitation events. *Eos Trans. AGU, Fall Meet. Suppl.,* Abstract C33B-0720.

2013 Scambos, T.A., C.A. Shuman, M. Truffer, **E.C. Pettit**, B.A. Huber, T.M. Haran, R. Ross, and E.W. Domack. Evolving Toward the Next Antarctic Ice Shelf Disintegration: Recent Ice Velocity, Climate, and Ocean Observations of the Larsen B Ice Shelf Remnants. *Eos Trans. AGU, Fall Meet. Suppl.,* Abstract C21E-06.

2013 Lee, K.M., P.S. Wilson, and **E.C. Pettit** Underwater sound radiated by bubbles released by melting glacier ice. The Journal of the Acoustical Society. 134(5). 4172.

2012 *Invited* **Pettit, E.C.** Learning to Love Science: The Value of a Scientist-Mentor for Teens (Lessons from Girls on Ice). *Invited.* UNAVCO Science Workshop. Boulder, Co. Feb. 28-Mar 1, 2012.

2012 Scambos, T., J. Bohlander, **E. Pettit**, M. Truffer, C. Shuman, I. Joughin, L. Padman, H. Fricker, and R. Ross. Towards the Next Antarctic Ice Shelf Disintegration?: Recent Changes in the Larsen B Ice Shelf Remnant and its Tributary Glaciers. *IPY Conference Montreal 2012 From Knowledge To Action.* Montreal Canada, 22-27 April, 2012.

Selected Abstracts and Invited Presentations, cont.

2012 **Pettit, E.C.**, J.M. Theis, P.D. Neff, E.J. Steig, D.H. Clark, J.R. McConnell. A new polythermal regime? An advection-dominated seasonally layered accumulation area at Mount Waddington, British Columbia. *Eos Trans. AGU, Fall Meet. Suppl.,* Abstract C23B-0657.

2012 Carns, R., E.D. Waddington, **E.C Pettit**. A Stochastic Model of Grain-Size Distribution and Crystal Orientation in Snow and Firn. *Eos Trans. AGU, Fall Meet. Suppl.,* Abstract C51B-0785.

2011 *Invited* **Pettit, E.C.**, E. Waddington, T. Thorsteinsson, A. Gusmeroli, J. Kennedy, C. Ritz, and R. Carns. Using Borehole Sonic Logging to Infer Ice Microstructure and Climate History. *EGU General Assembly.* Abstract EGU2011-14160.

2011 *Invited* **Pettit, E.C.**. Girls on Ice: Using Immersion to Teach Fluency in Science. Classrooms for Climate Symposium. Anchorage, AK. May 4-7, 2011.

2011 **Gusmeroli, A., **E. Pettit**, C. Ritz, J. Kennedy, M. Montagnat, E. Lefebvre, G. Durand, S. Kipfstuhl, and S. Sheldon. The relationship between climate and ice rheology at Dome C, East Antarctica: a comparison of fabric determined by borehole sonic logging and thin sections. *EGU General Assembly.* Abstract EGU2011-2341.

2011 **Kennedy, J. **E. Pettit**, C. Di Prinzio, E. Waddington, P. Jacobson, and L. Wilen. Modeling the evolution of crystal fabric and its link to climate and ice sheet history. *EGU General Assembly.* Abstract EGU2011-2343.

2011 **Pettit, E.C.**, T. Scambos, M. Truffer, R. Bauer, E. Mosley-Thompson, V. Zagorodnov, T. Haran, R. Ross, B. Blaire, and I. Joughin. The Bruce Plateau Ice Cap: Upstream Dynamics of the Southern Larsen B Ice Shelf. *EGU General Assembly* Abstract EGU2011-2698.

2011 **Pettit, E.C.** and A. Gusmeroli. The in situ elastic signature of changes in crystal orientation fabric in a deep Antarctic borehole from full-waveform sonic logging. *Eos Trans. AGU, Fall Meet. Suppl.,* Abstract C11C-0680.

2011 **Gusmeroli, A., **E.C. Pettit**, C. Ritz, J. H. Kennedy, M. Montagnat. Influence of climate on ice-rheology at Dome C, East Antarctica. *Eos Trans. AGU, Fall Meet. Suppl.,* Abstract C11F-07.

2011 **Pettit, E.C.**, J. Nystuen, S. O'Neel, J. Brann, T. Bartholomaus. Of Bubbles and Bergs: Underwater Acoustics in Tidewater Glacier Fjords. International Symposium on Interactions of Ice Sheets and Glaciers with the Ocean. San Diego, CA. June 5-10, 2011.

2010 **Kennedy, J.H.,**Pettit, E.C.**, C.L. DiPrinzio, L.A. Wilen. 2010. Exploring the relation between crystal fabric and climate history in an ice-core record. *Eos Trans. AGU, Fall Meet. Suppl.*, Abstract C13B-0546

2010 Carns, R., E.D. Waddington, **Pettit, E.C.**, S.G. Warren. 2010. A Model of Grain Growth and Crystal Fabric in Polar Snow and Firn. *Eos Trans. AGU, Fall Meet. Suppl.*, Abstract C33D-0572

References

Edwin D. Waddington, Professor
Department of Earth and Space Sciences, University of Washington
Box 351310
Seattle, Washington, 98195
206-543-4585, edw@ess.washington.edu

Bernard Hallet, Professor
Department of Earth and Space Sciences, University of Washington
Box 351310, Seattle, Washington, 98195
206-685-2409, hallet@u.washington.edu

Andrew Fountain, Professor
Department of Geology, Portland State University
P.O. Box 751
Portland, Oregon, 97207
503-725-3386, andrew@pdx.edu

Eric Steig, Professor
Department of Earth and Space Sciences, University of Washington
Box 351310
Seattle, Washington, 98195
206-685-2409, steig@ess.washington.edu

Maurine Montagnat, Researcher
Laboratoire de Glaciologie et de Gophysique de l'Environnement
54, Rue Molire
Domaine Universitaire
BP 96, 38402 Saint Martin d'Hres Cedex, France
33 4 76 82 42 67 , montagnat@lgge.obs.ujf-grenoble.fr

Martin Truffer, Professor
Geophysical Institute, University of Alaska Fairbanks
P.O. Box 757320
Fairbanks AK 99775
907-474-5359, truffer@gi.alaska.edu

Ted Scambos, Senior Scientist
The National Snow and Ice Data Center (NSIDC), University of Colorado
449 UCB, Boulder, CO 80309-0449
303-492-1113, teds@icehouse.colorado.edu