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A. Education:

University of Alaska, Fairbanks, Ph.D., May 2006. Department of Biology and Wildlife.
Advisor: Dr. F. Stuart Chapin III. G.P.A.: 4.0. Dissertation: Methane emissions and biogeochemistry of North Siberian thermokarst lakes. 2006 1st place winner of the United States Council of Graduate Schools/ University Microfilms International Distinguished Dissertation Award in the field of Mathematics, Physical Sciences and Engineering.
University of California, Davis, M.Sc. Restoration Ecology. August, 2000. Department of Environmental Studies and Policy. Major Advisor: Dr. Charles Goldman. G.P.A.: 3.96
Thesis: Ecosystem effects of the invasion of Eurasian watermilfoil (*Myriophyllum spicatum*) at Lake Tahoe, CA-NV.
Mount Holyoke College, Bachelor of Arts, May 1998. High Honor in Geology. *Magna cum Laude*.
Major: BiogeochemistryMinor: Russian Studies G.P.A.: 3.94
Honors Thesis: "Organic Geochemical Analysis of Biomarkers from Birch Lake, Alaska".
Edinburgh University, Scotland. 1996-97. Geology, ecology; field and lab courses.
Novosibirsk State University, Russia. Summer 1995. Scientific Russian Language.
Portland State University, Oregon. 1993-94. Russian Language 411, 412, 413.
Kuban State University, Krasnodar, Russia. 1992-93. Russian language and studies.

B. Professional Experience (selected):

Research Full Professor, Water and Environmental Research Center, Institute of Northern Engineering & International Arctic Research Center, University of Alaska Fairbanks. Research on methane in the Arctic and other northern lakes, biogeochemistry, climate change, permafrost/thermokarst, carbon cycling, isotopes. Apr. 2019-present.
Research Associate Professor, Water and Environmental Research Center, University of Alaska Fairbanks. Apr. 2013-Apr. 2019.
Research Assistant Professor, Water and Environmental Research Center, University of Alaska Fairbanks. May 2007-Apr. 2013.
UA Presidential International Polar Year Postdoctoral Fellow: March-May 2007. Research on carbon and nutrient cycling in northern lakes with particular attention to permafrost dynamics and thermokarst processes in the Arctic.
Research Program Manager, **Oil Spill Recovery Institute,** Prince William Sound Science Center, Cordova, Alaska. February 2006 - March 2007. Research program development and management of

annual and strategic plans for a grant program focused on oil pollution issues in arctic and sub-arctic aquatic ecosystems. Directed peer-review of research proposals and planned RFPs. Worked with Board members from the Exxon Valdez Oil Spill Trustee Council, two Regional Citizens' Advisory Councils, the Alaska Department of Environmental Conservation, and the North Pacific Research Board and Coastal Response Research Center, US Minerals Management Service, and SINTEF's Joint Industry Program. Served on the Oil Spill Response and Prevention Committee of the Prince William Sound Regional Citizens Advisory Council and am a member of the Advisory Board of the University of New Hampshire/NOAA's Coastal Research Response Center.

Project Coordinator at the Northeast Science Station in Cherskii, Russia. Coordinated Russian-U.S. collaborations for the International Polar Year as part of an effort to network arctic observatories in Alaska and Russia for long term monitoring of climate change in cold regions. 2001-2008.

Visiting scientist at Max Planck Institute for Microbiology, Marburg Germany. Conducted laboratory incubations for methane production potential, isotope analyses, presentation, collaboration with Dr. Peter Frenzel. 2003, 2005, 2009.

Radiocarbon Course, Keck AMS Facility UC Irvine, with E.A.G Schuur and S. Trumbore, 2007

Graduate Research Assistant with Dr. F. S. Chapin III (Univ. Alaska Fairbanks) and Sergey Zimov (Northeast Science Station in Cherskii, Russia). Field expeditions 5-7 mos per year 2000-2004. Laboratory supervisor at Northeast Science Station. Organization of logistics for equipment and sample transport to NE Siberia from the United States. Supervised undergraduate students and field and lab technicians. I am fluent in Russian language

Isotope analyst in Radiocarbon Lab at University of Florida in collaboration with Dr. Ted Schuur. March 2004. Stable isotope analyses of gases, graphitization of CO_2 for radiocarbon age dating of CH_4 and peat. These were skills I learned during my Ph.D. work.

Stable isotope analyst in Department of Oceanography at Florida State University with Dr. Jeffrey Chanton; Vacuum line procedures, isotope-gas chromatography/mass spectrometry of gases. 2004. These were skills I learned during my Ph.D. work.

Geographical Information System (GIS), training with Dr. Dave Verbyla using ArcView to analyze changes in Siberian lake area using MSS and ETM Landsat images. 2002. I learned some GIS skills during my Ph.D. work.

Teaching assistant for Nutrient Cycling course in Natural Resource Management for undergraduate and graduate students with Dr. David Valentine, University of Alaska Fairbanks, Spring 2003.

Stable Isotope Ecology Lecture and Laboratory Short Course at the University of Utah with Dr. J. Ehleringer, June 2002.

Graduate Research Assistant in the Tahoe Research Group, UC Davis, 1998 to 2000. Masters thesis research on ecosystem effects of Eurasian watermilfoil (aquatic macrophyte) invasion at Lake Tahoe, CA-NV. Assessment of impact on lake water quality.

Organization for Tropical Studies; graduate field study program in tropical biology, Costa Rica, 2000.

Tahoe-Baikal Institute summers 1998, 1999. Project leader for US portion of program. Directed research on aquatic macrophytes and water quality at Lake Tahoe, CA. Limnology project leader at Lake Baikal, Siberia. Participant of the Lake Tahoe Yellow Cress GIS project, Lake Tahoe, CA.

REU Research Assistant in Biogeochemistry Lab, *University of Mass, Amherst Department of Geosciences*. 1997-1998. Senior thesis project with Dr. Emily CoBabe tracing organic content of biomarkers in lake sediments from Alaskan lakes; use of GC and GC-MS.

Summer Research Program at Geophysical Institute, *University of Alaska, Fairbanks*. Summer 1996. 40 hours per week. Research project in geochronology with Dr. Paul Layer using $^{40}Ar/^{39}Ar$ method and mass spectrometer to age-date volcanic samples from Chukotka Peninsula in Siberia.

Lab Instructor, *Mount Holyoke Geology Department*. 1996. Taught lab section for Geology 100.

CIEE Novosibirsk Summer for Students in the Natural Sciences, 1995. Studied abroad in *Novosibirsk, Russia*. Studied scientific Russian language and environmental science, including the pollution of Lake Baikal.

American Field Services (AFS), Study abroad in *Krasnodar, Russia*. 1992-93. Attend high school and university for Russian language, cultural study.

RESEARCH

C. Grants & Scholarships (>$16M awarded):

NSF Shrinking the Uncertainties in Bottom-up Estimates of Methane Emission from Arctic Lakes. (Univ. Minn. PI: A. Ebtehaj) Feb. 2024-Feb. 2027. $798,783 PENDING

NASA SMAP. Arctic Lake-ice Phenology and Methane Emissions: Can SMAP Observations Shrink the Uncertainties. PI K. Walter Anthony (Univ. Minn. PI: A. Ebtehaj). Mar. 2024-Feb. 2027 *$125,059* PENDING

NSF OIA - Mid-scale R1-1: Implementation Project (M1:IP) – Establishing the Alaska Radiocarbon Center (The ARC) to serve on the frontline of environmental changes in the Arctic. Co-PI K. Walter Anthony; PI. M. Wooller) Oct. 2023-Sep. 2027. $7,229,319 Not Funded.

NASA ABoVE. JPL Subcontract 1685291. PI K. Walter Anthony (JPL PI Charles Miller). Enhanced Methane Emissions in Transitional Permafrost Environments: An ABoVE Phase 3 Synthesis Investigation. Nov. 2022 - Dec. 2025. $226,123 FUNDED.

Sandia National Laboratories. Improving Biological Fidelity of Arctic Greenhouse Gas Emissions from Permafrost. Dec. 2021-Sep. 2024 $236,000 FUNDED

NASA FINESST 80NSSC21K159. Remote sensing methane superseeps in Alaska. PI. K. Walter Anthony; Ph.D. student, Natalie Tyler. Sep. 2021 – Aug. 2024. $134,668 FUNDED

NSF Atmospheric Sciences 2039276. PI. K. Walter Anthony (Rochester University PI V. Petrenko). Collaborative Research: Geologic Methane Emissions to the Atmosphere: Improving The Bottom-Up Estimates Of Microseepage. Feb. 2021 – Jan. 2024. $46,748 FUNDED.

NSF 20-514 Navigating the New Arctic 2022561. PI. K. Walter Anthony (CU PI T. Jones; Co-PIs T. Curry, C. Alden, G. Rieker, B. Vaughn, T. Curry). Title: Collaborative Research: NNA Track 1: Global impacts and social implications of changing thermokarst lake environments near Yukon River Watershed communities. 9/15/20 – 8/31/24. $907,444 FUNDED.

NSF AON 1936752. Co-PI. K. Walter Anthony (PI Bret-Harte, Co-PI's S. Stuefer, A. Kholodov). Collaborative Research: Tracking Carbon, Water, and Energy Balance of the Arctic Landscape at Flagship Observatories in Alaska and Siberia. 7/15/20 – 6/30/25. $2,394,606. FUNDED.

NSF P2C2 1903735. PI K. Walter Anthony [Co-PIs M. Jones (USGS), S. Frolking (UNH)]. Collaborative Research: Sea-level rise, coastal wetland expansion, and proglacial lake contributions to abrupt increases in northern atmospheric CH_4 during the last deglaciation. $440,263 FUNDED.

NASA ABoVE JPL Subcontract 1639003. PI K. Walter Anthony (JPL PI Charles Miller). Characterizing Microtopographic Hot-spots and Landscape-scale Methane Emissions Across the ABoVE Domain. Oct 1. 2019 - Sep. 30, 2022. $499,451 FUNDED.

NASA ABoVE JPL Subcontract 1572960, PI: K. Walter Anthony. (JPL PI Charles Miller). Imaging arctic methane plumes. Jan. 2017 - Dec. 2019. $626,650. FUNDED.

NANA Regional Corporation. PI: K. Walter Anthony. Sub-permafrost methane gas seeps near Kotzebue, Alaska. Oct. 1, 2016 - Sep. 30, 2019, $93,685 FUNDED.

NASA ABoVE NNX15AU49A: Co-PI K. Walter Anthony, PI F. Meyer. Characterizing methane emission response to the past 60 years of permafrost thaw in thermokarst lakes. Aug. 2015- Jul. 2019. $1,130,751. FUNDED

NSF ARCSS 1500931: Co-PI K. Walter Anthony, PI A. Liljedahl. Methane release from thermokarst lakes: Thresholds and feedbacks in the lake to watershed hydrology- permafrost system $2,086,836. Sep. 2015- Aug. 2019. FUNDED

NSF ARC 1304823. PI. K. Walter Anthony, Co-PIs G. Grosse, M. Jones. Collaborative Research: P2C2: Contributions of northern cold-climate peatlands and lakes to abrupt changes in atmospheric methane during the last deglaciation, June 2013 - May 2018, $500,000. FUNDED.

NSF OPP 1107892. Co-PI K. Walter Anthony, PI Syndonia Bret-Harte. AON, Collaborative Research on Carbon, Water, and Energy Balance of the Arctic Landscape at Flagship Observatories in Alaska and Siberia. July 2011- June 2016. $2,000,000. FUNDED.

DOE. DE-SC0006920 PI K. Walter Anthony. Collaborative Research: Quantifying Climate Feedbacks of the Terrestrial Biosphere under Thawing Permafrost Conditions in the Arctic, Sep 2011-Aug. 2014, $270,000. FUNDED.

NASA Roses NNX11AH20G. PI K. Walter Anthony, Co-PIs G. Grosse, F. Meyer. Characterization of CH_4 emissions from high latitude lakes in North America using multi-scale remote sensing, June 2011- May 2014, $989,849. FUNDED.

Collaborative Proposal to Lehigh University/NSF. Postdoc support for Miriam Jones. Impacts of climate seasonality on carbon accumulation and methane emissions of Alaskan ecosystems during the Holocene Thermal Maximum. $38,254. July 2010-Jan. 31, 2011. FUNDED

Denali Commission. 2009 Emerging Energy Technology Grant. Improving Cold Region Biogas Digester Efficiency. PI: Katey Walter Anthony, collaboration with Cordova Electric Cooperative, Clay Koplin. $212,346. Oct. 2009-Sep. 2011. FUNDED.

Blackstone Ranch Institute Innovation Challenge Grant, National Geographic Society, 2009. Improving cold season biogas digester efficiency for global energy solutions. PI: K. Walter Anthony. $23,600. Feb. 2010-Jan. 2012. FUNDED.

DOE Methane Hydrates 2008. DOE #DE-NT0005665. Title: Source characterization and temporal variation of methane seepage from thermokarst lakes on the Alaska North Slope in response to arctic climate change. PIs: Matthew Wooller, Katey Walter et al. $750,000 Sept. 2008-Aug. 2012. FUNDED.

NASA RSA 1374976: Astrobiology of Icy Worlds: Habitability, Survivability, and Detectability. PI: Katey Walter, $250,000 September 2008-August 2013. FUNDED.

DOE Climate Change Prediction Program: Abrupt Climate Change Modeling Opportunity # DE-PS02-08ER08-05. Project: Quantifying Climate Feedbacks from Abrupt Changes in High-Latitude Trace-Gas Emissions. PI Walter. $90,000 FUNDED. October 2008-September 2011.

NSF EPSCoR Early Career Fellowship, Project: Methane availability as a function of permafrost vulnerability and vegetation, PI Katey Walter, $30,000. Jan.-Aug. 2008. FUNDED

NASA #NNX08AJ37G: Assessing the spatial and temporal dynamics of thermokarst, methane emissions, and related carbon cycling in Siberia and Alaska; G. Grosse, K. Walter, V. Romanovsky ($600,000). FUNDED April 2008-March 2011.

NSF IPY #0732735: "IPY: Understanding the impacts of permafrost degradation and thermokarst lake dynamics in the Arctic on carbon cycling, CO_2 and CH_4 emissions, and feedbacks to climate change", PI Dr. K. Walter et al. ($650,000)- FUNDED. July 2008-June 2011.

NSF IPY #0732533: "IPY ISE: Polaris Project: Rising Stars in the Arctic, Dr. K. Walter et al., ($104,963)- FUNDED. Jan. 2007-Dec. 2010.

NSF IPY AON, OPP 0632264 (FUNDED, March 2007-February 2012).

UA Presidential International Polar Year Postdoctoral Fellowship ($165,000, 2007-2009)

Young Scientist IASC Scholarship for Arctic Council AMAP, 2007 ($2,500)

NASA Earth Systems Science Fellowship 2003-05 ($85,000)

Global Change Grant, IARC, 2001, 2002 ($10,000)

EPA Star Fellowship, 2000-2002 ($102,000)

UC Davis Graduate Mentorship Fellowship, 1999 ($5,000)

Leopold Schepp Fellowship, 1999 ($15,000)

ARCS Scholarship, 1998, 1999 ($10,000)

Morris K. Udall Scholarship, 1996, 1997 ($14,000)

A. Elizabeth Adams Fellowship, 1998

Claire Bates Davidson Scholarship, 1998

Barry M. Goldwater Scholarship, 1996 ($7,500)

National Security Education Program Scholarship for study in Russia, 1995 ($5,000)

D. Awards:

Achievement Award, Alumnae Association of Mount Holyoke College, 2023.

Emil Usibelli Distinguished Research Award, University of Alaska Fairbanks, 2019.

UAF CEM Researcher of the Year award, 2019

WINGS WorldQuest 2011 Elected Fellow. http://explore.wingsworldquest.org/node/722

National Geographic Society Early Explorers, awarded Feb. 2009, biographical article in NGS Magazine about scientist and her research. $10,000. http://www.nationalgeographic.com/field/explorers/walter-katey-09.html.

Mount Holyoke College Alumnae Association Mary Lyon Award, 2010.
National Wildlife Federation: National Conservation Achievement Award in Science, presented November 2009, Washington DC.
Ecological Society of America 2006 most notable publication
United States Council of Graduate Schools/ UMI Distinguished Dissertation 1st Place Award in Science, Math & Engineering 2006 ($1,000)
Sigma Xi, 1998
New Eight Scholar-Athlete, 1995, 1997
Sarah Williston Scholar, 1996
Rhodes Scholarship finalist, 1998
Seven Sisters Scholar Athlete, 1998
Phi Beta Kappa, 1998
Mildred L. Sanderson Prize in Math, 1995

Nominations:
2019 Helmholtz International Fellow Award
2013, 2018 and 2019 Emil Usibelli Award for Distinguished Research
2014 and 2016 Blavatnik National Award for Young Scientists
2013 Nevada Medal
2012 MacArthur Fellows Program

E. Publications - peer-reviewed; **student/postdoc-authored

Total peer-reviewed publications=84; H-index=44; i10 index=78, total citations=9,508 (9/12/23)

Google Scholar Page:
https://scholar.google.com/citations?hl=en&view_op=list_works&gmla=AJsN-F7n1kEdf-Hulydv96GLuOEjBZ4nTBJMZ54CQ87YUVNn8bXU2hxD8ygOoP9YroHtETMnsrMC3QqB7WNaccH2H4VGOzFxXQ&user=L7UtL6AAAAAJ

Submitted:
Freitas, N. L., **Walter Anthony, K. M., Lenz, J., Porras, R. C., Torn, M. S. Deep permafrost thaw: a significant and overlooked source of greenhouse gas. *Nature Geoscience*, submitted.
Walter Anthony, K. M., P. Anthony, N. Hasson, C. Edgar, O. Sivan, E. Russak, O. Bergman, B. J. Minsley, S. R. James, N. J. Pastick, A. Kholodov, S. Zimov, E. Euskirchen, M. S. Bret-Harte, G. Grosse, M. Langer, J. Nitzbon. Upland Yedoma taliks as an unpredicted source of atmospheric methane. In revision, *Nature Communications*.
Brosius, PROGLACIAL LAKES,
Rangel, R., Parsekian, A., Engram, M., Ohara, N. Jones, B., Kanevsky, M., Bergstedt, H., **Walter Anthony, K. M**. Estimating Northern Lake Ice Properties using Ground Penetrating Radar. *Annals of Glaciology, in review*.
Haghnegahdar, M., Schauble, E., Labidi, J., **Walter Anthony, K. M.**, Kohl, I. Young, E. The 12CH2D2 and 13CH3D signature of microbial methanogenesis evidenced by methane from boreal lakes. *Global Biogeochemical Cycles*, *in review*.
Aguirrezabala-Campano, T. M., Thalasso, F. Inchausti, P., Elder, C. Tyler, N., **Walter Anthony, K. M**., Small role of methanotrophy in a high-methane emitting thermokarst lake, *Global Change Biology*, *in review.*
Kuhn, M., Olefeldt, D., **Walter Anthony, K. M**, et al. Refined estimates of current and future methane emissions from the Boreal-Arctic Region using distinct wetland and lake classes, *Nature Climate Change*, *in review*.
Dan, Z., **Walter Anthony, K.M**., Rashid, I., Wu, N., Chen, H., Joshi, S., Bhattarai, N., Tong, S., Jiang, H., Zhu, Q. Altitude effect on global methane ebullition. PNAS, in review.

Angela Lamb, Chris Francis, Stefan Engels, Maarten van Hardenbroek, Mat Wooller, Alex Lombino, **Katey Walter Anthony**, Ben Barst, Oliver Heiri. Stable isotope analysis of lacustrine chitinous invertebrate remains: analytical advances, challenges, and current understanding. *QSR*, *in review*.

Fuchs, M., M, Jones, E. Gowen, S. Frolking, **K. Walter Anthony**, G. Grosse, B. Jones, J. O'Donnell, L. Brosius, C. Treat. Methane flux from Beringian coastal wetlands for the past 20,000 years. Science Advances, in review.

Heslop, J. K., Sizhong Yang; Matthias Winkel; Katey Walter Anthony; Robert G. M. Spencer; David C. Podgorski; Phoebe Zito; Susanne Liebner. Microbial limitations lead to underestimated methane production from thawed permafrost. Soil Biology and Biochemistry, https://papers.ssrn.com/sol3/papers.cfm?abstract_id=4763796

Kuhn, M., Olefeldt, D., **Walter Anthony, K. M**. et al. Modeling Boreal-Arctic methane with distinct wetland and lake classes reduces the estimate of current emissions but highlights climate sensitivities. Nature.

Liu, J., Young, E. D., Pellerin, A., Sivan, O., Valentine, D. **Walter Anthony, K**. Treude, T. et al. Methane clumped isotopes reveal the formation mechanism of microbial methane. Science.

** Brosius, L., **K. Walter Anthony**, T. Lowell, A. Breckenridge, M. Jones, G. Grosse, M. Engram. Methane emissions from proglacial lakes: A synthesis study directed toward Lake Agassiz. Quaternary Science Reviews (in prep).

In press: none

2024

85 Engram, M. J., **Walter Anthony, K. M**. Synthetic Aperture Radar (SAR) detects large gas seeps in Alaska lakes. *Environmental Research Letters*, 19, 04403, doi. 10.1088/1748-9326/ad2b2a

2023

84 **Brosius, L.S., **Walter Anthony, K.M**., Treat, C.C., Jones, M.C., Dyonisius, M., Grosse, G. Panarctic lakes exerted a small positive feedback on early Holocene warming due to deglacial release of methane. *Commun Earth Environ* **4**, 271 (2023). https://doi.org/10.1038/s43247-023-00930-2

83 Jones, M., Grosse, G., Treat, C., Turetsky, M., **Walter Anthony, K. M**. and Brosius, L. Past permafrost dynamics can inform future permafrost carbon-climate feedbacks. *Commun Earth Environ* **4**, 272 (2023). https://doi.org/10.1038/s43247-023-00886-.

82 **Lotem, N., Pellerin, A., Gafni, A., **Walter Anthony, K**. and Sivan, O. Anaerobic oxidation of methane does not attenuate thermokarst lake CH_4 emissions. *Limnol. Oceanogr. 68, 1316-1330,* (2023) https://doi.org/10.1002/lno.12349.

81 **Gagné, K. R., Eckhardt, B.A., Walter Anthony, K.M., Barnes, D.L., Guerard, J.J. Dissolved organic matter from surface and pore waters of a discontinuous permafrost watershed in central Alaska reveals both compositional and seasonal heterogeneity. *Aquatic Sciences* 85, 31 (2023), https://doi.org/10.1007/s00027-022-00930-y

80 Waldrop, M. P., Chabot, C. L., Liebner, S., Holm, S., Snyder, D., Dillon, M., Doughlas, T. A., Leewis, M. C., **Walter Anthony, K**., McFarland, J. M., Conaway, C. H. Arp, C. D. Bondurant A., Tas, N., Mackelprang, R. Permafrost microbial communities and functional genes are structured by latitudinal and soil geochemical gradients. 2023. *ISME J,* https://doi.org/10.1038/s41396-023-01429-6

2022

79 Strauss, J., Laboor, S., Schirrmeister, L. Fedorov, A. N., Fortier, D. Froese, D. Fuchs, M., Gunther, F. Grigoriev, M., Harden, J., Hugelius, G., Jongejans, L. L., Kanevskiy, M. Kholodov, A., Kunitsky, V.,

Kraev, G., Lozhkin, A., Rivkina, E., Shur, Y., Siegert, C., Spektror, V., Streletskaya, I., Ulrich, M., Vartanyan, S., Veremeeva, A., **Walter Anthony, K**, Wetterich, S., Zimov, N., Grosse, G. 2022. Circum-Arctic Map of the Yedoma Permafrost Domain. *Cryospheric Sciences*, 10.3389/feart.2021.758360

78 Strauss, J, Bias, C., Sanders, T., Abbott, B., Schneider von Deimlingt, T., Voigt, C., Winkel, M., Marushchak, M., Kou,, D., Fuchs, M., Horn, M., Jongejans, L., Liebner, S., Nitzbon, J., Schirrmeister, L., **Walter Anthony, K. M**., Yang, Y., Zubrzycki, S., Laboor, S., Treat, C. and Grosse, G. A globally-relevant stock of soil nitrogen in the Yedoma permafrost domain. 2022 *Nature Communications* 13, 6074, https://doi.org/10.1038.

77 **Pellerin, A. N. Lotem, **K. Walter Anthony**, E. Russak, N. Hasson, H. Roy, J. P. Chanton, O. Sivan. Methane production controls in a young thermokarst lake formed by abrupt permafrost thaw. *Global Change Biology*, 28(10), 3206-3221. 2022. https://doi.org/10.1111/gcb.16151.

2021

76 **Kuhn, M. A., Varner, R. K., Bastviken, D., Crill, P., MacIntyre, S., Turetsky, M., **Walter Anthony, K**., McGuire, A. D., Olefeldt, D. 2021. BAWLD-CH_4: A Comprehensive Dataset of Methane Fluxes from Boreal and Arctic Ecosystems. *Earth Syst. Sci. Data*, 13, 5151-5189, https://doi.org/10.5194/essd-13-5151-2021

75 **Elder, C. D., Thompson, D. R, Thorpe, A. K., Chandanpurkar, H. Hanke, P., Hasson, N. James, S., Minsely, B., Pastick, N. J., Olefedlt, D., **Walter Anthony, K**., Miller, C. E. 2021. Characterizing methane emission hotspots from thawing permafrost. *Global Biogeochemical Cycles,* 10.1029/2020GB006922.

74 Strauss, J., Laboor, S., Schirrmeister, L. Fedorov, A. N., Fortier, D. Froese, D. Fuchs, M., Gunther, F. Grigoriev, M., Harden, J., Hugelius, G., Jongejans, L. L., Kanevskiy, M. Kholodov, A., Kunitsky, V., Kraev, G., Lozhkin, A., Rivkina, E., Shur, Y., Siegert, C., Spektror, V., Streletskaya, I., Ulrich, M., Vartanyan, S., Veremeeva, A., **Walter Anthony, K**, Wetterich, S., Zimov, N., Grosse, G. 2021. Circum-Arctic Map of the Yedoma Permafrost Domain. *Cryospheric Sciences*, 10.3389/feart.2021.758360

73 **Walter Anthony, K. M.**, Lindgren, P., Hanke, P., Engram, M., Anthony, P., Daanen, R. Bondurant, A., Liljedahl, A., Lenz, J., Grosse, G., Jones, B., Brosius, L., James, S., Minsley, B., Pastick, N., Munk, J. Chanton, J., Miller, C., Meyer, F. 2021. Decadal-scale hotspot CH_4 ebullition in lakes following abrupt permafrost thaw. *ERL* 16, 035010, https://dx.doi.org/10.1088/1748-9326/abc848.

72 **Sullivan, T. D., A. D. Parsekian, J. Sharp, P. J. Hanke, F. Thalasso, M. Shapely, M. Engram, **K. Walter Anthony**. 2021. Influence of permafrost thaw on an extreme geologic methane seep. *PPP* 1-19, DOI: 10.1002/ppp.2114

71 **Stolpmann, L., Coch, C., Morgenstern, A., Boike, J., Fritz, M., Herzschuh, U., Stoof-Leichsenring, K., Dvornikov, Y., Heim, B., Lenz, J., Larsen, A., **Walter Anthony, K**., Jones, B., Frey, K., and Grosse, G.: First pan-Arctic assessment of dissolved organic carbon in lakes of the permafrost region, *Biogeosciences*, 18, 3917–3936, *https://doi.org/10.5194/bg-18-3917-2021*, 2021.

70 ** Treat, C. C., M. C. Jones, L. Brosius, G. Grosse, **K. M. Walter Anthony**, S. Frolking. The role of wetland expansion and successional processes in methane emissions from northern wetlands during the Holocene. *Quaternary Science Reviews,* 257 (2021) 106864.

69 **Brosius, L., **K. M. Walter Anthony**, Treat, C., Lenz, J., Jones, M., Bret-Harte, M. S., Grosse, G. Spatiotemporal patterns of northern lake formation since the Last Glacial Maximum. *Quaternary Science Reviews,* 253 (2021) 106773

2020

68 Thalasso, F., **Walter Anthony, K.** Irzak, O., Chaleff, E. Barker, L., Anthony, P., Hanke, P. Gonzalez-Valencia, R. 2020. Technical note: Mobile open dynamic chamber measurement of methane macroseeps in lakes. *Hydrology and Earth System Sciences*. 24, 6047–6058, https://doi.org/10.5194/hess-24-6047-2020

67 **Heslop, J. K., **K. M. Walter Anthony**, M. Winkel, A. Sepulveda-Jauregui, K. Martinez-Cruz, A. Bondurant, G. Grosse, S. A. Liebner. 2020. A synthesis of methane dynamics in thermokarst lake environments. *Earth-Science Reviews* 210, 103365, doi.org/10.1016/j.earscirev.2020.103365

66 Estop-Aragones, C., D. Olefeldt, B. W. Abbot, J. Chanton, C. I. Czimczik, J. F. Dean, J. E. Egan, L. Gandois, M. H. Garnett, I. P. Hartley, A. Hoyt, M. Lupascu, S. M. Natali, J. A. O'Donnell, P. A. Raymond, A. J. Tanentzap, S. E. Tank, E. A. G. Schuur, M. Turetsky, **K. Walter Anthony**. 2020. Assessing the potential for mobilization of old soil carbon after permafrost thaw: A synthesis of ^{14}C measurements from the northern permafrost region. *Global Biogeochemical Cycles*, 34, 2020GB006672, doi.org/10.1029/2020GB006672.

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Lindgren, P., **Walter Anthony, K. M**., Meyer, F. J., Wirth, L., Nitze, I., Grosse, G. Lake Change in 11 Boreal and Arctic Study Regions in the Recent ~60 years and Associated Carbon Flux. Environmental Research Letters, Special Issue - Resiliency and Vulnerability of Arctic and Boreal Ecosystems to Environmental Change: Advances and Outcomes of ABoVE (in prep).

Walter Anthony, K., C. Edgar, C. Elder, A. Emond, M. Engram, E. Euskirchen, R. Daanen, K. Gagne, J Guerard, G. Grosse, P. Hanke, B. Jones, A. Liljedahl, J. Lenz, S. Liebner, F. Meyer, C. Miller, P. Lindgren, M. Winkel. Sub-permafrost methane seepage. *Nature Climate Change* (in prep).

Walter Anthony, K., C. Edgar, N. Hasson, T. Compano, C. Elder, E. Euskirchen, N. Hasson, C. Miller. Winter hotspot carbon emissions from an abrupt-thaw lake. *Nature Climate Change* (in prep).

Walter Anthony, K., Engram, M., Meyer, F., Lindgren, P., Chanton, J., Bruhwiler, L., Dlugokencky, E., Grosse, G. Reconciling methane ebullition emissions and isotopes in pan-arctic lakes with inverse atmospheric modeling. *Biogeosciences* (in prep).

Walter Anthony, K. M., N. Hasson, C. Edgar, X. Zhuang, P. Anthony, E. Russak, O. Sivan, A. Kholodov, E. Eurskirchen, S. Bret-Harte. Strong methane emissions from upland yedoma hillslopes, In prep, Nature.

Grosse, G., B. Jones, **K. M**. **Walter Anthony**. (in preparation for resubmission). Application of airborne LIDAR for mapping permafrost-related land surface features and processes in an Arctic lowland, NW Alaska. *Earth Surface Processes and Landforms* (in prep).

Grosse, G., B. Jones, **K. M**. **Walter Anthony**, L. Plug, V. Romanovsky. A temporally high-resolution lake drainage dataset from ice-rich permafrost lowlands on the Seward Peninsula, NW Alaska, for 1950-2008. *Remote Sensing of Environment* (in prep).

Grosse, G., **K. M**. **Walter Anthony** et al. Distribution and characteristics of thermokarst lakes in the Arctic and estimates of methane emissions. *Journal of Geophysical Research – Biogeosciences* (in prep).

Sepulveda-Jauregui, A. K. M. **Walter Anthony**, F. Thalasso. Anaerobic methane oxidation coupled to sulfate reduction and denitrification in arctic lakes. *Environmental Science and Technology* (in prep).

Datasets

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Stolpmann, L., Coch, C., Morgenstern, A., Boike, J., Fritz, M., Herzschuh, U., Stoof-Leichsenring, K., Dvornikov, Y., Heim, B., Lenz, J., Larsen, A., Walter Anthony, K., Jones, B., Frey, K., and Grosse, G.: Permafrost-Region Lake-DOC version1 Database (PeRL-DOCv1), PANGAEA [Dataset], *https://doi.org/10.1594/PANGAEA.932262*, 2021.

Anthony, K.W., P. Lindgren, P. Hanke, J. Cherry, and M.J. Engram. 2021. ABoVE: Aerial Photographs of Frozen Lakes near Fairbanks, Alaska, October 2014. ORNL DAAC, Oak Ridge, Tennessee, USA. https://doi.org/10.3334/ORNLDAAC/1845

Anthony, K.W., and P. Lindgren. 2021. ABoVE: Historical Lake Shorelines and Areas near Fairbanks, Alaska from 1949-2009. ORNL DAAC, Oak Ridge, Tennessee, USA. https://doi.org/10.3334/ORNLDAAC/1859

Anthony, K.W., P. Hanke, and P. Lindgren. 2021. ABoVE: Methane Ebullition Hotspots in Frozen Lakes near Fairbanks, Alaska, Oct 2014. ORNL DAAC, Oak Ridge, Tennessee, USA. https://doi.org/10.3334/ORNLDAAC/1861

Anthony, K. W. 2020. Methane ebullition hotspot point data locations in interior Alaska thermokarst lakes from April 2011 through October 2019. (https://arcticdata.io/catalog/view/doi%3A10.18739%2FA2NP1WK35) Arctic Data Center. doi:10.18739/A2NP1WK35 (https://doi.org/10.18739/A2NP1WK35).

Engram, M.J., **K.W. Anthony**, and F.J. Meyer. 2020. ABoVE: SAR-based Methane Ebullition Flux from Lakes, Five Regions, Alaska, 2007-2010. ORNL DAAC, Oak Ridge, Tennessee, USA. https://doi.org/10.3334/ORNLDAAC/1790

Brosius, L. **K. W. Anthony** et al. 2018. High-latitude Lake Basal Ages and Origins Compiled from Original Literature Sources, North America, Asia, Europe, 2000. *Arctic Data Center.* doi:10.18739/A24F1MH89

Strauss, Jens; Laboor, Sebastian; Fedorov, Alexander N; Fortier, Daniel; Froese, Duane; Fuchs, Matthias; Grosse, Guido; Günther, Frank; Harden, Jennifer W; Hugelius, Gustaf; Kanevskiy, Mikhail Z; Kholodov, Alexander L; Kunitsky, Victor V; Kraev, Gleb; Lapointe-Elmrabti, Lyna; Lozhkin, Anatoly V; Rivkina, Elizaveta; Robinson, Joel; Schirrmeister, Lutz; Shmelev, Denis; Shur, Yuri; Siegert, Christine; Spektor, Valentin; Ulrich, Mathias; Vartanyan, Sergey L; Veremeeva, Alexandra; **Walter Anthony, Katey M**; Zimov, Sergey A (2016): Database of Ice-Rich Yedoma Permafrost (IRYP). PANGAEA, https://doi.org/10.1594/PANGAEA.861733

F. Invited Presentations (selected):

Walter Anthony, K. M. [Invited]. Saint Anthony Falls Laboratory, Minneapolis, MN, Jan. 23, 2024

Walter Anthony, K. M. [Keynote]. Minnesota Earth Science Teachers Association conference, Plymouth, MN, Feb. 3, 2023

Walter Anthony, K. M. [Invited] Upland permafrost methane. AMPAC-Net workshop by ESA-NASA, Helsinki, Finland, Jan. 16-18, 2023.

Walter Anthony, K. M. [Invited] Permafrost Carbon Network, 2021 Annual Meeting, panelist on Paleo-permafrost Working Group; Nov. 17, 2021

Walter Anthony, K. M. [Invited] National Academy of Science, Identifying New Community-Driven Science Themes for NSF's Support of Paleo Perspectives on Climate Change (P2C2): A Workshop. Changes in permafrost and its carbon feedback to climate, June 21-23, 2021.

Walter Anthony, K. M. [Invited] Permafrost Carbon Network panelist, "Are increases in Arctic carbon emissions already occurring," Nov. 10, 2020

Walter Anthony, K. M. [Invited] Permafrost thaw and methane release from thermokarst lakes. UC Santa Barbara Bren School of Environmental Science & Management Seminar, Nov. 2, 2020.

Walter Anthony, K. M. [Invited] Speaker for NASA ESA joint initiative on Arctic Methane and Permafrost Challenge, European Polar Science Week. Oct. 27, 2020

Walter Anthony, K. M. [Invited] Acceleration of climate warming by abrupt permafrost thaw. National Academy of Sciences 157th Annual Meeting. Panelist and speaker in session hosted by former White House Science Advisor (Obama Administration), John Holdren: "Thawing Arctic Permafrost: Regional and Global Impacts." Apr. 26, 2020. https://bit.ly/157NAS

Walter Anthony, K. M. [Invited] Methane emissions from permafrost thaw in the Arctic. *Nobel Conference*, Gustavus Adolphus College, Saint Peter, MN. Sep. 24. 2019

Walter Anthony, K. M. [Invited]. Climate warming accelerated by abrupt permafrost thaw beneath lakes. Arctic21 Washington, D.C. Dec. 14, 2018.

Walter Anthony, K. M. [Invited]. Methane Cycling in Arctic Lakes. The Molecular Basis of Microbial One Carbon Metabolism "C1", *Gordon Research Conference*, Sunday River, Maine. July 31, 2018.

Walter Anthony, K. M. [Invited]. Permafrost loss, methane and carbon dioxide emission. *National Academy of Science Polar Research Board Meeting*, Washington DC, Nov. 17, 2016
Walter Anthony, K. M. [Invited]. Permafrost thaw and methane emissions from arctic lakes. *Alfred Wegener Institute, Potsdam, Germany*, June. 27, 2016.
Walter Anthony, K. M. [Invited]. Ice-trapped methane bubbles in northern lakes. *University of Wyoming*, Dec. 8, 2015.
Walter Anthony, K. M. [Invited]. Carbon cycling in arctic lakes. *University of Saint Thomas*, Saint Paul, MN. Oct. 9, 2015
Walter Anthony, K. M. [Invited]. Methane emissions from arctic lakes. *Gustavus Adolphus College*, Saint Peter, MN. Sep. 24, 2015
Walter Anthony, K. M. [Invited]. Climate change feedbacks associated with high latitude lakes. *University of Alaska Climate Change Seminar Series*, Sep. 16, 2015.
Walter Anthony, K. M. [Invited]. Carbon cycling and greenhouse gas emissions from northern lakes. *Connecting Nicollet County*, Saint Peter, MN, April 9, 2015.
Walter Anthony, K. M. [Invited]. Methane and Carbon Dioxide Emissions from 40 Lakes along a North-South Latitudinal Transect in Alaska. *AGU Fall Meeting*, December 2014, San Francisco, CA.
Walter Anthony, K. M. [Invited]. Thawing permafrost and its role in climate change. NSF Ice-Snow-Water Workshop, Hosted by the *World Bank, Washington DC*, November, 2014.
Walter Anthony, K. 2014. [Invited & Rapporteur]. Methane emissions from 50 years of thermokarst in Alaskan lakes. THAW 2014. *Thermokarst Aquatic Workshop*. Laval University, Quebec City.
Walter Anthony, K. 2014. [Invited] Methane ebullition in northern lakes. *Science Museum of Minnesota. St. Croix Watershed Research Station*.
Walter Anthony, K. 2013. [Invited] Bubble trouble: methane emissions from lakes. *Lakehead University, Thunder Bay, Ontario, Canada*
Walter Anthony, K. 2013. [Invited] Methane cycling in northern lakes. *University of Minnesota, Dept. Ecology, Evolution, and Behavior*
Walter Anthony, K. 2012. [Invited]. Methane seepage from lakes along boundaries of thawing permafrost and melting glaciers. *SMAP/ICESat-2 Joint Mission Applications Tutorial, ASF & NASA*.
Walter Anthony, K. 2012. [Invited]. Geologic methane seepage through the cryosphere cap. *IARC Seminar Series, UAF.*
Walter Anthony, K. 2012. [Invited]. Methane emissions from arctic lakes- the role of permafrost thaw and glacier melt. *University of Alaska Climate Change Seminar Series, UAF SFOS-Juneau*.
Walter Anthony, K. 2012. [Invited]. Bubble trouble - methane in Alaska's lakes. *Undergraduate Research and Scholarly Activity (URSA), UAF Research Showcase*.
Walter Anthony, K. 2011. [Invited]. Methane bubbling out of lakes around Barrow. *Barrow Arctic Science Consortium Schoolyard Project*, Samuel Simmonds Hospital Common Room.
Walter Anthony, K. 2011. [Invited]. Regional scale variability in methane emissions from thermokarst lakes. *Geological Society of America*, GSA Annual Meeting, Minneapolis, MN.
Walter Anthony, K. [Invited]. Methane emissions from 50 years of thermokarst in Alaskan lakes. *Soil Science Society of America*, San Antonio, Texas.
Walter Anthony, K. 2011. [Invited]. Methane ebullition from thermokarst lakes in the Arctic. Physics of Sustainable Energy II: Using Energy Efficiently and Producing It Renewably; *The American Physical Society's Forum on Physics and Society* Topical Group on Energy Research and Application & The American Association of Physics Teachers, University of California, Berkeley.
Walter Anthony, K. 2010. [Invited]. Methane ebullition in thermokarst lakes in the Arctic, Nov. 27, 2010, *Helsinki University*, Helsinki, Finland.
Walter Anthony, K. 2010. [Invited]. Biogenic and Geologic Methane Release from Arctic Lakes. *The Alaska Chapter of the American Institute of Professional Geologists*, Alpine Lodge Hotel, Fairbanks, Alaska.
Walter Anthony, K. 2010. [Keynote speaker]. Positive and negative feedbacks to climate change associated with methane emissions and carbon dynamics in the thermokarst-lake cycle. *5th International Workshop on C/H2O/Energy balance and climate over boreal and arctic regions with special emphasis on eastern Eurasia*, 11-13 November 2010, Wageningen, the Netherlands.
Walter Anthony, K. 2010. [Invited]. Methane emissions from arctic lakes. ACCAP Webinar Series.

Walter Anthony, K. M., G. Grosse, B. M. Jones. 2009. [Invited] Positive and negative feedbacks to climate change associated with methane emissions from arctic permafrost systems. Eos Trans. *AGU*, Fall Meet. Suppl., Abstract B43F-06.

Walter Anthony, K. 2009. [Invited]. Methane from Arctic Lakes: Observations from 60 lakes in Alaska and Siberia, *Max Planck Institute for Microbiology*, Marburg, Germany.

Walter, K. M. 2009. [Invited]. Methane from arctic permafrost: Feedbacks to global warming. *National Geographic Society*, Washington, D.C.

Walter, K. M. 2008. [Invited]. Methane (CH4) bubbling from northern lakes: Contributions to the global methane budget. *USGS-DOE Methane hydrates workshop*, Massachusetts Institute of Technology, Cambridge, MA.

Walter, K. 2008. [Invited]. Methane bubbling from northern lakes: Contributions to the global methane budget. *University of California, Merced*.

Walter, K. 2008. [Invited]. Methane bubbling from northern lakes. *University of California, Davis*.

Walter, K. 2008. [Invited]. Global lake methane emissions. *University of Nevada, Reno*.

Walter, K. 2008. [Invited]. Climate change and energy: Methane in northern lakes. *Saint Olaf College,* Northfield, Minnesota.

Walter, K. 2007. [Invited, panelist]. Links between Freshwater and Carbon in the Arctic: Opportunities for International Collaborations. *Arctic Forum*, ARCUS, Washington DC.

Walter, K. 2007. [Invited]. IPY: PanArctic Lake Ice Methane Monitoring Network (PALIMMN). *PYRN,* Saint Petersburg, Russia.

Walter, K. 2007. [Invited]. Methane (CH_4) bubbling from northern lakes: Contributions to the global methane budget, *Harvard University*.

Walter, K. M., F. S. Chapin III, S. A. Zimov, J. P. Chanton. 2004. [Invited]. Global warming feedbacks of methane bubbling along expanding North Siberian lake margins. *NOAA's Climate Monitoring and Diagnostic Laboratory* first annual meeting, Boulder, Colorado.

Walter, K. M., F. S. Chapin III, S. A. Zimov. 2003. [Invited]. Methane biogeochemistry in thermokarst lakes of NE Siberia. *Alfred-Wegener Institute for Polar and Marine Research*, Potsdam, Germany.

G. Other Scientific Presentations (Selected):

Liu, J., Young. E. Pellerin, A., Sivan, O., Valentine, D., **Walter Anthony, K.** Methane clumped isotopes reveal the formation of microbial methane. Goldschmitdt Conference on Tracing the formation of microbial methane using climped isotopes. .2024.

Heslop, ICOP 2024

Sivan, Orit, André Pellerin, Noam Lotem, Efrat Eilani Russak, Yarden Gerera, Katey Walter Anthony. The importance of anaerobic oxidation of methane in thermokarst lakes. EGU General Assembly Conference Abstracts, 2023, pp. EGU-7395

Elder, David R Thompson, Latha Baskaran, Ingmar Nitze, Guido Grosse, Nicholas Hasson, Katey M Walter Anthony, Charles E Miller. The impacts of regional Arctic lake change on remotely sensed methane emission hotspots in Alaska, USA. 2023. EGU23-10051

Parsekian, A., R. Rangel, M. Engram, Ohara, B. Jones, M. Kanevskiy, Bergstedt, **K. Walter Anthony**, *Ground-Penetrating Radar Observation of Lake Ice Properties*, session Changing Cryosphere: The Rocky Mountains and Beyond, Rocky Mountain GSA, May 2023.

Jentzsch, Katharina, Lona van Delden, Lona, Matthias Fuchs, Kathleen Hall, Vasilii Petrenko, Clayton Elder, **Katey Anthony**, Nicholas Hasson, Claire Treat. EUCOP2023. Methane fluxes from the Arctic – an expert survey of chamber measurement techniques.

Scholer, M., M. Zhu, K. Hall, M.L. Buursink, K.M. Walter Anthony, T.S. Weber, **V.V. Petrenko.** AGU Fall Meeting (Chicago, 2022). *Improving the Characterization of Geologic Methane Emissions Across the United States: Preliminary Results from New Microseepage Measurements in the San Juan Basin.*

Zhu, M., M. Scholer, **K. M Walter Anthony**, A. C. Ihle, W. Zheng, K. Hall, M. L. Buursink, T. S. Weber, V. V. Petrenko. AGU Fall Meeting (Chicago, 2022). *Quantifying natural geologic methane emissions from microseepage in the Raton Basin, Colorado and New Mexico, United States.*

Hall, K., M.P. Stock, M. L. Buursink, H. Piao, M. Zhu, L. Kunhardt, M. Scholer, T. S. Weber, **K. M. Walter Anthony**, V. V. Petrenko. *AGU Fall Meeting (Chicago, 2022). *New Measurements from Appalachian and Michigan Sedimentary Basins Imply that Geologic Methane Emissions Are Less Widespread than Previously Assumed*.

Piao, H., K. Hall, M. L. Buursink, T. S. Weber, M. Scholer, M. Zhu, **K. M. Walter Anthony**, and V. V. Petrenko. *AGU Fall Meeting (Chicago, 2022). *Quantifying Natural Geologic Methane Emissions from Microseepage in the Denver-Julesburg Basin, Colorado, United States.*

Hasson, N., Elder, C., **Walter Anthony K. M.,** Miller, C. E. Anthony, P., Peterson, S., Daanen, R. Characterizing terrestrial thermokarst methane hotspots using Very Low Frequency electromagnetic carbon flux coupling. NASA ABoVE Science Team Meeting, May 9-13, 2022, Fairbanks Alaska. Poster #48.

Rangel, R., Parsekian, A., Engram, M., Ohara, N. Jones, B., Kanevsky, M., Bergstedt, H., **Walter Anthony, K. M**. Arctic-Boreal Lake Methane Ebullition Estimation using Ground Penetrating Radar. AGU Fall Meeting, Dec. 13, 2021. Poster NS15A-0361.

Walter Anthony, K. M., T. Schneider von Deimling, I. Nitze, S. Frolking, P. Anthony, R. Daanen, A. Edmond, P. Lindgren, G. Grosse Climate warming accelerated by abrupt permafrost thaw beneath lakes. B22D-01. AGU Fall Meeting, Dec. 9-14 2018, Washington, D.C. [**Presentation selected as an AGU highlight by the journal *Nature***, https://www.nature.com/articles/d41586-018-07751-w].

Engram, M, J., **Walter Anthony, K. M**., Sachs, T., Kohnert, K., Serafimovich, A., Grosse, G. and Meyer, F. J. Quantifying methane ebullition from northern lakes with space-borne synthetic aperture radar (SAR). B12C-06. AGU Fall Meeting, Dec. 9-14 2018, Washington, D.C. [**Presentation selected as an AGU highlight by the journal *Nature***, https://www.nature.com/articles/d41586-018-07751-w].

Walter, Anthony, K. M. Reconciling lakes emissions in the Arctic methane budget, International Workshop to Reconcile Northern Permafrost Region Methane Budgets, Seattle, WA, Mar. 7-9, 2017.

Walter Anthony, K. M. Permafrost thaw and methane emissions from arctic lakes. International Arctic Research Center, University of Alaska Fairbanks. Feb. 16, 2017.

Walter Anthony, K. M. Methane emissions from arctic lakes. WERC Seminar Series, University of Alaska Fairbanks. Feb. 12, 2016.

Walter Anthony, K. M., Daanen, R., Anthony, P., Schneider von Deimling, P., Ping, C.-L., Chanton, J., Grosse, G. Present-day permafrost carbon feedback from thermokarst lakes. Eleventh International Conference on Permafrost. Potsdam, Germany, June 20, 2016.

Walter Anthony, K. M, Grosse, G., Anthony, P., Jones, M., Davydov, S., Zimov, S. Reconciling carbon-stock estimates for the Yedoma region. Eleventh International Conference on Permafrost. Potsdam, Germany, June 20, 2016.

Walter Anthony, K. M. Invited speaker Chefernak Sr. High School, Chefernak, Alaska (Oct. 13, 2015)

Liljedahl, A., **K. M. Walter Anthony,** V. Romanovsky, R. Danaan, D. Barnes. Presentation to Fairbanks community on permafrost, hydrology and methane in Goldstream Valley (Sep. 15, 2015)

Walter Anthony, K. M. Invited speaker to G11/12 at Nome-Beltz Jr. Sr. High School, Nome, Alaska (Sep. 9, 2015)

Walter Anthony, K. M. Methane emissions from arctic lakes. Bering Land Bridge National Park and Preserve and University of Alaska NW Campus, Nome (Sep. 3, 2015)

Walter Anthony, K. M., S. A. Zimov, G. Grosse, M. C. Jones, P. Anthony, F. S. Chapin III, J. C. Finlay, M. C. Mack, S. Davydov, P. Frenzel, S. Frolking. Shift of thermokarst lakes from methane source to climate-cooling carbon sink. AGU Fall Meeting, December 2014, San Francisco, CA.

Anthony, P. **K. M. Walter Anthony**, G**.** Grosse, J**.** Chanton**.** Methane seeps along boundaries of arctic permafrost thaw and melting glaciers. AGU Fall Meeting, December 2014, San Francisco, CA.

Heslop, J., **K. M. Walter Anthony**, A. Sepulveda-Jauregui, K. Martinez-Cruz. Correlating Permafrost Organic Matter Composition and Characteristics with Methane Production Potentials in a First Generation Thermokarst Lake and Its Underlying Permafrost Near Fairbanks, Alaska, USA. AGU Fall Meeting, December 2014, San Francisco, CA.

Walter Anthony, K. M., P. M. Anthony, G. Grosse, J. Chanton. Methane seeps along boundaries of receding glaciers in Alaska and Greenland, American Geophysical Union (AGU) Fall Meeting, 3-7 December 2012, San Francisco, California, USA.

Anthony, P. **K. M. Walter Anthony**, M. Engram, P. Regmi, A. Strohm, G. Grosse. Using semi-automated bubble traps, bubble survey transects, and point process models to understand ebullition spatial heterogeneity in thermokarst lakes. Methane seeps along boundaries of receding glaciers in Alaska and Greenland, American Geophysical Union (AGU) Fall Meeting, 3-7 December 2012, San Francisco, California, USA.

Grosse, G., B. M. Jones, B. Sannel, C. Arp, **K. Walter Anthony**, V. Romanovsky, S. Wullschlaeger. A synthesis of thermokarst and thermo-erosion process rates, American Geophysical Union (AGU) Fall Meeting, 3-7 December 2012, San Francisco, California, USA.

Walter Anthony, K. M. Geologic methane seepage through the cryosphere cap, IARC Seminar Series.

Regmi P., G. Grosse, M. C. Jones, B. Jones, **K. Walter Anthony**. 2011. Potential Application of TerraSAR-X Backscatter and Landsat-based NDVI for Characterizing Drained Thermokarst Lake Basin Dynamics on the Seward Peninsula, Alaska. American Geophysical Union (AGU) Fall Meeting, 5-9 December 2011, San Francisco, California, USA. C41B-0397.

Parsekian, A. B. Jones, G. Grosse, M. C. Jones, **K. M. Walter Anthony**, L. D. Slater. 2011. Floating vegetation mats on thermokarst lake margins, Seward Peninsula, Alaska, USA. AGU Fall Meeting 2011, San Francisco. C52A-04.

Engram, M., **K. M. Walter Anthony**, F. J. Meyer, G. Grosse. 2011. Quantifying methane ebullition in thermokarst lakes with spaceborne synthetic aperture radar. AGU, Remote Sensing of the Cryosphere Session, 8 December 2011, San Francisco, CA. C43B-02.

Walter Anthony, K., T. H. Culhane, C. Koplin, A. Low, C. Pape, Improving Cold Region Biogas Digester Efficiency. Denali Commission Public Forum on the Emerging Energy Technology Grant. Juneau, Alaska. February 14-15, 2011.

Brosius, L., **K. M. Walter Anthony**, G. Grosse, M. Jones. The relationship of emitted δD-CH_4 and permafrost δD-H2O in thermokarst lakes: implications for past atmospheric CH_4 budgets. INQUA Congress, Bern, Switzerland, July 21-27, 2011.

Jones, M.C., **K. M. Walter Anthony**, G. Grosse, L. A. Brosius. new bottom-up estimate of peatland contribution to past atmospheric methane concentrations. INQUA Congress, Bern, Switzerland, July 21-27, 2011.

Jones, M.C., **K. M. Walter Anthony**, G. Grosse, B. Jones, L. Farquharson. Linking carbon dynamics in thermokarst lakes and drained basins to Holocene climate change. INQUA Congress, Bern, Switzerland, July 21-27, 2011.

Pape, C., **K. M. Walter Anthony**, Energy from Psychrophilic Bacteria: A Cold-Region Alternative for Biogas, ACEP Community Energy Lecture Series, Fairbanks, Alaska, June 21, 2011.

Walter Anthony, K. 2010. Panarctic Lake Ice Methane Monitoring Network, Dec. 17, 2010, Abisko Field Station, Abisko, Sweden.

Walter Anthony, K., T. H. Culhane, C. Koplin, L. McFadden, A. Low. Improving Cold Region Biogas Digester Efficiency. Alaska Rural Energy Conference. Fairbanks, Alaska. April 27-29, 2010.

Walter Anthony, K., T. H. Culhane, C. Koplin, L. McFadden, A. Low. Improving Cold Region Biogas Digester Efficiency. Alaska Forum on the Environment. Anchorage, Alaska. February 8-12, 2010.

Farquharson, L. M., **K. M. Walter Anthony**, N. H. Bigelow, G. Grosse, M. E. Edwards. 2010. Holocene thermokarst lake formation and development within icy organic rich permafrost. Poster session C34: The fate and legacy of permafrost: geochemical, geophysical and geomorphic aspects. AGU fall meeting.

Geai, M-L, **K. M. Walter Anthony**, G. Grosse. Climate Change and Methane Emissions: Pan Arctic Lake Ice Methane Monitoring Network (PALIMMN). International Polar Year Conference, Oslo, Norway, 8-12 June, 2010.

Grosse, G. **K. M. Walter Anthony**, V. Romanovsky, S. Marchenko, B. Jones, L. Plug, M. Edwards. Pan-Arctic thermokarst lakes, methane emissions, and future permafrost thaw. International Polar Year Conference, Oslo, Norway, 8-12 June, 2010.

Grosse, G., B. Jones, **K. M. Walter Anthony**, V. Romanovsky, S. Marchenko Classification of Lakes in Pan-Arctic Permafrost Regions. Third European Conference on Permafrost, Longyearbyen, Svalbard, Norway, June 13-17, 2010.

Nolan, J., A. Parsekian, L. Slater, L. Plug, **K. M. Walter Anthony**, G. Grosse. 2010. Thaw Bulb Dimension Imaging Using Continuous Resistivity Soundings, Seward Peninsula, Alaska. State of the Arctic Conference, Miami, Florida.

Walter, K. M., G. Grosse, J. Finlay, S. Chandra, M. C. Mack. Disappearing permafrost and the response of Arctic lakes. Advancing the Science of Limnology and Oceanography Meeting, 25-30. 2009, Nice, France.

Walter Anthony, K. M., S. A. Zimov. 2009. Greenhouse gas release from arctic permafrost: positive feedback to climate warming. Eos Trans. AGU, Fall Meet. Suppl., Abstract U44A-02.

Brosius, L. E., **K. M. Walter Anthony**, J. Chanton. 2009. Determining organic matter sources to CH4 production and bubbling from Alaskan lakes using stable isotopes and radiocarbon ages. Eos Trans. AGU, Fall Meet. Suppl., Abstract.

Grosse, G., **K. Walter**, L. Plug, V. Romanovsky, M. Edwards, L. Slater. 2009. Thermokarst dynamics and related carbon cycling in ice-rich permafrost in NW Alaska. 2nd North American Carbon Program (NACP) All Investigator Meeting, 17-20 Feb 2009. San Diego, USA.

Grosse, G., **K. M. Walter Anthony**, V. E. Romanovsky, L. Plug, B. M. Jones, M. E. Edwards. 2009. Negative climate feedbacks from surface permafrost degradation in the continuous permafrost zone – Thermokarst lakes on the run. Eos Trans. AGU, Fall Meet. Suppl., Abstract U44A-07.

Jones, B. M., G. Grosse, **K. M. Walter Anthony**, L. Plug. 2009. Thermokarst lake expansion and drainage in continuous permafrost, northern Seward Peninsula, Alaska, USA. Eos Trans. AGU, Fall Meet. Suppl., Abstract U41C-0058.

Nolan, J.T., L. D. Slater, A. Parsekian, L. J. Plug, G. Grosse, **K. M. Walter Anthony**. 2009. Thaw bulb dimensions determined using electrical imaging across thermokarst lakes, Seward Peninsula, Alaska. Eos Trans. AGU, Fall Meet. Suppl., Abstract NS23A-1123.

Chanton, J., **K. M. Walter Anthony**, J. Prater, G. Whiting. 2009. Contrasting natural abundance radiocarbon signatures of methane released upon permafrost decomposition. Eos Trans. AGU, Fall Meet. Suppl., Abstract B44B-04.

Walter, K. M., D. Vas, L. Brosius, G. Grosse. 2008. Methane from Arctic Lakes: Observations from 50 lakes in Alaska and Siberia. Eos Trans. AGU, 89(53), Fall Meet. Suppl., Abstract B24A-05.

Nolan, J, A. Parsekian, L. Slater, L. J. Plug, G. Grosse, **K. Walter**. 2008. Characterization of ice Content in Permafrost Soils on the Seward Peninsula, Alaska Using Induced Polarization. Eos Trans. AGU, 89(53), Fall Meet. Suppl., Abstract NS12A-05.

Plug, L. J., **K. Walter**, G. Grosse, P. Anthony, M. Smith. 2008.Testing a numerical model for thermokarst lake expansion using morphologic measurements, N. Seward Peninsula, Alaska. Eos Trans. AGU, 89(53), Fall Meet. Suppl., Abstract: C22A-07.

Grosse, G., M. Tillapaugh, V. E. Romanovsky, **K. M. Walter**, L. J. Plug. 2008. Spatial dynamics of thermokarst and thermo-erosion at lakes and ponds in North Siberia and Northwest Alaska using high-resolution remote sensing, Eos Trans. AGU, 89(53), Fall Meet. Suppl., Abstract C13B-05.

Walter, K., D. Vas, L. Brosius, S. Sarkar, G. Grosse. Reducing uncertainties in estimates of methane bubbling from arctic lakes, American Geophysical Union Meeting, San Francisco, CA December 2007.

Walter, K. M. Edwards, G. Grosse, T. Chapin, S. Zimov, S. Sarkar, L. Smith, L. Plug. IPY: Impacts of permafrost degradation on methane emissions from arctic lakes, ARCUS 2007, Washington D.C.

Walter, K. M., F. S. Chapin III, S. A. Zimov, D. Draluk, J. P. Chanton. 2004. Global warming feedbacks of methane bubbling along expanding North Siberian lake margins. International Boreal Forest Research Association (IBFRA). Poster. *Honorable mention for best poster presentation***.**

Walter, K. M., F. S. Chapin III, S. A. Zimov, D. Draluk, J. P. Chanton. 2004. Global warming feedbacks of methane emissions (bubbling) from melting permafrost along expanding North Siberian lake margins. American Society of Microbiology, Alaska Chapter Annual Meeting. *First place award for student presentations***.**

Walter, K. M., F. S. Chapin III, S. A. Zimov, D. Draluk. 2003. The significance of methane ebullition. American Geophysical Union Meeting, San Francisco, California. Presentation. *Award for outstanding student paper***.**

Walter, K. M., F. S. Chapin III, S. A. Zimov. 2003. Methane production and emission from thermokarst lakes in NE Siberia. Max Planck Institute for Microbiology, Marburg, Germany. Presentation.

Walter, K. M., F. S. Chapin III, D. White. 2002, March. Lake ecosystems in transition: implications for CH_4 and CO_2 flux. Alaska Branch of the American Society for Microbiology, Annual Chapter Meeting, Fairbanks, Alaska. Presentation. *First place award for student presentations*.

SERVICE

H. Professional Service

National Academies of Sciences, Engineering and Medicine. Member of the Committee on Atmospheric Methane Removal: Development of a Research Agenda. Feb. 2023- Dec. 32, 2024.

United States White House, Office of Science and Technology Policy, invited speaker at the Roundtable on Countering Delayism and Communicating the Urgency of Climate Action, Feb. 24, 2022. Deputy Director for Climate & Environment, Jane Lubchenco

National Academy of Sciences, Polar Research Board - board member Sep. 2013 – June 2019

United States White House, meeting with White House Science Advisor, John Holdren Aug. 29, 2015, IARC UAF

Manuscript reviews for refereed journals: *Science, Nature Geoscience, PNAS, PlosOne, Journal of Geophysical Research-Biogeosciences, Journal of Geophysical Research-Atmospheres, Biogeochemistry, Geobiology, JAWRA, Limnology & Oceanography, Limnology & Oceanography: Methods, Global Biogeochemical Cycles, Philosophical Transactions of the Royal Society A, Aquatic Botany, NICOP, UNEP, AMAP, others.* 2007-present.

Proposal reviewer: *NSF, NASA, NOAA Climate Program Office, ALW Klimaatvariabiliteit, Royal Society of New Zealand Marsden Fund, UAF Global Change Student Grant, others.* 2007-present.

ESRI Storymaps. GRID/UNEP Rapid Response Assessment (RRA) on coastal and offshore permafrost; Collaboration with Scott Dallimore, Aug. 31, 2020. https://storymaps.arcgis.com/stories/827c559cd1bd4fd9aa8628058a4c658f

Methane on Earth HWK Study group, Sep. 2018-present

International Permafrost Association, member 2007 to present

ABCFlux v2, collaborator May 2023

Permafrost Pathways, collaborator on ABC flux, May 2023 to present, https://permafrost.woodwellclimate.org/

Q-Arctic, collaborator May 2023 to present, https://q-arctic.net/

GreenFeedback, collaborator May 2023 to present**,** https://eu-greenfeedback.com/

NASA ABoVE, member of Scientific Team, Oct. 2015-present

Permafrost Carbon Network, member 2014-present. www.permafrostcarbon.org

Vulnerability of Permafrost Carbon Research Coordination Network Synthesis Group, sponsored by NSF, World Climate Research Programme, USGS, DOE. 2011-2014.

PAGE21 Changing Permafrost in the Arctic and its Global Effects in the 21st Century, European Commission. Scientific advisory committee, 2011-present.

POLARIS Project Summer Field School in Cherskii, Russia, Instructor in NSF sponsored short summer course for U.S. and Russian undergraduate students, 2007-2009.

National Center for Ecological Analysis and Synthesis (NCEAS) for the "Toward an adequate quantification of CH_4 emissions from land ecosystems: Integrating field and in-situ observations, satellite data, and modeling." 2006-2009.

Arctic Council, AMAP/CliC/IASC Arctic Carbon Cycle Assessment Workshop, Seattle. Invited participant, February 2007.

Alaska Forum on the Environment: Invited speaker and panelist on permafrost thaw and changes in arctic lakes in Climate Change Session, Anchorage, Alaska, February 2007.

Royal Society/ Novartis Foundation Discussion Meeting on Methane, Ozone and Environmental Change, London England, Invited presentation on Methane emissions from arctic lakes: present and future contributions to the global atmospheric methane budget. November 15, 2006.

NSF SEARCH CHAMP Scientific Steering Committee, 2006.

U.S. Senate, Transatlantic Symposium on How Changes in the Arctic Climate are Affecting the Rest of the World, invited presentation on Permafrost Thaw in the Arctic; hosted by the Royal Norwegian Embassy and EESI, June 15, 2006.

The Evolving Arctic Workshop Series: Hydrologic Responses to Degrading Permafrost, Aug. 2005. International Arctic Research Center, Fairbanks, Alaska. One of three invited student participants. Appointed leadership and coordination of writing the section report for the workshop.

NSF Russian-American Initiative on Land-Shelf Environments in the Arctic (RAISE) Synthesis Workshop, St. Thomas, USVI. June 2005. Presentation. One of two students. Invitee.

NSF Arctic System Science (ARCSS) Program Synthesis Retreat, Lake Tahoe, CA. August 2004. One of three invited student participants. Contribution to synthesis paper for publication.

American Water Resources Association (AWRA), 2004. Alaska Chapter Annual Meeting. Fairbanks, Alaska, Invited Presentation.

NSF ARCSS All-hands workshop, Seattle, WA. Presentation, Rapporteur, February, 2002.

I. Public Service

Halal.il and Olam_il, in-the-field interview with Israeli brothers, Ariel and Jonathan Haresh, for global Hebrew audiences Instagram videos about thermokarst lake methane, March 26, 2024

EOS, Big Trail Lake research featured, April 26, 2023. Interviews and article by Jenessa Duncombe. https://eos.org/features/hunting-for-methane-hot-spots-at-the-top-of-the-world

Biologos, interview with Colin Hoogerwerf about thermokarst lakes and climate change in the Arctic. Nov. 10, 2022. https://biologos.org/podcast-episodes/katey-walter-anthony-science-faith-thermokarst-lakes

Counterpunch, interview with John Hawkins about Chasing Lakes, Nov. 1, 2022. https://www.counterpunch.org/2022/11/11/tiny-bubbles-from-the-permafrost-an-interview-with-ecologist-katey-walter-anthony/

NASA's Expeditions blog, interview and filming at Big Trail Lake with Peter Griffith, Elizabeth Hoy, Katie Jepson and Sofie Bates, 9/21/22**.**

Alaska Gateway School District, spent a day with K-12 Tok school science teacher, Andrea Braatz, showing her my research on permafrost thaw and training her in measurements of greenhouse gas fluxes in lakes near Tok, Alaska, 9/12/22.

Transmedia Vision Inc. interview and filming of thermokarst methane in interior Alaska for climate restoration documentary film entitled, 'Back To Our Future' with John Bowey; 8/18/22

Financial Times, Interview with Leslie Hook about the permafrost carbon feedback. Friday, July 8, 2022.

Yale University, interview for Climate Crocks with Peter Sinclaire, https://climatecrocks.com/2022/06/08/katey-walter-anthony-on-science-and-faith/

Alaska Daily News and ***Fairbanks Daily News*** *Miner*, Ned Rozell. https://www.adn.com/alaska-news/science/2022/06/04/uaf-scientists-memoir-encompasses-climate-study-and-her-personal-spiritual-journey/ and https://www.newsminer.com/features/sundays/alaska_science_forum/scientist-s-memoir-captures-the-world-of-cold-lakes-and-hot-research/article_1aae5fbe-e392-11ec-bb85-4b9563bf5c6a.html

Newsweek, interview with Hanna Osborne about methane sinkholes in the Arctic, May 16, 2022. https://www.newsweek.com/methane-arctic-sinkholes-lakes-emissions-climate-change-1710842

National Security This Week on KYMN Radio. May 25, 2022 interview with Jon Olson. https://kymnradio.net/2022/05/25/national-security-this-week-with-dr-katey-walter-anthony-and-janelle-sharp/

World Christian Broadcasting, interview with Paul Ladd about Chasing Lakes and methane research, May 23, 2022. https://www.christianpodcast.com/episode/katey-walter-anthony-arctic-explorer/

Synapse School, Menlo Park, CA. Teachers Anna Chang and Mike Lee, Question and answer session with 7th & 8th graders class on Alaska climate and permafrost, May 16, 2022.

Curiousmans Podcast. Interview with Mathew Crawford and discussion of Chasing Lakes, May 9, 2022 https://podcasts.apple.com/us/podcast/thecuriousmanspodcast/id1369458829?i=1000561812367

Project Save the World, Apr. 21, 2022 interview about permafrost with Metta Spencer. Https://tosavetheworld.ca/episode-440-methane-and-permafrost/

This is Not Church Podcast, Interview about Chasing Lakes, permafrost and methane with Jon and Nat Turney; May 23, 2022; https://thisisnotchurchpodcast.podbean.com/e/chasing-lakes-a-conversation-with-katey-walter-anthony/

BYU Radio *interview with Marcus Smith for Constant Wonder, March 21, 2022*

White House Office of Science and Technology Policy, one of 16 scientists and climate change communications at an event sponsored by Jane Lubchenco, Deputy Director for Climate and Environment. The event focuses on understanding the costs and risk associated with delaying action on climate change. February 24, 2022.

KTVF Channel 11, Fairbanks, interview with Richard Atkin about arctic methane, Feb. 15, 2022

New Yorker, interview about work in Cherskii, permafrost and methane, Joshua Yaffa, October 22, 2021

Sierra Magazine, interview about permafrost thaw, methane and infrastructure, October 22, 2021, Adam Federman. https://www.sierraclub.org/sierra/abrupt-permafrost-thaw-has-scientists-worried?mostpopular=true

NHK Japan Broadcasting, interview about lake methane for TV show, *Unbelievable*. Oct. 8, 2021.

BBC Studios, featured in documentary film, Frozen Planet II, filming at interior Alaska lakes, Sep. 17-18, 2021, Director Daniel Turner

David Attenborough, featured in documentary film, *Earthshot: How To Save Our Planet,* with Silverback, Earthshot Studios, Fairbanks, Alaska Feb. 27-Mar. 1, 2021

PBS NOVA, featured in documentary film on Arctic climate change. Fairbanks, Alaska, Director Al Blane. Mar. 14-15 2021. https://www.pbs.org/video/arctic-sinkholes-preview-lamink/

Carbon: An Unauthorized Biography, documentary film with Director, Niobe Thompson, Mar. 19, 2021. https://vimeo.com/663981105

Australian Broadcasting Company's three-part series "The Poles Revealed (filmed May 22, 2021), with Director, Anja Taylor.

Disney/National Geographic, filmed commercial for Epson Printers featuring climate change in Alaska, (Palmer, Alaska) Feb. 13-16, 2021

National Geographic, interview with Maya Wei-Haas about Siberian Craters, Sep. 9, 2020

KPFA Community Powered Radio, Berkeley, CA, interview for Sinkoles in Siberia with Sabrina Jacobs. Sep. 10, 2020

NASA Earth Expedition blog, "Lasers and Bubbles: Solving the Arctic's methane puzzle" contributions from N. Hasson, P. Hanke, and K. Walter Anthony (2020). https://blogs.nasa.gov/earthexpeditions/2020/06/18/lasers-and-bubbles-solving-the-arctics-methane-puzzle/

Benilde-St. Margarets Junior High School. Worked with 8th graders at Benilde-St. Margarets Junior High School in St. Louis Park, MN on their climate change research project focusing on how methane from aquatic ecosystems is affecting Minnesota's environment, March-April, 2020.

National Academy of Sciences 157th Annual Meeting. Panelist and speaker in session: "Thawing Arctic Permafrost: Regional and Global Impacts." Apr. 26, 2020. https://bit.ly/157NAS.

Canadian Broadcasting Corporation, presented in special episode of The Nature of Things entitled, "State of the Planet." Filming with Yap Planet Productions was March 5, 2020.

60 Minutes Australia. Interviewed and filmed for "Fire and Ice", February 20-24, 2020. https://youtu.be/zuiQtLAUi6U

National Geographic *podcast on Beavers; interviewed for podcast. Nov. 12, 2019* https://podcasts.apple.com/us/podcast/march-of-the-beaver/id1466697207?i=1000456565847

National Geographic Magazine, article on Arctic Permafrost by Craig Welch; interviewed and featured in article. Aug. 2019 https://www.nationalgeographic.com/environment/2019/08/arctic-permafrost-is-thawing-it-could-speed-up-climate-change-feature/

Leonardo DiCaprio's climate change film Ice on Fire, HBO premier June 11, 2019. https://www.youtube.com/watch?v=Elf0RFBhr8I

Wiley, April 2019. Contributed to school textbook titled *Jacaranda Senior Geography 2 for Queensland Units 3&4 3E.*

Science News for Students. Interviews and science story by Douglas Fox. April 2019 https://www.sciencenewsforstudents.org/article/strange-lake-belches-flammable-gas-high-arctic

National Geographic Learning*/ Cengage Learning. Contribution to textbook, Earth and Space Science. Chapter 18. The Atmosphere.* Explorers at Work | Studying Methane Bubbles with Katey Walter Anthony. March 9, 2019.

Nature Magazine, interview with Jeff Tollefson https://www.nature.com/articles/d41586-018-07751-w

Yale Climate Connections*,* interview and filming with Peter Sinclair, Dec. 9, 2018. https://www.youtube.com/watch?v=DzUmjU4lwAU

ArcticToday.com, Interview with Melody Schreiber about the importance of abrupt permafrost thaw. Oct. 12, 2018

Washington Post, Interviews and field science story by Chris Mooney and photographer Jonathon Newton on methane bubbling in arctic lakes. Aug. 19-26, 2018. https://www.washingtonpost.com/graphics/2018/national/arctic-lakes-are-bubbling-and-hissing-with-dangerous-greenhouse-gases/?noredirect=on&utm_term=.6ed4a7046b50

The Zero Hour with RJ Eskow. Live television/radio interview about permafrost carbon feedback. Sep. 27, 2018
YouTube: https://www.youtube.com/watch?v=fetZbsIH_yk
Podcast: http://www.thisisthezerohour.com/2018/09/29/the-permafrost-loop-and-tax-scam-ii/

Alaska Public Media/Alaska's Energy Desk. Interviews with Ravenna Koenig about methane production in terrestrial ecosystems and the North Star Golf Course. https://www.ktoo.org/2018/09/18/for-methane-researcher-golf-course-bubbles-are-a-first/ Sep. 19, 2018

Newsweek*,* Report on abrupt thaw methane emissions, interview with Hannah Osborne; Sep. 13, 2018. *https://www.newsweek.com/arctic-permafrost-lakes-bubbling-methane-nasa-1119624*

CBC*,* Canadian Broadcasting Corporation news story interview with correspondent Emily Blake on abrupt thaw impact on the permafrost carbon feedback. Aug. 30, 2018.

NSF Science360 News, Top Story, editor Joel Goldberg. Aug. 20, 2018

NASA, Research featured by Live on NASA.gov, interview with Ellen Gray, Aug. 1, 2018. https://www.nasa.gov/feature/goddard/2018/unexpected-future-boost-of-methane-possible-from-arctic-permafrost

Fairbanks Daily News Miner*,* Interview with Erin McGroarty about permafrost thaw and methane emissions. Aug. 17, 2018.

Alaska Public Media/Alaska's Energy Desk, Broadcast interview with Nathaniel Herz about abrupt permafrost thaw. Aug. 16, 2018. *https://www.ktoo.org/2018/08/20/new-study-says-global-models-sharply-underestimate-permafrost-emissions/*

CBS News/60 Minutes, interview on my research in Russia Alex Diamond. May 9, 2018

Earth Vision Institute, the Human Element, contributor to documentary film about the balance between humanity and nature. Premiered at the San Francisco Film Festival April 2018. http://earthvisioninstitute.org/the-human-element/

OMSI Oregon Museum of Science and Industry. April 2018. Research featured in Under the Arctic Digging Into Permafrost. Museum exhibit. https://omsi.edu/products/under-the-arctic-digging-into-permafrost
https://www.youtube.com/watch?v=IWMnvxNDx-8

New York Times, interview with Henry Fountain for Climate Fwd. newsletter on future methane release from permafrost thaw. March 26, 2018.

National Geographic Kids, feature for the 2020 NG Kids Almanac. Interviewed by Sarah Wassner Flynn March 21, 2018.

National Geographic Magazine, feature in story about Climate Change Tipping Points by writer Craig Welch and photographer Katie Orlinksy March 14, 2018. https://www.nationalgeographic.com/environment/2018/08/news-arctic-permafrost-may-thaw-faster-than-expected/

Discovery Channel/Moxie Films LLC, presented in a film entitled “NASA 60th Anniversary”; Feb. 2017-May 2018

James Balog photographer, facilitated and was featured in photography about methane bubbles in lake ice, March 2017.

***Alaska Public Media Energy Desk*,** Katey Walter Anthony report on Hilcorp gas line leak in Cook Inlet. https://youtu.be/96R40mlhvzU (March 2017).

Leonardo DiCaprio's environmental film entitled *Before the Flood,* features my methane research. *Trailer:* http://news.nationalgeographic.com/2016/10/before-the-flood-leonardo-dicaprio-barack-obama-katharine-hayhoe-climate-change-livestream/. (October 2016).

***National Geographic Learning*,** contributing to feature in "Living in the Environment" with Josh Bianchi, Oct. 2016

***National Geographic Learning*,** featured in book entitled "Environmental Science, 15th Edition", printed by Jake Warde, Cengage Learning, Sep. 2016.

U.S. Secretary of State John Kerry, contribution to climate change and the Arctic video by ATTN, Sep. 21, 2016.

National Geographic Magazine features 2016 NASA research project work (Aug. 2016) http://news.nationalgeographic.com/2016/08/bubbling-lakes-methane-seeps-alaska/

KUAC Alaska Public Radio. Interview featured on climate change radio series with Tim Ellis. August 30, 2016.

HBO Television. My methane research was featured in a film produced by VICE on HBO about permafrost thaw in the Arctic. Filmed March 20, 2016; aired March 17, 2017.

Newsweek. Interviewed by and brought to the field correspondent Zoe Schlanger, March 20, 2016.

The Guardian. Interviewed about the permafrost carbon feedback by writer Suzanne Goldenberg, March 18, 2016

Documentary Film: Between Earth and Sky Climate Change on the Last Frontier. Texas Tech University. I appeared on film to explain methane emissions from thermokarst lakes, March 16, 2016. *http://betweenearthandskymovie.com/*

***New York Times*.** Interviewed and featured scientist in article, "Methane has never looked so beautiful" by Joanna Klein, http://www.nytimes.com/2016/03/08/science/methane-has-never-looked-so-beautiful.html?_r=0. March 8, 2016

National Geographic Television. Interview and filming for "Strange Truths", a program about Siberian craters and methane; Sep. 26, 2015, to air on national and international stations in January 2016.

NSF Science360 News, Top Story, climate cooling research featured (July 2014). https://news.science360.gov/obj/story/ef141144-c96a-4615-b5be-097d9ab61b65/study-climate-cooling-arctic-lakes-soak-up-greenhouse-gases

College textbook contribution: Living Physical Geography by B. Gervais, publisher: by W.H. Freeman and Company/Worth Publishers/Macmillan Higher Education. April 2014.

National Geographic Learning. Feature posted in *Starr Biology*: http://www.exploreinside.net/starr-biology-katey-walter-anthony/. February 2014

Ocean Preservation Society, contributor in documentary film "Racing Extinction" about the impacts of human activity on the planet and the consequent mass extinction of species. Presented work on methane emissions from a thermokarst lake near Fairbanks, Alaska in February 2014.

NASA Sensing our Planet: Featured in 2012 public outreach publication, NASA Earth Science Research Features. (2012) https://earthdata.nasa.gov/files/NASA_Sensing_Our_Planet_2012.pdf

National Geographic Magazine, interviewed/filmed by Marianne Lavelle, Jeff Goodell (writers) and Mark Thiessen (photographer) Oct. 2010, 2011; April 2011: Article in December 2012. http://ngm.nationalgeographic.com/2012/12/methane/lavelle-text

New York Times, interviewed/photographed/reviewed article by correspondent Justin Gillis, Oct. 19-21, 2011. http://www.nytimes.com/2011/12/17/science/earth/warming-arctic-permafrost-fuels-climate-change-worries.html?nl=todaysheadlines&emc=tha3

***NBC Learn*,** interviewed for program on Permafrost and Methane, by Norman Cohen. March 2011**.** www.nbclearn.com/climate/cuecard/52627**,** National Science Foundation website Science 360 (http://science360.gov/series/Changing+Planet/640a9c81-ae92-4b28-9dc9-fbeaec105f54)

Al Gore presentation: Contributed material on methane research for Al Gore's presentations, including the United States Senate 2009, and other 2010-2011 presentations http://www.ted.com/talks/lang/eng/al_gore_warns_on_latest_climate_trends.html

Scientific American Earth 3.0 biography; June 2009 http://www.scientificamerican.com/article.cfm?id=the-peril-below-the-ice

New Scientist article on methane Biogas, November 2010. http://www.newscientist.com/article/mg20827854.000-cold-climates-no-bar-to-biogas-production.html

LA Times article on methane projects, February 22, 2009: http://www.latimes.com/news/nationworld/nation/la-na-global-warming22-2009feb22,0,516298.story

National Wildlife Federation: National Conservation Achievement Award in Science for 2009, presented November 2009, Washington DC

National Geographic Society Early Explorers, awarded Feb. 2009, biographical article about scientist and her research. http://www.nationalgeographic.com/field/explorers/walter-katey-09.html

Discover Magazine *2008, Dec. 2008 issue, #3 Profile of* 20 Best Brains Under 40, http://discovermagazine.com/2008/dec/20-best-brains-under-40

Sally Ride School Book Science Curriculum, contributed science and biographical materials.

Nome Schools, education and outreach activities in rural Alaskan junior high and high school classrooms and field trip, Oct. 2008.

Rural Alaska town hall meeting presentations about methane: Atqasuk, Barrow, Cordova, Nome, Shishmaref (July 2007-2016).

Discovery Channel documentary film*, "Expedition Alaska*". Contributor to film as an ice scientist, showing the affects and feedbacks of climate change on Alaska's glaciers, permafrost and sea ice. Filming took place July-September, 2007. The two-hour film aired April 20, 2008

National Public Radio, All Things Considered with Melissa Block, September 10, 2007. Alaska scientist Katey Walter studies an aspect of climate change that has been largely overlooked: CH4 emissions from Atqasuk seep. http://www.npr.org/templates/story/story.php?storyId=14288215

BBC Television documentary film series, "Earth, The Biography", Invited participation in a segment on the Atmosphere featuring Siberian permafrost thawLakbaikal1, methane emissions from thermokarst lakes, and feedbacks to climate change; production includes field trip and filming at the Northeast Science Station in Cherskii, Russia in March 2007. Aired September 2007.

History Channel, "A Global Warning" filmed July 2007, aired fall 2007 on the History Channel. Contribution about thawing permafrost in the Fairbanks area.

BBC Documentary Film: "Future Earth" *(filmed April 2008)* - contribution about permafrost and greenhouse gas emissions in Alaska.

Other magazine appearances: *National Geographic Society (2007,2009,2011,2012), Popular Scientist (Dec. 2007), New Scientist (Dec. 2007), Discover Magazine (Jan. 2008)*, *Alaska Magazine (Feb. 2008); New York Times Sunday issue (April 2008); Scientific American (May 2008)*: Interviews on the role of arctic lakes and methane in global climate change. September 2007-present.

J. University Service

Research Unit Peer Committee for 2020/21 promotion and/or tenure process, Sep. 2020-present

Faculty mentoring, WERC, IARC, IAB and Chemistry, 2010-present

Katharine Hayhoe, hosted guest speaker on Climate Change and Faith at a thermokarst-lake and Fox Permafrost Tunnel field trip (Sep. 9, 2019)

USGS Soil Moisture Conference, conducted field trip for conference at thermokarst lake (Sep. 10, 2019)

AK National Lab Day, Evidence of Climate Change tour (May 31, 2018)

White paper preparation for UA Presidents' Postdoctoral program, assisting UAF IARC Director, Hajo Eicken (Nov. 16, 2017)

Guest lecture on scientific writing, UAF Engineering Research Communications (Feb. 29, 2016)

Invited speaker, UAF Climate Change Seminar Series (Sep. 16, 2015)

Invited department seminars, 2007-present

Global Change Grant, proposal reviewer, 2008-present

Lab meetings, Leadership and participation in weekly lab meetings in which undergraduate and graduate students, postdocs, technicians and guest faculty members presented research and discussed literature, 2007-present

IARC Seminar, Sep. 20, 2012

Undergraduate Research and Scholarly Activity (URSA), UAF Research Showcase, Sep. 19, 2012

University of Alaska Climate Change Seminar Series, Sep. 12, 2012
UAF press release on Nature Geoscience article, May 2012
Host to national graduate students for field and lab research at UAF (Clayton Elder, UCI, Aug. 2015).
Host to international sabbatical professor, Frederic Thalasso, CINVEATAV, Mexico, 2010-2011
Host to visiting international students & Fulbright fellow, 2008-2011
ACCAP webinar, May 4, 2010
Senator Stevens, Briefing in Washington DC and Juneau on UAF methane research, 2008-2009
Senator Murkowski, Briefing in Washington DC on UAF climate change research, May 22, 2008
Governor Palin, Briefing in Juneau, Alaska on methane research, 2008
NICOP Planning Committee, 2007-2008
UAF Board of Regents presentation, June 6, 2008
Faculty Interview of Dr. John Kessler, Institute of Marine Science, June 2007

INSTRUCTION

K. Advising (see **Publications for student- and postdoc-authored papers)

Graduate Advising, Chair or Co-Chair (current):
Laura Brosius (Ph.D.), Natalie Tyler (Ph.D.), Nicholas Hasson (Ph.D.), Janelle Sharp (M.Sc.)

Completed Graduate Degrees:
Laura Brosius, 2010. M.Sc., Dragos Vas, 2010. M.Sc., Louise Farquharson, 2012. M.Sc., Melanie Engram, 2012. M.Sc., Karla Martinez Cruz, 2016 Ph.D., Prajna Regmi Lindgren, 2016 Ph.D., Joanne Heslop, 2017 Ph.D.

Graduate Committees:
Sudipta Sarkar, M.Sc., Rena Bryan, M.Sc., Allen Phelps, Ph.D., Ben Jones, Ph.D., Armando Sepulveda-Jáuregui, Ph.D., Bridget Eckhardt, M.Sc., Kristin Gagne, Ph.D., Melanie Burnett, M.Sc.

Postdocs:
Teresa Aguirrezabala Campano, 2021 – present, methane oxidation in thermokarst lakes
Clayton Elder 2017-present, AVIRIS detection of methane hotspots
Josefine Lenz, 2016-2019, paleolimnology and carbon accumulation in lakes
Prajna Lindgren, 2016-2019, remote sensing lake methane and permafrost carbon stocks
Matthias Winkel, 2017-2018, methane biogeochemistry in lake sediments and permafrost
Claire Treat, 2014-2016, paleoecology and carbon cycling in peatlands and thermokarst lakes.
Armando Sepulveda-Jáuregui, Jan. 2013-2014, limnology and trace gas biogeochemistry
Miriam Jones, 2010-2011, paleoenvironment of thermokarst lakes
Mark Kessler, 2008-2010, numerical modeling thermokarst lakes

Undergraduate & Technician Mentoring:
Nicholas Hasson, Philip Hanke, Sam Greene, Allen Bondurant, Wayne Pence, Jacob Chase, Amy Strohm, Casey Pape, Laurel McFadden, Odin Miller, Laura Oxtoby, Heidi Kristenson, Karin Dove, Melissa Smith, Theresa Edmonds, Joy Clein, Gary Jewison, Desmond Johns, Dan Nidzgorski, Erin Carr; Dmitri Draluk, trained local resident of Cherskii, Russia to monitor methane in lakes.

Undergraduate Summer Interns:
Sam Greene, Karin Dove, Theresa Edmonds, Simon Peterson

High School Student Interns:
Samuel Wright, Virginia High School summer intern, 2019
Clare Hanneman, Lathrop High School, 2019 Alaska Statewide High School Science Symposium
Nic Covell, West Valley High School, 3rd place winner 2007 Science Symposium

Katie Sparks, West Valley High School

Visiting students and research fellows:
Nancy Freitas, Ph.D., University of California, Berkeley, 2018
Clayton Elder, postdoc, NASA JPL, 2018
Frederic Bouchard, postdoc, Laval University, 2016
Clayton Elder, Ph.D. candidate, UC Irvine, 2015
Kim Davies, Ph.D. University of Southampton, UK, 2014
Karla Martinez-Cruz, Ph.D. CINVESTAV, Mexico, 2013, 2015
Frederic Thalasso, sabbatical Professor, CINVESTAV, Mexico, 2010-2011
Armando Jáuregui, Ph.D., CINVESTAV, Mexico, 2010-2011
Marie Laure Geai, French Fulbright Fellow 2009-2010.
Frans-Jan Parmetier, Ph.D. student from Netherlands, trained at UAF Oct.-Nov. 2008
Laura Meredith, Ph.D. student from MIT, trained at UAF and Cherskii, Russia June-July 2008

L. Guest Lecturer:

2022. Content Bookstore, Northfield, MN May 25, 2022. Book reading and signing event for Chasing Lakes. https://www.facebook.com/ContentBookstore/videos/693812815009384
2022. Bear Gallery, Fairbanks, Alaska. Conversation with author, Katey Walter Anthony, and artist, Ina Timling, for collaborative work on Chasing Lakes. May 28, 2022. Fairbanks, Alaska
2022. UA Museum of the North. May 31, 2022. Book reading and signing for Chasing Lakes.
2016. Personal strategies for peer-review article writing. University of Alaska Institute of Northern Engineering, Engineering Research Communication class. Feb. 29, 2016.
2015. Climate change feedbacks associated with high latitude lakes. University of Alaska Climate Change Seminar Series, Sep. 16, 2015.
2012. Methane emissions from arctic lakes- the role of permafrost thaw and glacier melt. *University of Alaska Climate Change Seminar Series, UAF SFOS-Juneau*.
2010. Methane ebullition in thermokarst lakes in the Arctic, Nov. 27, 2010, *Helsinki University*, Helsinki, Finland.
2010. Methane emissions from arctic lakes. ACCAP Webinar Series.
2009. Methane from Arctic Lakes: Observations from 60 lakes in Alaska and Siberia, *Max Planck Institute for Microbiology*, Marburg, Germany.
2008Methane bubbling from northern lakes: Contributions to the global methane budget. *University of California, Merced*.
2008. Methane bubbling from northern lakes. *University of California, Davis*.
2008. Global lake methane emissions. *University of Nevada, Reno*.
2008. Climate change and energy: Methane in northern lakes. *Saint Olaf College,* Northfield, Minnesota.
2007. Methane (CH_4) bubbling from northern lakes: Contributions to the global methane budget, *Harvard University*.

M. Honors

Ph.D. Dissertation: 2006 1st place winner of the United States Council of Graduate Schools/ University Microfilms International **Distinguished Dissertation Award** in the field of Mathematics, Physical Sciences and Engineering

Walter, K. M., F. S. Chapin III, S. A. Zimov, D. Draluk, J. P. Chanton. 2004. *Global warming feedbacks of methane bubbling along expanding North Siberian lake margins.* International Boreal Forest Research Association (IBFRA). Poster. **Honorable mention for best poster presentation.**

Walter, K. M., F. S. Chapin III, S. A. Zimov, D. Draluk, J. P. Chanton. 2004. *Global warming feedbacks of methane emissions (bubbling) from melting permafrost along expanding North Siberian lake margins.* American Society of Microbiology, Alaska Chapter Annual Meeting. **First place award for student presentations.**

Walter, K. M., F. S. Chapin III, S. A. Zimov, D. Draluk. 2003. *The significance of methane ebullition.* American Geophysical Union Meeting, San Francisco, California. Presentation. **Award for outstanding student paper.**

Walter, K. M., F. S. Chapin III, D. White. 2002, March. *Lake ecosystems in transition: implications for CH_4 and CO_2 flux.* Alaska Branch of the American Society for Microbiology, Annual Chapter Meeting, Fairbanks, Alaska. Presentation. **First place award for student presentations.**

N. Professional Organization Memberships, all or part of 2003-present.

American Geophysical Union
American Society of Limnology and Oceanography
American Water Resources Association
Geological Society of America
Permafrost Carbon Network
Soil Science Society of America

O. Other skills

Fluency in Russian language; translator; professional travel through Russia and Former Soviet Union, running, skiing, mountaineering, cello.

P. Personal

Born April 17, 1976, San Antonio, Texas, USA. Married with two children.