

TIMOTHY L. COOK
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tcook3@worchester.edu
413-549-1730

EDUCATION

University of Massachusetts Amherst – Ph.D. in Geology 2009

Dissertation title: *“Climate and Environmental Change in Arctic Canada: Observations from Upper and Lower Murray Lakes, Ellesmere Island, Nunavut”*
Advisor: Raymond S. Bradley

University of Delaware, Graduate College of Marine Studies – M.S. in Oceanography 2004

Thesis title: *“Observations of sediment transport in the Delaware estuary during spring runoff conditions”*
Advisor: Christopher K. Sommerfield

Brown University – Sc.B. in Geological sciences 2001

Senior thesis title: *“Fluvial sediments of the Rhode Island Formation: Lithofacies Relationships at Dodgeville, MA”*

University of Otago, Dunedin, New Zealand – semester of foreign study in 2000

PROFESSIONAL APPOINTMENTS

2018 to Present **University of Massachusetts, Amherst, MA – Research Associate Professor & Lecturer**

2017 to 2018 **Worcester State University, Worcester, MA – Associate Professor**
Courses include: *GS 140 Physical Geology, GS 225 Oceanography, GS 193 FS29 Colliding Continents, Ice Ages, and the New England Landscape, GS 299 Quaternary Field Studies, GS 270 The Sedimentary Record, GS 365 Climate Change Over Earth History, GS 370 Lakes & Environmental Change, GE 315 Research Methods, GE/GS 400 Geography Seminar*

2012 to 2017 **Worcester State University, Worcester, MA – Assistant Professor**

2011 to 2012 **Bates College, Lewiston, ME – Visiting Assistant Professor in Geology**
Courses included: *Sedimentary Processes and Environments; Coastal & Estuarine Processes; and Earth Surface Environments and Environmental Change*

2010 to 2011 **University of Massachusetts, Amherst, MA – Senior Postdoctoral Fellow**
Conducted research on the Quaternary climate history of the Arctic; responsible for the analysis and interpretation of the physical characteristics of a 3.6 million year lake sediment record

2009-2010 **Lafayette College, Easton, PA – Visiting Assistant Professor in Geology**
Courses taught: *Earth’s Climate: Past, Present and Future; Oceanography; Climate Change: The Facts, the Issues, and the Long-Term View; Paleolimnology*

2008-2009 **University of Vermont, Burlington, VT – Lecturer in Geology**
Courses taught: *Earth System Science; Earth Hazards; and Geological Oceanography*

- 2004-2008 **University of Massachusetts, Amherst, MA** – Research Assistant
Collected and analyzed high-resolution paleoclimatic data, planned and led field expeditions to the Canadian and Norwegian Arctic to study modern lake sedimentation, conduct geophysical surveys of lake stratigraphy, and collect sediment cores for the study of past climate and environmental conditions
- 2002-2004 **University of Delaware, Lewes, DE** – Research Assistant
Carried out field and laboratory investigations involving coastal oceanography and sedimentary processes including the collection and analysis of sedimentological, geophysical, and time-series data, and participated in oceanographic research cruises

AWARDS

George I. Alden Excellence in Teaching Award – AY2015/2016 Nominee

GRANTS & FELLOWSHIPS

- Harvard University, Harvard Forest, Charles Bullard Fellow in Forest Research, Sep 2018-June 2019
Data synthesis investigating the response of the New England landscape to the interplay of humans, vegetation, climate change and extreme weather
- Northeast Climate Science Center, University of Massachusetts Amherst, June-August 2015, \$10,000
“Recovery and analysis of sedimentary records from New England lakes for the purposes of documenting hydrological changes prior to the period of instrumental records”
- Worcester State University Faculty Mini Grant, July 2015 through June 2016, \$4,350
“Controls on Organic Carbon Accumulation and Burial Efficiency in Lakes Spanning the Boreal Forest-Tundra Ecotone”
Principal Investigator: Timothy Cook
- Worcester State University, Strategic Plan Implementation Fund, 1/2015 through 6/2016, \$75,957
“Development of a Watershed Science and Education Co-Laboratory to Advance Student Learning, Foster Undergraduate Research, and Engage the Community”
Principal Investigator: Timothy Cook (co-investigators include W. Hansen, E. Braynovich, and K. Wurst)
- American Chemical Society, Petroleum Research Fund, July 2013 through August 2015, \$50,000
“Controls on organic carbon accumulation, burial efficiency, and hydrocarbon content in lake sediments of the boreal forest-tundra ecotone, Labrador, Canada”
Principal Investigator: Timothy Cook
- Worcester State University Faculty Mini Grant, July 2013 through June 2014, \$5,000
“Reconstructing the history of extreme precipitation in New England from sedimentary deposits in lakes and ponds”
Principal Investigator: Timothy Cook

National Science Foundation Division of Undergraduate Education, March 2013, \$360
Awarded a stipend to attend the Teaching Oceanography Workshop held June 18-20, 2013 at the City College of San Francisco, CA

Massachusetts Space Grant Consortium Summer Fellowship, 2007, \$1500
“Variations in summer lake-ice extent in the High Arctic as observed in satellite images”
Principle Investigator: Timothy Cook

Geological Society of America, Kenneth N. Weaver Student Travel Award, 2004, \$300
Award supported the presentation of the talk “Observations of Sediment Transport in the Delaware Estuary During Spring Runoff Conditions” at the 2004 Annual Meeting of the Northeastern Section of the Geological Society of America.

Sigma Xi, Grant in Aid of Research, 2004, \$500
“Suspended-Sediment dynamics in the Turbidity Maximum of the Upper Delaware Estuary”

PUBLICATIONS (peer reviewed journal articles)

[11] Baranes, H., Woodruff, J.D., Wallace, D., Kanamaru, K., and Cook, T., 2016. Sedimentological records of the C.E. 1707 Hōei Nankai Trough tsunami in the Bungo Channel, southwestern Japan. *Natural Hazards*. DOI: 10.1007/s11069-016-2498-3

[10] Yellen, B., Woodruff, J.D., Cook, T., Newton, B., 2016. Unprecedented Historical Erosion from Tropical Storm Irene due to High Antecedent Precipitation. *Earth Surface Processes and Landforms*, DOI: 10.1002/esp.3896.

[9] Cook, T. C., Yellen, B., Woodruff, J. D., and Miller, D., 2015. Contrasting human versus climatic control of erosion. *Geophysical Research Letters*, 42, DOI: 10.1002/2015GL064436

[8] Woodruff, J.D., Kanamaru, K., Kundu, S., and Cook, T.L., 2014. Depositional Evidence for the Kamikaze Typhoons and Links to Changes in Typhoon Climatology. *Geology*, DOI: 10.1130/G36209.1.

[7] Brigham-Grette, J., Melles M., Minyuk, P., Andreev, A., Tarasov, P., DeConto, R., Koenig, S., Nowaczyk, N., Wennrich, V., Rosén P., Haltia, E., Cook, T., Gebhardt, T., Meyer-Jacob, C., Snyder, J., Herzschuh, U., 2013. Pliocene Warmth, Polar Amplification, and Stepped Pleistocene Cooling recorded in NE Arctic Russia. *Science*, 340: 1421-1427.

[6] Melles, M., Brigham-Grette, J., Minyuk, P., Nowaczyk, N. R., Wennrich, V., DeConto, R.M., Anderson, P.M, Andreev, A.A., Coletti, A., Cook, T. L., Haltia-Hovi, E., Kukkonen, M., Lozhkin, A.V., Rosen, P., Tarasov, P., Vogel, H., Wagner, B., 2012. 2.8 Million Years of Arctic Climate Change from Lake El'gygytyn, NE Russia. *Science*, 337: 315-320.

[5] Melles, M., Brigham-Grette, J., Minyuk, P., Koeberl, C., Andreev, A., Cook, T., Gebhardt, C., Haltia-Hovi, E., Kukkonen, M., Nowaczyk, N., Schwamborn, G., Wennrich, V., and the El'gygytyn Scientific Party. 2011. The Lake El'gygytyn Scientific Drilling Project – Conquering Arctic Challenges through Continental Drilling, *Scientific Drilling*, 11: 29-40.

[4] Cook, T. L., and Bradley, R. S., 2010. An analysis of past and future changes in the ice cover of two high-arctic lakes based on synthetic aperture radar (SAR) and Landsat imagery, *Arctic, Antarctic, and Alpine Research*, 42: 9-18.

[3] Kaufman, D. S., Schneider, D. P., McKay, N. P., Ammann, C. M., Bradley, R. S., Briffa, K. R., Miller, G. H., Otto-Bliesner, B. L., Overpeck, J. T., Vinther, B. M., and Arctic Lakes 2k Project Members (Abbott, M., Axford, Y., Bird, B., Birks, H. J. B., Bjune, A. E., Briner, J., Cook, T., Chipman, M., Francus, P., Gajewski, K., Giersdottir, A., Hu, F. S., Kutchno, B., Lamoureux, S., Loso, M., MacDonald, G., Peros, M., Porinchu, D., Schiff, C., Seppa, H., and Thomas, E.), 2009. Recent warming reverses long-term Arctic cooling. *Science*, 325: 1236-1239.

[2] Cook, T. L., Bradley, R. S., Stoner, J. S., and Francus, P. 2009. Five thousand years of sediment transfer in a High Arctic watershed recorded in annually laminated sediments from Lower Murray Lake, Ellesmere Island, Nunavut, Canada, *Journal of Paleolimnology*. DOI: 10.1007/s10933-008-9252-0

[1] Cook, T. L., Sommerfield, C. K., and Wong, K.-C., 2007. Observations of tidal and springtime sediment transport in the upper Delaware Estuary, *Estuarine, Coastal and Shelf Science*, vol. 72: 235-246. doi:10.1016/j.ecss.2006.10.014.

EDITED VOLUMES

Brigham-Grette, J., Melles, M., Minyuk, P., Wagner, B., Cook, T., and Rousseau D., (Editors), 2013. Initial results from Lake El'gygytgyn, western Beringia: first time-continuous Pliocene-Pleistocene terrestrial record from the Arctic. Special Issue of the journal *Climate of the Past*, vol 8.

PRESENTATION ABSTRACTS (Underline denotes undergraduate student co-author)

[38] Ames, E., Snyder, N. P., Merritts, D. J., Walter, R. C., Cook, T. L., and Ahamed, A., 2017. A Comparison of land-use and glacial controls on erosion in the northeastern United States, 52nd Annual Meeting, Northeastern Section, Geological Society of America, Pittsburgh, PA.

[37] Cook, T. L., and Bradley, R. S., 2016. Historical and paleo perspectives on the origin, timing, and spatial distribution of extreme flooding in the northeastern United States, Geological Society of America Annual Meeting, Denver, CO.

[36] Cook, T. L., Lucier, E., and Bradley, R. S., 2016. Historical and paleo perspectives on the origin, timing, and spatial distribution of extreme flooding in the northeastern United States, 51st Annual Meeting, Northeastern Section, Geological Society of America, Albany, NY.

[35] Lucier, E. and Cook, T. L., 2016. A paleolimnological perspective on recent catastrophic drainage of a (post) glacial lake in the Clyde River Valley, northeastern Vermont. 51st Annual Meeting, Northeastern Section, Geological Society of America, Albany, NY.

[34] LeNoir, J. and Cook, T. L., 2016. Lake sediment based insight into the deglaciation and post-glacial climate and environmental history of the Mealy Mountains, Southeastern Labrador, Canada. 51st Annual Meeting, Northeastern Section, Geological Society of America, Albany, NY.

- [33] Moir, E. and Cook, T. L., 2016. Lake and watershed controls on the accumulation and composition of sediment in lakes at the boreal forest-tundra ecotone, Labrador, Canada. 51st Annual Meeting, Northeastern Section, Geological Society of America, Albany, NY.
- [32] Stoner, J., Reilly, B., Ziegler, L., Cook, T., Francus, P., Lapointe, F., Abbott, M., Balascio, N., and Bradley, R. 2015. Holocene Paleomagnetic Secular Variation: What Relationships Between Mid and Polar Latitudes tell us About Geomagnetic Dynamics, AGU-GAC-MAC-CGU Joint Assembly, Montreal Canada.
- [31] Cook, T. L., Yellen, B. C., Miller, D. R., and Woodruff, J. D., 2015. Geomorphic Impact of Floods, Humans, and Climate Change on the Post Glacial Landscape of New England, 50th Annual Meeting, Northeastern Section, Geological Society of America, Bretton Woods, NH.
- [30] Seles, D. E., Brigham-Grette, J., Powell, R. D., Cook, T. L., Kowalewski, D. E., 2015. Recent Changes in Subglacial Discharge Characteristics of the Kongsvegen-Kronebreen Glacial Complex, Kongsfjorden, Svalbard, 50th Annual Meeting, Northeastern Section, Geological Society of America, Bretton Woods, NH.
- [29] Nelson, T. and Cook, T. L., 2015. A Paleolimnological Perspective on Water Quality Degredation in a Rural Water Body, Lake Warner, Hadley, Massachusetts, 50th Annual Meeting, Northeastern Section, Geological Society of America, Bretton Woods, NH.
- [28] Cronin, D. and Cook, T. L., 2015. Comparative Limnology of Lakes Spanning the Boreal Forest-Tundra Transition Zone, Mealy Mountains, Labrador, Canada, 50th Annual Meeting, Northeastern Section, Geological Society of America, Bretton Woods, NH.
- [27] Yellen, B. C., Woodruff, J. D., Cook, T. L., and Newton, R. M., 2015. Did Climate Change Cause Extreme Erosion During Hurricane Irene? Expectations Moving Forward, 50th Annual Meeting, Northeastern Section, Geological Society of America, Bretton Woods, NH.
- [26] Campbell, T. D., Cook, T. L., and Retelle, M. J., 2015. A Paleolimnological Study Reconstructing Organic Carbon Accumulation and Climate History: Mealy Mountains, Labrador, Canada, 50th Annual Meeting, Northeastern Section, Geological Society of America, Bretton Woods, NH.
- [25] Baranes, H. E., Woodruff, J. D., Kanamaru, K., Wallace, D. J., Cook, T. L., 2014. A 1000-year Sedimentary Reconstruction of Extreme Coastal Flooding for the Bungo Channel of Japan. Asia Oceania Geosciences Society Annual Meeting, Sapporo, Japan.
- [24] Kanamaru, K., Woodruff, J., Kundu, S., and Cook, T., 2014. Historical Inundation Events from Western Kyushu Islands: Geochemical Characteristics of Typhoon - and Tsunami - Induced Deposits. Asia Oceania Geosciences Society Annual Meeting, Sapporo, Japan.
- [23] Cook, T. L., Yellen, B. C., and Woodruff, J. D., 2014. A Long-Term Perspective on Tropical Storm Irene and the Occurrence of Extreme Geomorphic Events Based on Flood Induced Deposits in Amherst Lake, VT. Geological Society of America Northeastern Section, 49th Annual Meeting, Lancaster, PA.
- [22] Nelson, T., and Cook, T. L., 2014. Controls on the Infilling of Lacustrine Basins: Inferences and Uncertainties from a Regional Study of Lakes in the Northeastern United States. Geological Society of America Northeastern Section, 49th Annual Meeting, Lancaster, PA.

[21] Baranes, H. E., Woodruff, J. D., Kanamaru, K., Wallace, D. J., Cook, T. L., 2014. Sedimentological Impacts of Large Scale Inundation Events: Records of Tsunami and Typhoon Flooding from Lake Ryuuoo, Japan. Geological Society of America Northeastern Section, 49th Annual Meeting, Lancaster, PA.

[20] Yellen, B. C., Woodruff, J., Cook, T. L., Fallon, A. R., Kratz, L., and Martini, A., 2014. Putting Hurricane Irene Sediments in a Historical Context from Uplands to Estuary. Geological Society of America Northeastern Section, 49th Annual Meeting, Lancaster, PA.

[19] Cook, T. L., Balascio, N. L., and Bradley, 2013. Paired response of two high-arctic lakes to 5000 years of climate and environmental change, 43rd International Arctic Workshop, Amherst, MA.

[18] Kanamaru, K., Woodruff, J., and Cook, T. L., 2012. Sedimentary Evidence of the 13th century Kamikaze Typhoons from southwestern Japan. 2012 Geological Society of America Annual Meeting, Charlotte, NC.

[17] Wallace, D. J., Kanamaru, K., Cook, T. L., and Woodruff, J. D., 2012. Sedimentological Record of Typhoons and Tsunamis from Shikoku, Southwestern, Japan. 2012 Geological Society of America Annual Meeting, Charlotte, NC.

[16] Brigham-Grette, J. and 12 others including Cook, T., 2012. Millennial Scale Record of Terrestrial Pliocene-Pleistocene warmth from Lake El'gygytyn, NE Russia: What does it mean for Greenland's Ice Sheet history (invited). Fall Meeting American Geophysical Institute, San Francisco, CA.

[15] Yackulic, E., and Cook, T., 2012 – Evaluation of the response and recovery of a forested watershed to human disturbances based on a multi-proxy analysis of sediments in Trout Pond, NH, Geological Society of America Northeastern Section, 47th Annual Meeting, Hartford, CT.

[14] Cook, T., and Bradley, R. S., 2011. Extreme depositional events in the context of annually resolved records of sediment accumulation, 2nd PAGES Varves Working Group Workshop, Corpus Christie, TX.

[13] Cook, T., Brigham-Grette, J., and the El'gygytyn Science Team, 2011. Rapid visualization of stratigraphic data: Developments from the El'gygytyn Drilling Project, 41st International Arctic Workshop, Program and Abstracts, pp. 64-65.

[12] St-Onge, G., Stoner, J., Barletta, F., Lisé-Pronovost, A., St-Onge, M.-P., Ledu, D., Rochon, A., Darby, D., Polyak, L., Francus, P., Bradley, R. S., and Cook, T. L., 2011. Holocene paleomagnetic secular variation and relative paleointensity in the Canadian Arctic, 41st International Arctic Workshop, Program and Abstracts, p. 249.

[11] Cook, T., Vennrich, V., Kukkonen, M., Melles, M., and Brigham-Grette, J., 2010. Characteristics and paleoenvironmental significance of lacustrine sediments in the El'gygytyn drill core, *Eos Transactions. AGU*, 91 (55). Fall Meeting Supplement, Abstract PP21B-1699.

[10] Cook, T., Francus, P., and Bradley, R., 2010. Sedimentary Evidence for Changes in the Dissolved Oxygen Content of a High-Arctic Lake and its Impact on Varve Preservation, 40th International Arctic Workshop, Program and Abstracts, p. 55.

[9] Stoner, J. S., Davies, M. H., Bradley, R. S., Cook, T. L., Francus, P., Besonen, M. R., Channell, J. E., and St-Onge, G., 2009. Observations on the Late Holocene Dynamics of the Boreal Geomagnetic Field from Ellesmere Island Lake Sediments, *EOS Transactions. AGU*, 90 (22), Joint Assembly Supplement, Abstract PPIIA-01.

- [8] Cook, T. L., Bradley, R. S., Stoner, J. S., and Francus, P. 2008. High Arctic Temperature Variations During the Past Five Millennia: a Varve Based Record From Lower Murray Lake, Nunavut, Canada, *Eos Transactions. AGU*, 89 (53), Fall Meeting Supplement, Abstract C54A-01.
- [7] Cook, T., Bradley, R., 2008. Sensitivity of High Arctic lake-ice conditions to climate change, 38th International Arctic Workshop, Program and Abstracts, p. 39.
- [6] Cook, T. L., Bradley, R. S., and Stoner, J. S., 2007. 4,500 Years of annual sediment accumulation recorded in Lower Murray Lake in the Canadian High Arctic, *Eos Transactions. AGU*, 88(52), Fall Meeting, Supplement, Abstract PP41A-0180.
- [5] Davies, M. H., Stoner, J. S., St-Onge, G., Cook, T. L., Bradley, R. S., and Werner, A., 2007. Reconstructing Holocene Paleomagnetic Secular Variation From High Arctic Sediments, *Eos Transactions. AGU*, 88(52), Fall Meeting, Supplement.
- [4] Cook, T., Bradley, R., 2007. Controls on recent sedimentation and lamina characteristics in two adjacent High-Arctic lakes, 37th International Arctic Workshop, Program and Abstracts, p. 71.
- [3] Stoner, J. S., Francus, P., Bradley, R., Lamoureux, S., Retelle, M., Patridge, W., Cook, T., and Abbott, M., 2006. Late Holocene paleo-and-environmental magnetic records from high arctic lake sediment, *Geological Society of America Abstracts with Programs*, vol. 38, no. 7, p. 200.
- [2] Cook, T., Patridge, W., Bradley, R., 2006. Sedimentary evidence of climate and landscape changes from Upper and Lower Murray Lakes in the Canadian High-Arctic, 36th International Arctic Workshop, Program and Abstracts, p. 53.
- [1] Cook, T., Sommerfield, K., and Wong, K.-C., 2004. Observations of Sediment Transport in the Delaware Estuary During Spring Runoff Conditions, *Geological Society of America Abstracts with Programs*, vol. 36, no. 2, pp. 86.

TEACHING EXPERIENCE

<i>Geography Seminar (GE/GS 400)</i>	WSU (Spring 2015)
<i>The Sedimentary Record (GS-270)</i>	WSU (Fall 2014)
<i>Geography Research Methods (GE-315)</i>	WSU (Fall 2014, Fall 2016)
<i>Physical Geology w/lab (GS-140)</i>	WSU (2012-present, 1-2 sections per semester)
<i>Oceanography (GS-225)</i>	WSU (2012-present, offered once per year)
<i>Lakes & Environmental Change w/lab (GS-370)</i>	WSU (2013-present, offered every other year)
<i>Colliding Continents, Ice Ages, and the New England Landscape (GS 199 FS29)</i>	WSU Freshman Seminar (2013 fall)
<i>Quaternary Field Studies (GSs-299-02)</i>	WSU (2013 spring)
<i>Sedimentary Processes and Environments</i>	Bates College (2011 fall)
<i>Coastal & Estuarine Processes</i>	Bates College (2011 fall)
<i>Earth Surface Environments and Environmental Change</i>	Bates College (2012 spring)
<i>Earth's Climate: Past, Present, and Future</i>	Lafayette College (2009 spring)
<i>Oceanography</i>	Lafayette College (2009 spring)
<i>Climate Change: The Facts, the Issues, and the Long-Term View</i>	Lafayette College (2010 spring)
<i>Paleolimnology</i>	Lafayette College (2010 spring)

Earth System Science
Earth Hazards
Geological Oceanography

University of Vermont (2008 fall)
University of Vermont spring (2009 spring)
University of Vermont spring (2009 soring)