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Education

- Nov. 1995 to Jan. 1997, University of Massachusetts, Amherst, Postdoc Geosciences.
Advisor: Raymond Bradley
- Sept. 1991 to Nov. 1995, University of Minnesota, Minneapolis, Ph.D. Geology.
Advisor: Kerry Kelts (deceased)
Thesis Title: *Holocene Climate Variability for Lake Sites in the Bolivian Andes and Interior Alaska Based on Sedimentology and Radiocarbon Dating by Accelerator Mass Spectrometry*
- Aug. 1989 to Dec. 1991, University of Colorado, Boulder, M.S. Geology.
Advisor: John Andrews
Thesis Title: *Radiocarbon Dating and Interpretation of Sediments from Five Lake Systems Along Frobisher Bay, N.W.T., Canada*
- Aug. 1985 to Dec. 1987, University of Colorado, Boulder, B.A. Biology
- Aug. 1982 to May 1984, Alfred University, Alfred, NY, Biology program

Employment

- Sept. 2013 to Present. Professor and Chair, University of Pittsburgh Department of Geology and Planetary Science and Core Faculty Member of the Center for Latin American Studies (Jan. 2002 to present).
- Sept. 2007 to Aug 2013. Associate Professor with tenure, University of Pittsburgh Department of Geology and Planetary Science and Core Faculty Member of the Center for Latin American Studies.
- Sept. 2001 to Aug. 2007. Assistant Professor, University of Pittsburgh Department of Geology and Planetary Science and Core Faculty Member of the Center for Latin American Studies.
- March 2002 to present. Research Associate, Carnegie Museum of Natural History Anthropology Section.
- Jan. 1997 to 2005. Adjunct Assistant Professor, University of Massachusetts Department of Geosciences and Climate System Research Center.
- Jan. 1997 to Aug. 2001. Research Assistant Professor, University of Massachusetts Department of Geosciences and Climate System Research Center.
- Nov. 1995 to Jan. 1997. Senior Postdoctoral Research Fellow, University of Massachusetts Department of Geosciences and Climate System Research Center with Raymond Bradley.
- Sept. 1991 to Nov. 1995. Research and/or teaching assistant, University of Minnesota, Department of Geology and Geophysics and Limnological Research Center (LRC) with Kerry Kelts.
- June 1989 to Aug. 1991. Research assistant University of Colorado Institute of Arctic and Alpine Research (INSTAAR) with John Andrews.
- Oct. 1988 to May 1989. United States Geological Survey, Reston VA Hydrology technician in a radioisotope laboratory.

Current Funded Principal Investigator Grants

- ***Quantitative Reconstruction of Past Drought Patterns in Western North America Using Lakes, Stable Isotopes, and Modeling:*** Collaborative research with Byron Steinman (Large Lakes Observatory, University of Minnesota, Duluth) and Michael Mann, (Pennsylvania State University)
- ***Deep Drilling of Lake Junín, Peru: Tropical Records of Glaciation, Climate Change, and Magnetic Field Variations Spanning the Late Quaternary.*** Collaborative research with Donald Rodbell (Union College), Pedro Tapia (Universidad Peruana Cayetano Heredia, Lima, Peru), David McGee (Massachusetts Institute of Technology), [Mark Bush \(Florida Institute of Technology\)](#), and [Joe Stoner \(Oregon State University\)](#). Rodbell and Abbott are the chief scientists on this project and are responsible for all aspects of funding and executing the drilling and science program.
- ***A Comparison of Lacustrine Carbonate $\delta^{18}\text{O}$ and Organic Matter δD from Drought Sensitive Lakes in the Western United States***
- ***The Lake Junin (Peru) Drilling Project:*** Collaborative research with Donald Rodbell (Union College) and Pedro Tapia (Universidad Peruana Cayetano Heredia, Lima, Peru). Rodbell and Abbott are the chief scientists on this project and are responsible for all aspects of funding and executing the drilling and science program. Other Co-PIs include: Mark Besonen (Texas A&M), David McGee (Massachusetts Institute of Technology), [Mark Bush \(Florida Institute of Technology\)](#), [Steve Colman \(University of Minnesota\)](#), [Pierre Francous \(Institut National de la Recherche Scientifique Centre Eau, Terre et Environnement, Quebec Canada\)](#), [Chris Moy \(University of Otago, New Zealand\)](#), [Pratigya Polissar \(Lamont Doherty Earth Observatory\)](#), [Antje Schwalb \(Technische Universität Braunschweig, Germany\)](#), [Byron Steinman \(Penn State University\)](#), [Joe Stoner \(Oregon State University\)](#) and [Blas Valero Garcés \(Instituto Pirenaico De Ecología Departamento de Procesos Geoambientales y Cambio Global, Spain\)](#).
- ***Towards an Understanding of the Holocene Paleomagnetic Record Through New Data (Hawaii/North American) and Time Series/Spherical Harmonic Model Comparisons:*** Collaborative research with Joseph Stoner, Chuang Xuan and Leah Ziegler (Oregon State University)

Past Funded Principal Investigator Grants

- ***The Holocene Paleomagnetic Record of the Arctic:*** Collaborative research with Joseph Stoner (Oregon State University)
- ***Documenting the Spatial Pattern of Drought in Western North America During the Holocene Using Lacustrine $\delta^{18}\text{O}$ and Lake Level Records***
- ***Spatial and Temporal Patterns of Drought in Western North America During the Holocene:*** Collaborative research with Joseph Ortiz (Kent State University)
- ***Nonlinear Response of the Arctic Climate System During the Holocene - ARCSS 8 ka project:*** Collaborative research with D. Kaufmann (Northern Arizona University), R. Bradley (University of Massachusetts), J. Briner (SUNY Buffalo), B. Finney (Idaho State University), F.S. Hu (University of Illinois), G. Miller, S. Lehman and Y. Axford (University of Colorado), B. Otto-Bliesner (NCAR), M. Wooller (University of Alaska, Fairbanks) and Z. Yu (Lehigh University)
- ***Seismic Survey of Lake Junin, Peru in Preparation for Deep Drilling:*** Collaborative research with D. Rodbell (Union College) and Steve Colman (University of MN at Duluth)
- ***Development of a Regional Stable Isotope Laboratory for Earth Science Research:*** Collaborative with E. Elliot, D. Bain and M. Rosenmeier

- **Acquisition of an Inductively Coupled Plasma - Mass Spectrometer (ICP-MS) for Research in Geochemical, Environmental, and Paleoenvironmental Geoscience:** Collaborative with E. Elliot, D. Bain and M. Rosenmeier
- **Workshop Proposal for Lake Junin, Peru, as a Potential International Continental Scientific Drilling Program (ICDP) Site:** Collaborative research with D. Rodbell (Union College).
- **Responses of Neotropical Vegetation to Past Climate Changes and Applications to Biodiversity Conservation:** Collaborative with V. Rull (Institut Botànic de Barcelona)
- **Late Holocene Climate of the Central Andes Identified from Sedimentary, Stable Isotopic, Geochemical and Biological Proxies:** Collaborative research and RUI with D. Rodbell (Union College)
- **Reconstruction of Pre-Incan Metallurgy Using Lake Sediments from Southern and Central Peru:**
- **A Synthesis of the Last 2000 Years of Climatic Variability from Arctic Lakes:** Collaborative research with D. Kaufmann (Northern Arizona University), J. Overpeck (University of Arizona), R. Bradley (University of Massachusetts), J. Briner (SUNY Buffalo), D. Francis (University of Massachusetts), F.S. Hu (University of Illinois), K. Hughen (Woods Hole), G. McDonald (University of California, Los Angeles), G. Miller (University of Colorado), B. Otto-Bliesner (NCAR), D. Porinchu (Ohio State University), M. Retelle (Bates College) and A. Werner (Mt Holyoke College)
- **Hydrologic Variability in the Pacific Northwest During the Past 13,000 Years from High-Resolution Studies of Finely Laminated Lake Sediments:** Collaborative research with B. Finney (University of Alaska, Fairbanks)
- **Documenting Holocene Paleohydrology Using Multiproxy Lake Core Studies in the Yukon Territory, Canada:** Collaborative research with B. Finney (University of Alaska, Fairbanks) and M. Edwards (University of Alaska, Fairbanks, now at the University of Southampton)
- **Biocomplexity in the Pacific Northwest: Salmon, Climate, and Hydrologic Variability:**
- **The Late Quaternary Water Balance of the Venezuelan Andes Inferred from Lake Records: Applications to the Interplay of Insolation and Ocean Circulation as Paleoclimatic Controls in the Tropics:** Collaborative research with A. Wolfe (University of Colorado, now at the University of Alberta)
- **Paleohydrology Across Central Alaska: A Multiproxy Approach to Lake-Level Records:** Collaborative research with B. Finney (University of Alaska, Fairbanks) and M. Edwards (University of Alaska, Fairbanks, now at the University of Southampton)
- **Holocene Paleohydrology of the Subtropical Andes from Lake Records:** Collaborative research with G. Seltzer (deceased, formally at Syracuse University)

Fellowships

- Department of Geology and Geophysics Fellowship, University of Minnesota, 9/95-11/95
- NSF Research Training Fellowship, University of Minnesota, 9/94-9/95
- Department of Geology and Geophysics, University of Minnesota, 9/91-6/92

Peer-Reviewed Publications

PDF downloads available at: <http://www.pitt.edu/~mabbott1/climate/mark/index.html> - see publications section

* University of Pittsburgh student or postdoc

** University of Massachusetts student

In Revision/Review

*Hillman, A.L., Abbott, M.B., JunQing Yu, J.Q., Bain, D.J., and Chiou-Pen, T.H. (in review). The Environmental Legacy of Early Copper Metallurgy and the Mongols Recorded in Lake Sediments in Yunnan, China. *Environmental Science and Technology*.

Mihindukulasooriya, L.N., Ortiz, J.D., *Pompeani, D.P., *Steinman, B.A., and Abbott, M.B. (in review). Reconstruction of Late Quaternary Paleohydrologic Conditions in Southeastern British Columbia Using Visible Derivative Spectroscopy of Cleland Lake Sediment. *Quaternary Research*.

Vining, B.R., *Steinman, B.A., and Abbott, M.B. (in revision). A Multiproxy Lacustrine Sedimentary Record of Late Glacial to Holocene Water Balance Changes from Lake Suches Situated in the Arid Western Cordillera of Peru. *Quaternary Research*.

2014

Ballesteros, T.M., Montoya, E. Vegas-Vilarrúbia, T., Giralt, S., Abbott, M.B., and Rull, V. (in press 2014). An 8700-Year Record of the Interplay of Environmental and Human Drivers in the Development of the Southern Gran Sabana Landscape, SE Venezuela. *The Holocene*.

*Finkenbinder, M.S., Abbott, M.B., *Steinman, B.S. Edwards, M.E., Langdon, C.T., and Finney, B.P. (2014). A 31,000 Year Record of Paleoenvironmental and Lake-Level Change from Harding Lake, Alaska. USA. *Quaternary Science Reviews* **87**, 98-113.

*Hillman, A.L., Yu J.Q., Abbott, M.B., *Cooke, C.A., Bain, D.J., and *Steinman, B.A. (in press 2014). Dynastic Transitions Correlated with Rapid Environmental Changes in Yunnan Province, China. *Quaternary Science Reviews*.

*Pompeani, D.P., Abbott, M.B., Bain, D.J., DePasqual, S., and *Finkenbinder, M.S. (in press 2014). Copper Mining on Isle Royale 6,500 to 5,400 Years Ago Identified Using Sediment Geochemistry from McCargoe Cove, Lake Superior. *The Holocene*.

Rodbell, D.T., Delman, E.M., Abbott, M.B., **Besonen, M.T., and Tapia, P.M. (2014). The Heavy Metal Contamination of Lake Junín National Reserve, Peru: An Unintended Consequence of the Juxtaposition of Hydroelectricity and Mining. *GSA Today* **24**, 4-10. doi: 10.1002/2014GL059499.

*Stansell, N.D., **Polissar, P.J, Abbott, M.B., Bezada, M., *Steinman, B.A., and Braun, C. (2014). Proglacial Lake Sediment Records Reveal Holocene Climate Changes in the Venezuelan Andes. *Quaternary Science Reviews* **89**, 44-55.

*Steinman, B.A., Abbott, M.B., Mann, M.E., and Ortiz, J.D., Song, F., *Stansell, N.D., **Anderson, L.A., Finney, B.P. and *Bird, B.W. (2014). Ocean-Atmosphere Forcing of Centennial Hydroclimate Variability in the Pacific Northwest. *Geophysical Research Letters*, **41**. doi: 10.1002/2014GL059499.

2013

- **Polissar, P.J., Abbott, M.B., Wolfe, A.P., Vuille, M., and Bezada, M. (2013). Synchronous Interhemispheric Holocene Climate Trends in the Tropical Andes. *Proceedings of the National Academy of Sciences*. doi: 10.7073/pnas.1219681110.
- *Pompeani, D.P., Abbott, M.B., *Steinman, B.A. and Bain, D.J. (2013). Lake Sediments Record Prehistoric Lead Pollution Related to Early Copper Production in North America. *Environmental Science and Technology* **47**, 5545-5552. doi: 10.1021/es304499c.
- *Stansell, N.D., Rodbell, D.T., Abbott, M.B. and Mark, B.G. (2013). Proglacial Lake Sediment Records of Holocene Climate Change in the Western Cordillera of Peru. *Quaternary Science Reviews* **70**, 1-14.
- *Stansell, N.D., *Steinman, B.A., Abbott, M.B., *Rubinov, M. and *Roman-Lacayo, M. (2013). Lacustrine Stable Isotope Record of Precipitation Changes in Nicaragua During the Little Ice Age and Medieval Climate Anomaly. *Geology*. doi: 10.1130/G33736.1.
- *Steinman, B.A. and Abbott, M.A. (2013). Isotopic and Hydrologic Responses of Small, Closed Lakes to Climate Variability: Hydroclimate Reconstructions from lake Sediment Oxygen Isotope Records and Mass Balance Models. *Geochimica et Cosmochimica Acta* **105**, 342-359.
- *Steinman, B.A., Abbott, M.A., *Nelson, D.B., *Stansell, N.D., Finney, B.P., Bain, D.J. and Rosenmeier, M.F. (2013). Isotopic and Hydrologic Responses of Small, Closed Lakes to Climate Variability: Comparison of Measured and Modeled Lake Level and Sediment Core Oxygen Isotope Records. (*Geochimica et Cosmochimica Acta* **105**, 455-471.
- Tibert, N.E., Hubeny, J.B., Abbott, M.B., Kiker, J.M., Walker, L.J. and McKenzie, S. (2013). Late Holocene Sedimentation and Paleoenvironmental History for the Tidal marshes of the Potomac and Rappahannock Rivers, Tributaries to the Chesapeake Bay. *Virginia Journal of Science* **63**, 91-109.

2012

- *Pompeani, D.P., *Steinman, B.A. and Abbott, M.B. (2012). A Sedimentary and Geochemical Reconstruction of Water Level Changes from Rantin Lake, Yukon Territory, Canada. *Journal of Paleolimnology* **48**, 147-158.
- Rodbell, D.T., Abbott, M.B. and the 2011 ICDP Lake Junin Working Group. (2012). ICDP Drilling of Lake Junin, Peru: Potential for Development of Continuous Tropical Climate Record Spanning more than 200 ka. *Scientific Drilling* **13**. doi: 10.2204/iodp.sd.13.10.2011.
- *Steinman, B.A., Abbott, M.B., Mann, M.E., *Stansell, N.D. and Finney, B.P. (2012). 1500-year Quantitative Reconstruction of Precipitation in the Pacific Northwest. *Proceedings of the National Academy of Sciences*. doi: 10.1073/pnas.1201083109.
- Vuille, M., Burns, S.J., Taylor, B.L., Cruz, F.W., *Bird, B.W., Abbott, M.B., Kanner, L.C., Cheng, H. and Novello, V.F. (2012). A Review of the South American Monsoon History as Recorded in Stable Isotopic Proxies Over the Past Two Millennia. *Climate of the Past Discussions* **8**, 637-668.

2011

- *Bird, B.W., Abbott, M.B., Vuille, M., Rodbell, D.T., Rosenmeier, M.F. and *Stansell, N.D. (2011). A 2300 Year Long Annually Resolved Record of the South American Summer Monsoon from the Peruvian Andes. *Proceedings of the National Academy of Sciences*. doi: 10.1073/pnas.1003719108.
- *Bird, B.W., Abbott, M.B., Vuille, M. and Rodbell, D.T. (2012). Holocene Tropical South American Hydroclimate Revealed from a Decadally Resolved Lake Sediment $\delta^{18}\text{O}$ Record. *Earth and Planetary Research Letters* **310**, 192-202.

- *Cooke, C.A., Balcom, P.H., Kerfoot, C., Abbott, M.B. and Wolfe, A.P. (2011). Pre-Columbian Mercury Pollution Associated with the Smelting of Argentiferous Ores in the Bolivian Andes. *Ambio* **40**, 18-25. doi: 10.1007/s13280-010-0086-4.
- *Nelson, D.B., Abbott, M.B., *Steinman, B.A., **Polissar, P.J., *Stansell, N.D., Ortiz, J.D., Rosenmeier, M.F., Finney, B.P. and Riedel, J. (2011). Drought Variability in the Pacific Northwest from a 6,000-Year Lake Sediment Record. *Proceedings of the National Academy of Sciences*. doi: 10.1073/pnas.1009194108.
- Montoya, E., Rull, V., *Stansell, N.D., Abbott, M.B., Nogué, S., *Bird, B.W., and Díaz, W.A. (2011). Forest-Savanna-*Morichal* Dynamics in Relation to Fire and Human Occupation in the Southern Gran Sabana (SE Venezuela) During the Last Millennium: Biogeographical Implications. *Quaternary Research* **76**, 335-344.
- Montoya, E., Rull, V., *Stansell, N.D., *Bird, B.W., Nogue, S., Vergas-Villarrubia, T., Abbott, M.B. and Diaz, W.A. (2011). Vegetation Changes in the Neotropical Gran Sababa (Venezuela) Around the Younger Dryas Chron. *Journal of Quaternary Science*. doi: 10.1002/jqs.1445.

2010

- Abbott, M.B., Edwards, M.E and Finney, B.P.. (2010). A 40,000-Year Record of Environmental Change from Burial Lake in Northwest Alaska. *Quaternary Research* **74**, 156-165.
- Rull, V., *Stansell, N.D., Montoya, E., Bezada M. and Abbott, M.B. (2010). Palynological Signal of the Younger Dryas in the Tropical Venezuelan Andes. *Quaternary Science Reviews* **29**, 3045-3056.
- *Stansell, N.D., Abbott, M. B., Rull, V, Rodbell, D.T., Bezada, M. and Montoya, E. (2010). Abrupt Younger Dryas Cooling in the Northern Tropics Recorded in Lake Sediments from the Venezuelan Andes. *Earth and Planetary Research Letters* **293**, 154-163.
- *Steinman, B.A., Rosenmeier, M.F., Abbott, M.B and Bain, D.J. (2010). The Isotopic and Hydrologic Response of Small, Closed-Basin Lakes to Climate Forcing from Predictive Models: Application to Paleoclimate Studies in the Upper Columbia River Basin. *Limnology and Oceanography* **55**, 2231-2245.
- *Steinman, BA., Rosenmeier, M.F. and Abbott, M.B. (2010). The Isotopic and Hydrologic Response of Small, Closed-Basin Lakes to Climate Forcing from Predictive Models: Simulations of Stochastic and Mean-State Precipitation Variations. *Limnology and Oceanography* **55**, 2246-2261.

2009

- *Bird, B.W., Abbott, M.B., *Kutchko, B. and Finney, B.P. (2009). A 2000-year Varve-Based Climate Record from the Central Brooks Range, Alaska. *Journal of Paleolimnology* **41**, 25-41.
- 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., Arctic Lakes 2k Project Members (Abbott, M., Axford, Y., *Bird, B., Birks, H.J.B., Bjune, A.E., Briner, J., Cook, T., Chipman, M., Francous, P., Gajewski, K., Geirsdóttir, Á., Hu, F.S., Kutchko, B., Lamoureux, S., Loso, M., MacDonald, G., Peros, M., Porinchu, D., Schiff, C., Seppä, H., Thomas, E. (2009). Recent Warming Reverses Long-Term Arctic Cooling. *Science* **325**. 1236-1239.
- Kurek, J., Cwynar, L.C., Ager, T.A., Abbott, M.B., Edwards, M.E. (2009). Paleoclimate of Western Alaska Inferred from Fossil Chironomids. *Quaternary Science Reviews* **28**, 799-811.
- Rull, V., Abbott, M. B., Vegas-Vilarrúbia, T., Bezada, M., Montoya, E., Nogué, S. and González, C. (2009). Paleoenvironmental Trends in Venezuela During the Last Glacial Cycle. In Sánchez-Villagra, M. R., Aguilera, O. and Carlini, A. (eds.), *Urumaco and Venezuelan*

Palaeontology - The Fossil Record of the Northern Neotropics. Indiana University Press, Indiana.

2008

- Abbott, M.B. and **Anderson, L. (2008). Lake-Level Fluctuations as an Indicator of Hydrological and Climatic Change. In: *Encyclopedia of Paleoclimatology and Ancient Environments*, V. Gornitz (ed.), Encyclopedia of Earth Science Series, Springer, Dordrecht, The Netherlands.
- **Besonen, M.R. Bradley, R.S., Mudelsee, M., Abbott, M.B. and Francous, P. (2008) A Thousand Year Record of Hurricanes from Boston, Massachusetts. *Geophysical Research Letters* **35**. DOI:1029/2008GL033950.
- **Besonen, M.R. Bradley, R.S., Francous, P., Stoner, J.S. and Abbott, M. (2008). A Record of Climate over the Last Millennium Based on Varved Lake Sediments from the Canadian High Arctic, *The Holocene* **18**, 169-180.
- *Cooke, C.A., Abbott, M.B. and Wolfe, A.P. (2008). Late-Holocene Atmospheric Lead Deposition in the Peruvian and Bolivian Andes. *The Holocene* **18**, 353-359.
- *Cooke, C.A. and Abbott, M.B. (2008). A Paleolimnological Perspective on Industrial-ERA Metal Pollution in the Central Andes, Peru. *Science of the Total Environment* **393**, 262-272. doi: 10.1016/j.scitotenv.2007.12.034.
- *Cooke, C.A., M.B. Abbott and A.P. Wolfe. (2008). Metallurgy in Southern South America. In: *Encyclopedia of the History of Science, Technology, and Medicine in Non-Western Cultures Vol. 2*, H. Seline (ed.), Kluwer Science, Dordrecht, The Netherlands.
- Francous, P., Bradley, R.S., Lewis, T., Abbott, M.B., Retelle, M. and Stoner, J.S. (2008). Limnological and Sedimentary Processes at Sawtooth Lake, Canadian High Arctic, and Their Influence on Varve Formation. *Journal of Paleolimnology* **40**, 963-985.
- Rodbell, D.T., Seltzer, G.O., Mark, B.G., Smith, J.A. and Abbott, M.B. (2009). Clastic Sediment Flux to Tropical Andean Lakes: Records of Glaciation and Soil Erosion. *Quaternary Science Reviews* **27**, 1612-1626.

2007

- **Anderson, L., Abbott, M.B., and Finney, B.P. and Burns, S.J. (2007). Late Holocene Moisture Balance Variability in the Southwest Yukon Territory, Canada. *Quaternary Science Reviews* **26**, 130-140.
- *Cooke, C.A., Abbott, M.B., Wolfe, A.P. and Kittleson, J.L. (2007). A Millennium of Metallurgy Recorded by Lake Sediments in Morococha, Peruvian Andes. *Environmental Science and Technology* **41**, 3469-3474.
- *Stansell, N.D., **Polissar, P.J. and Abbott, M.B. (2007). Last Glacial Maximum Equilibrium-Line Altitude and Paleo-Temperature Reconstructions for the Cordillera de Mérida, Venezuelan Andes. *Quaternary Research* **67**, 115-127.
- *Stansell, N.D., Abbott, M. B., **Polissar, P. J., Wolfe, A. P., Rull, V. and Bezada, M. (2007). Reply: Late Quaternary Deglacial History of the Merida Andes, Venezuela: Response to Comment. *Journal of Quaternary Science*. Doi: 10.1002/jqs.1109.

2006

- **Polissar, P.J., Abbott, M.B., Wolfe, A.P., Bezada, M., Rull, V. and Bradley, R.S. (2006). Solar Modulation of Little Ice Age Climate in the Tropical Andes. *The Proceedings of the National Academy of Sciences* **103**, 8937-8942.
- **Polissar, P.J., Abbott, M.B., Shemesh, A., Wolfe, A.P. and Bradley, R.S. (2006). Holocene Hydrologic Balance of Tropical South America from Oxygen Isotopes of Lake Sediment Opal, Venezuelan Andes. *Earth and Planetary Science Letters* **242**, 375-389.

2005

- **Anderson, L., Abbott, M.B., Finney, B.P. and Edwards, M.E. (2005). Paleohydrology of the Southwest Yukon Territory, Canada, Based on Multiproxy Analyses of Lake Sediment Cores from a Depth Transect. *The Holocene* **15**, (8).
- **Anderson, L., Abbott, M.B., Finney, B.P. and Burns, S. (2005). Regional Atmospheric Circulation Change in the North Pacific during the Holocene Inferred from Lacustrine Carbonate Oxygen Isotopes, Yukon Territory, Canada. *Quaternary Research*, **64**, 21-35.
- Bush, M.B., Hansen, B.C.S., Rodbell, D., Seltzer, G.O., Young, K.R., Leon, B., Abbott, M.B., Silman, M.M.R. and Gosling, W.D. (2005). A 17,000 Year History of Andean Climate and Vegetation Change from Laguna de Chochos, Peru. *Journal of Quaternary Science* **20**, 703-714.
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- *Stansell, N.D., Abbott, M. B., **Polissar, P. J., Wolfe, A. P., Rull, V. and Bezada, M. (2005). Late Quaternary Deglacial History of the Merida Andes, Venezuela. *Journal of Quaternary Science* **20**, 801-812.

2004

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2003

- Abbott, M.B. and Wolfe, A. (2003). Intensive Pre-Incan Metallurgy Recorded by Lake Sediments from the Bolivian Andes. *Science* **301**, 1893-1895.
- Abbott, M.B., Wolfe, B., Wolfe, A.P., Seltzer, G.O., Aravena, R., Mark, B.G., **Polissar, P.J., Rodbell, R.T., Rowe, H.D. and Vuille, M. (2003). Holocene Paleohydrology and Glacial History of the Central Andes using Multiproxy Lake Sediment Studies. *Palaeogeography, Palaeoclimatology, Palaeoecology* **194**, 123-138.
- Hansen, B.S.C., Rodbell, D.T., Seltzer, G.O., Leon, B., Young, K.R. and Abbott, M.B. (2003). Late-Glacial and Holocene Vegetation History from Two Sites in the Western Cordillera of Southwestern Ecuador. *Palaeogeography, Palaeoclimatology, Palaeoecology* **194**, 79-108.

2002

- Francous P., Bradley R., Abbott M.B., **Patridge W. and Keimig F. (2002). Paleoclimate Studies of Minerogenic Sediments Using Annually Resolved Textural Parameters. *Geophysical Research Letters* **29**, 20, 1998, doi:10.1029/2002GL015082.
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2001

- **Anderson, L., Abbott, M.B. and Finney, B.P. (2001). Holocene Climate Inferred from Oxygen Isotope Ratios in Lake Sediments, Central Brooks Range, Alaska. *Quaternary Research* **55**, 313-321.
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- Wolfe, B.B., Aravena, R., Abbott, M.B., Seltzer, G.O. and Gibson, J.J. (2001). Reconstruction of Paleohydrology and Paleohumidity from Oxygen Isotope Records in the Bolivian Andes. *Palaeogeography, Palaeoclimatology, Palaeoecology* **176**, 177-192.

2000

- Abbott, M.B., Wolfe, B., Aravena, R., Wolfe, A.P. and Seltzer, G.O. (2000). Holocene Hydrological Reconstructions from Stable Isotopes and Palaeolimnology, Cordillera Real, Bolivia. *Quaternary Science Reviews* **19**, 1801-1820.
- Abbott, M.B., Finney, B.P., Edwards, M. and Kelts, K.R. (2000). Paleohydrology of Birch Lake, Central Alaska: Lake-Level Reconstructions Using Seismic Reflection Profiles and Core Transect Approaches. *Quaternary Research* **23**, 154-166.

1999

- Rodbell, D.T., Seltzer, G.O., Anderson, D.M., Abbott, M.B., Enfield, D.B. and Newman, J.H. (1999). An ~15,000-Year Record of El-Niño Alluviation in Southwestern Ecuador. *Science* **283**, 516-520.

1997

- Abbott, M.B., Binford, M.W., Brenner, M. and Kelts, K.R.. (1997). A 3500 ¹⁴C yr High-Resolution Record of Lake Level Changes in Lake Titicaca, Bolivia/Peru. *Quaternary Research* **47**, 169-180.
- Abbott, M.B., Seltzer, G.O., Kelts, K.R. and Southon, J. (1997). Holocene Paleohydrology of the Tropical Andes from Lake Records. *Quaternary Research* **47**, 70-80.
- Binford, M.W., Kolata, A.L., Brenner, M., Janusek, J., Abbott, M.B. and Curtis, J. (1997). Climate Variation and the Rise and Fall of an Andean Civilization. *Quaternary Research* **47**, 171-186.

1996

- Abbott, M.B. and Stafford, T.W. (1996). Radiocarbon Geochemistry of Ancient and Modern Arctic Lakes, Baffin Island. *Quaternary Research*. **45**, 300-311.

1993

- Seltzer, G.O., Rodbell, D.T. and Abbott, M.B. (1995). Andean Glacial Lakes and Climate Variability Since the Last Glacial Maximum. *Bull. Inst fr. études andines* **24**, 539-549.

Recent Meeting Abstracts and Presentations

2014

- *Albert, A.L., *Hillman, A.L., Abbott, M.B., *Cooke, C.A., Corella, J.P., and Valero-Garces, B. (2014). Human History and Ecological Change as Recorded in Lake Sediments from the Spanish Central Pyrenees. NEGSA meeting, Lancaster, March.
- Barreiro-Lostres, F., Moreno-Caballud, A., Giralt, S., *Hillman, A.L., Brown, E.T., Abbott, M.B., and Valero-Garces, B.L. (2014). Human Impact on Biogeochemical Cycles and Deposition Dynamics in Karstic Lakes: El Tobar Lake Record (Central Iberian Range, Spain). AGU National Meeting, San Francisco. December.
- *Coughlin, J.G., *Pompeani, D.P., *Hillman, A.L., and Abbott M.B. (2014). An 850-Year Record of Human and Environmental Change Near the Mississippian-Era City of Moundville (Alabama) from Lake Sediment Geochemistry. NEGSA meeting, Lancaster, March.
- *Finkenbinder, M.S., Abbott, M.B., Dorfman, J., Finney, B.P., and Stoner, J.S. (2014). 1,500-year cycle in Holocene Climate from Burial Lake, Arctic Alaska. AGU National Meeting, San Francisco. December.
- *Hillman, A.L., Abbott, M.B., Yu, J.Q., and Bain, D.J. (2014). Quantifying the Environmental Legacy of Early Human Impacts to Lakes in Southwestern China. Culture, Climate and Environment Interactions at Prehistoric Sites. Bern, Switzerland, June.
- *Hillman, A.L., Abbott, M.B., Yu, J.Q., Bain, D.J., and Chiou-Peng, T.H. (2014). Long Term Atmospheric and Erosional Pollution as Recorded in Lake Sediments from Yunnan, China. AGU National Meeting, San Francisco. December.
- *Larsen, D.J., Abbott, M.B., and **Polissar, P.J. (2014). Late Pleistocene and Holocene Hydroclimate Variability in the Tropical Andes from Alpine Lake Sediments, Cordillera de Mérida, Venezuela. AGU National Meeting, San Francisco. December.
- *McDermott, R.G., *Finkenbinder, M.S., *Pompeani, D.P., and Abbott, M.B. (2014). An 11,000-Year Record of Hydroclimate Variability from Rock Lake, Montana. NEGSA meeting, Lancaster, March.
- *Pompeani, D.P., Abbott, M.B., Bain, D.J., DePasqual, S., and *Finkenbinder, M.S. (2014). Copper Mining Pollution Detected on Isle Royal in Lake Superior Between 6500 and 5400 Years Ago Using Sediment Geochemical Studies. AGU National Meeting, San Francisco. December.
- Reilly, B., Stoner, J.S., Hatfield, R., Abbott, M.B., *Larsen, D.J., *Hillman, A.L., (2014). A 33 kyr Paleomagnetic Secular Variation Record from Fish Lake, Utah. AGU National Meeting, San Francisco. December.
- Stoner, J.S., Ziegler, L., Abbott, M.B., *Finkenbinder, M.S., *Hillman, A.L., Hatfield, R., and Strano, S. (2014). Does the Mantle Impose a Structure on the Geodynamo that Dictates Paleo-Geomagnetic Behavior? New Results from Fish Lake Oregon. EGU International Meeting, Vienna, Austria. April.
- Stoner, J.S., Ziegler, L., Reilly, B., Francous, P., Abbott, M.B., Cook, T., and Bradley, R.S. (2014). Holocene Paleomagnetic Secular Variation (PSV) and Paleointensity (PI): Influence of the High Latitude Flux on the Tangent Cylinder. AGU National Meeting, San Francisco. December.
- Ziegler, L.B., Stoner, J.S., Abbott, M.B., *Finkenbinder, M.S., Hatfield, R.G., Konyndyk, D., Reilly, B., and *Hillman, A.L. (2014). A Holocene Paleomagnetic Record from Fish Lake, Oregon. AGU National Meeting, San Francisco. December.

2013

- Abbott, M.B., *Steinman, B.A., Mann, M.E., Ortiz, J.D., **Anderson, L. and Finney, B.P. (2013). A Review of Current and Future work on Lacustrine Stable Isotope Records of Drought in Western North America. Pacific Climate Workshop, March, Santa Monica.
- Mihindukulasooriya, L.N., Ortiz, J. D., Abbott M.B., *Steinman, B.S., and *Pompeani. D.P. (2013). A Multiproxy Reconstruction of Paleoproductivity of Cleland Lake British Columbia, Canada. AGU National Meeting, San Francisco. December.
- *Finkenbinder, M.S., *Pompeani, D.P., and Abbott, M.B. (2013). A 10,900-Year Lacustrine Record of Hydroclimate Variability Inferred from Stable Isotope Analysis of Authigenic Carbonate, West-Central Newfoundland, Canada. AGU National Meeting, San Francisco. December.
- Gehrman, R., *Bird, B.W., Abbott, M.B., *Stansell, N.D., Rodbell, D.T., and *Steinman, B.A. (2013). Holocene-Scale Trends in Andean South American Summer Monsoon Variability Inferred from a Coupled Lake System in the central Peruvian Andes. AGU National Meeting, San Francisco. December.
- **Polissar, P.J., Liu, C., Rodbell, D.T., and Abbott, M.B. (2013). Late-Quaternary Plant-Wax-Based Isotope Paleohydrology of Lake Junin, Peru: Plants Versus Water. AGU National Meeting, San Francisco. December.
- *Pompeani, D.P., *Steinman, B.A., Abbott, M.B., Ortiz, J.D., *Stansell, N.D., and *Cwiklik J.P. (2013).. A 7600-Year High-Resolution Record of Hydroclimate Variability from Oxygen Isotopes in Authigenic Carbonate Lake Sediment: Cleland Lake, Southeastern British Columbia. AGU National Meeting, San Francisco. December.
- Rodbell, D.T., Abbott, M.B., *Stansell, N.D. and *Bird, B.W. (2013). High-Resolution $\delta^{18}\text{O}$ Records of Hydrologic Variability from the South-Central Peruvian Andes. NE GSA, Hartford, CT. March.
- *Stansell, N.D., Rodbell, D.T., Licciardi, J., Abbott, M.B., Mark, B.G., and Schweinsberg, A. (2013). Proglacial Lake Sediments, Cosmogenic Ages and Stable Isotopes Reveal Holocene Climate Changes in the Peruvian Andes. AGU National Meeting, San Francisco. December.
- *Steinman, B.A., Abbott, M.B., Mann, M.E., Ortiz, J.D., **Anderson, L. and Finney, B.P. (2013). A 2000 Year Synthesis of Closed Lake Oxygen Isotope Records from the Pacific Northwest. Pacific Climate Workshop, March, Santa Monica.

2012

- Dellman, E., Rodbell, D.T., **Besonen, B and Abbott, M.B. (2012). Metal Deposition in the Sediments of Lake Junin, Peru. NE GSA, Hartford, CT. March.
- *Hillman, A., Abbott, M.B., Yu, J.Q. and *Steinman, B.A. (2012). A Lake Sediment Record of Climate Change and Human-Environment Interactions in Southwestern China. AGU National Meeting, San Francisco. December.
- *Finkenbinder, M.S., Abbott, M.B. and Stoner, J.S. (2012). A Multi-Proxy Geochemical Investigation of Late-Quaternary Paleoenvironmental Change from Burial Lake, Noatak National Preserve, Alaska. AGU National Meeting, San Francisco. December.
- Hollingshead, K., Moser, K., Abbott, M.B., and *Steinman, B.A. (2012). Diatoms in Castor Lake (North-central Washington, USA): Proxies of Drought. PALS annual meeting, March.
- Mihindukulasooriya, L.N., Ortiz, J. D., Abbott M.B., *Pompeani. D. P. (2012). Reconstruction of Holocene Hydrologic Variability, Using Laminated Lake Sediments from Cleland Lake, South Eastern British Columbia, Canada. NE GSA, Hartford, CT. March.
- Vuille, M., Cruz, F.W., Abbott, M.B., *Bird, B.W., Burns, S.J., Cheng, H., Colose, C., Kanner, L.C., LeGrande, A., Novello V.F. and Taylor, B. (2012) South American Monsoon Variability

During the Past 2,000 years from Stable Isotopic Proxies and Model Simulations. AGU National Meeting, San Francisco. December.

2011

- Ballesteros T., Vegas-Villarúbia, T., Rull R., Montoya E., *Stansell N., *Bird B. and Abbott, M.B. (2011). Late Holocene Environmental Changes Based on Diatom and Pollen Records from Lake Sediments of Laguna Encantada, in the Neotropical Gran Sabana (Venezuelan Guayana). International Union for Quaternary Research, Bern, Switzerland, July.
- Brenizer, L.E., Ortiz, J.D., Abbott, M.B. and Crane, R.E. (2011), Drought History of Scout Lake During the Holocene Based on Sediment Lightness.
- Dorman, J.M., Stoner, J., *Finkenbinder, M, Abbott, M.B. and Xuan, C. (2011). A 37,000-yr record of Paleomagnetic and Environmental Variability from Burial Lake, Arctic Alaska. AGU National Meeting, San Francisco. December.
- *Finkenbinder, M.S. and Abbott, M.B. (2011). A Paleolimnological Study of Late-Quaternary Environmental Change from Harding Lake, Alaska. Arctic Workshop, Montreal, Canada. March.
- *Finkenbinder, M.S. and Abbott, M.B. (2011). A Lacustrine Record of late-Quaternary Environmental Change from Harding Lake, Alaskan Interior. NE GSA, Pittsburgh, PA. March.
- *Hillman, A. and Abbott, M.B. (2011). A 2500 Year Lake Sediment Record of Drought and Human Activity From Southwestern China. NE GSA, Pittsburgh, PA. March.
- Mihindikulasooriya L.N., Ortiz, J. D., Abbott M.B. and *Pompeani D. (2011). Assessment of Lake Sediment Composition and Productivity Using High Resolution Diffuse Spectral Reflectance Data from Cleland Lake, Southwestern Canada. NE GSA, Pittsburgh, PA, March.
- Montoya, E., Rull, V., *Stansell, N.D. and Abbott, M.B. (2011). The Younger Dryas in the Neotropics: Paleocological Evidence from Venezuela. International Union for Quaternary Research, Bern, July.
- Hollingshead, K., Moser, K. and Abbott, M. (2011). Investigating Drought in Northern Washington Using Diatoms Preserved in Lake Sediments. International Union for Quaternary Research, Bern, Switzerland, July.
- *Pompeani, D.P. and Abbott, M.B. (2011). Early Holocene Lake-Level Reconstruction from Rantin Lake in the Southern Yukon Territory, Canada. Arctic Workshop, Montreal, Canada, March.
- *Pompeani, D.P., Abbott, M.B., Bain, D.J., *Steinman, B.A. and Purcell, C.C. (2011). An 11,000 Year Fire History of the Keweenaw Peninsula from Copper Falls Lake. NE GSA, Pittsburgh, PA. March.
- Rull, V., Abbott, M.B., Vegas-Vilarrúbia, T., Bezada, M., Montoya, Encarni, Nogué, S. and González, C. (2011). Paleoenvironmental Trends in Venezuela During the Last Glacial Cycle. International Union for Quaternary Research, Bern, July.

2010

- Hollingshead, K., Moser, K., and Abbott, M.B. (2010). Investigating Climate Change in Western North America. PALS Annual Meeting, Kinston Ontario.
- *Pompeani, D.P., Abbott, M.B., Ortiz, J.D. and Bain, D.J. (2010). A 370 Year Varve-Based Climate Reconstruction from Linnevatnet on Western Svalbard. International Polar Year Meeting, Oslo Norway.

- Shue, B.D., *Pompeani, D.P., Abbott, M.B., Monecke, K., Ortiz, J.D. and Stoner, J. (2010). Prehistoric Tsunami Deposits Along the Oregon Coast: Evidence from a Coastal Lake in Tillamook County, Oregon. Pittsburgh Geological Society, Pittsburgh.
- *Stansell, N.D., Abbott, M. B., Rull, V., Rodbell, D.T., Bezada, M., and Montoya, E. (2010). Abrupt Bølling-Allerød Warming and Younger Dryas Cooling Recorded in Lake Sediments from the Northern Tropical Venezuelan Andes. International Glaciological Society, Columbus, Ohio.
- *Steinman, B.A., Abbott, M. B., Rosenmeier, M.F. and *Stansell, N.D. (2010). A 6000 Year, Quantitative Reconstruction of Precipitation Variability in Central Washington from Lake Sediment Oxygen Isotopes and Predictive Models. AGU National Meeting, San Francisco. December.

2009

- Cwynar, L.C., Kurek, J., Abbott, M.B., Ager, T.A., Barley, E., Edwards, M.E., Finney, B.P., Irvine, F., Pedersen, C., Pienitz, P., Racca, J., Stepanovic, L., and Walker I.R. (2009). Late-Quaternary Paleoclimate of Eastern Beringia. CANQUA, Simon Frasier University.
- Montoya, E., Rull, V., Stansell, N.D., Bird, B.W., Nogué, S., Vegas-Vilarrúbia, T., Abbott, M.B. and Díaz, W.A. (2009). Rapid Vegetation Changes in the Neotropical Gran Sabana During the Younger Dryas Chron. International Paleolimnology Association, Guadalajara, Mexico.
- **Polissar, P.J., Abbott, M.B., Wolfe, A. P., Bezada, M., and Vuille, M. (2009). The Role of Insolation and the Equatorial Pacific in South American Climate during the Holocene: A Paleoclimate Record from Laguna Blanca, Venezuela. AGU National Meeting, San Francisco.
- *Pompeani, D.P., Abbott, M.B., Ortiz, J.D., Bain, D.J. and **Smith, S.V. (2009). A Varve-Based Summer Temperature Reconstruction from 1635 AD to Present Using Proglacial Lake Sediments on Western Svalbard. Arctic Workshop, Lewiston, ME.
- Steinman, B.A., Rosenmeier, M.F. and Abbott, M.B. (2009). Numerical Model Simulations of Small Closed Basin Lake Sediment Core $\delta^{18}\text{O}$ Records from the Upper Columbia River Basin Over the Last Millennium and Implications for a Mid-Holocene 'Mega drought'. AGU National Meeting, San Francisco.

Recent Geological Fieldwork

- July 20- Aug. 10, 2014. Utah: Cored Blind Lake and Tony Grove Lake.
- June 19-July 9, 2014. Spain: Cored Laguna Royal and sampled waters.
- February 15-22, 2014. Utah: Fish Lake UT coring with UWITEC system.
- November 9-17, 2013. China Lake Qinghai sampling.
- July 12-Aug 26, 2013. Western US: Fieldwork in Oregon, Nevada, and New Mexico coring lakes.
- June 30-July 8, 2013. Spain: Cored lakes and sampled existing cores.
- May 6-10, 2013. Western PA coring Pleasant and LaBoeuf Lakes.
- August 9-21, 2012. Newfoundland Canada. Coring lakes with carbonate sediments for drought records.
- June 22-July 8, 2012. Yunnan Province China. Coring lakes in drought prone regions.
- June 8-June 20, 2012. Isle Royal National Park, MI. Coring lakes associated with ancient Cu deposits.
- May 19-June 6, 2012. Ellesmere Island, Canada. UWITEC coring on Sawtooth Lake.
- August 20-September 3, 2011. Spain: Water and sediment samples for metal analysis.

- June 22-August 2, 2011. Western US: Fieldwork in New Mexico, Utah, Wyoming, Montana coring lakes.
- May 20-May 31, 2011. Junin Peru: Seismic survey of lake.
- November 6-9, 2010. Cahokia, Illinois: Cored swamps surrounding the mound structures.
- July 13 – August 27, 2010. Oregon, Washington, British Columbia and Alberta: Collected lake cores and modern samples from 50 sites.
- June 27-July 10, 2010. Brooks Range of Alaska: Collected cores from Burial Lake
- June 17 – June 26, 2010. UP of Michigan: Collected cores from 3 lakes for metallurgy studies.
- March 6-13, 2010. Mondsee, Austria: Used UWITEC corer on Austrian lakes.
- March 20-31, 2010. Interior Alaska: Cored Harding Lake with UWITEC coring system.
- August 13-29, 2009. Yunnan Province China: Collected sediment cores to study the history of ancient metallurgy
- July 7 – August 7, 2009. Oregon, Washington, British Columbia and Alberta: Collected lake cores and modern samples from 20 sites.
- August 2008 Lake Superior Basin: Collected sediment and waters samples for pollution history.
- July 2008 Chesapeake Bay: Collected sediment cores to study Holocene sea level history.
- April and May 2008. Peruvian Andes: Collected sediment cores from the central Andes.

Recent Collaborators

- Lesleigh Anderson (USGS Denver)
- Daniel Bain (Pitt)
- Mark Besonen (Texas A&M, Corpus Christy)
- Maximiliano Bezada (The National Institute of Geology and Mines, Caracas Venezuela)
- Broxton Bird (Indiana University Perdue University, Indianapolis)
- Raymond Bradley (University of Massachusetts)
- Colin Cooke (Alberta Environment and Sustainable Resource Development)
- Mary Edwards (University of Southampton)
- Bruce Finney (Idaho State University)
- Darren Larsen (Pitt)
- Michael Mann (Penn State University)
- David McGee (MIT)
- Joseph Ortiz (Kent State)
- Pratigya Polissar (Lamont Dorothy)
- Mike Retelle (Bates College)
- Donald Rodbell (Union College)
- Valentí Rull (Universitat Autònoma de Barcelona)
- Joseph Stoner (Oregon State University)
- Nathan Stansell (Northern Illinois University)
- Byron Steinman (University of Minnesota, Duluth)
- Neil Tibert (University of Mary Washington)
- Blas Valero Garces (Instituto Pirenaico de Ecología CSIC, Zaragoza, Spain)
- Mathias Vuille (University of Albany)
- Alexander Wolfe (University of Alberta)

Teaching Experience University of Pittsburgh

2014 - 2015 Academic Year

- Techniques in Paleoenvironmental Analyses (GEOL-3931) (undergrad and grad) co-taught with Josef Werne
- Geologic Odyssey (GEOL-2001) Writing class for incoming graduate students
- Paleoclimatology (GEOL-1052/2049) (undergrad and grad)

2013 - 2014 Academic Year

- Geology (GEOL-0800) - College of General Studies (CAS) (undergrad)
- Techniques in Paleoenvironmental Analyses (GEOL-3931) (undergrad and grad) co-taught with Josef Werne
- Environmental Geology (GEOL-0860) (summer) (undergrad)

2012 - 2013 Academic Year

- Geology (GEOL-0800) (undergrad)
- Geology (GEOL-0800) (CAS) (undergrad)
- Techniques in Paleoenvironmental Analyses (GEOL-3931) (undergrad and grad)
- Stable Isotopes and Water (GEOL-3906) (grad)
- Environmental Geology (GEOL-0860) (CAS) (undergrad)

2011 - 2012 Academic Year

- Geology (GEOL-0800) (undergrad)
- Geology (GEOL-0800) (CAS) (undergrad)
- Techniques in Paleoenvironmental Analyses (GEOL-3931) (undergrad and grad)
- Paleoclimatology (GEOL-1052/2049) (undergrad and grad)
- Environmental Geology (GEOL-0860) (CAS) (undergrad)

2010 - 2011 Academic Year

- Geology (GEOL-0800) (CAS) (undergrad)
- Paleolimnology (GEOL-3925) (grad)
- Techniques in Paleoenvironmental Analyses (GEOL-3931) (undergrad and grad)
- Geomorphology and Glacial Geology (GEOL-1060) (undergrad)
- Environmental Geology (GEOL-0860) (CAS) (undergrad)

2009 - 2010 Academic Year

- Sedimentology and Stratigraphy (GEOL-1020) (undergrad)
- Techniques in Paleoenvironmental Analyses (GEOL-3931) (undergrad and grad) co-taught with Michael Rosenmeier
- spring and summer semesters Environmental Geology (GEOL-0860) (undergrad)
- Paleoclimatology (GEOL-1052/2049) (undergrad and grad)

2008 - 2009 Academic Year

- Sedimentology and Stratigraphy (GEOL-1020) (undergrad)
- Techniques in Paleoenvironmental Analyses (GEOL-3931) (undergrad and grad) co-taught with Michael Rosenmeier
- Geology (GEOL-0800) (undergrad)
- spring and summer semesters Environmental Geology (GEOL-0860) (undergrad)

2007 - 2008 Academic Year

- Sedimentology and Stratigraphy (GEOL-1020) (undergrad)
- Techniques in Paleoenvironmental Analyses (GEOL-3931) (undergrad and grad) co-taught with Michael Rosenmeier
- spring and summer semesters Environmental Geology (GEOL-0860) (undergrad)
- Paleoclimatology (GEOL-1052/2049) (undergrad and grad)

2006 - 2007 Academic Year

- Sedimentology and Stratigraphy (GEOL-1020) (undergrad)
- Techniques in Paleoenvironmental Analyses (GEOL-3931) (undergrad and grad) co-taught with Michael Rosenmeier
- Natural Disasters (GEOL-0820) (undergrad)
- Geomorphology and Glacial Geology (GEOL-1060) (undergrad)
- Paleolimnology (GEOL-3925) (grad)
- Environmental Geology (GEOL-0860) (undergrad)

2005 - 2006 Academic Year

- Sedimentology and Stratigraphy (GEOL-1020) (undergrad)
- Techniques in Paleoenvironmental Analyses (GEOL-3931) (undergrad and grad) co-taught with Michael Rosenmeier
- Paleoclimatology (GEOL-1052/2049) (undergrad and grad)
- Andean Lakes and Environmental Change (grad)

2004 - 2005 Academic Year

- Sedimentology and Stratigraphy (GEOL-1020) (undergrad)
- Geomorphology and Glacial Geology (GEOL-1060) (undergrad)
- Techniques in Paleoenvironmental Analyses (GEOL-3931) (undergrad and grad) co-taught with Michael Rosenmeier

2003 - 2004 Academic Year

- Sedimentology and Stratigraphy (GEOL-1020) (undergrad)
- Techniques in Paleoenvironmental Analyses (GEOL-3931) (undergrad and grad)
- Paleoclimatology (GEOL-1052/2049) (undergrad and grad)
- Andean Lakes and Environmental Change (grad)

2002 - 2003 Academic Year

- Sedimentology and Stratigraphy (GEOL-1020) (undergrad)
- Paleolimnology (GEOL-3925) (grad)
- Geomorphology and Glacial Geology (GEOL-1060) (undergrad)

2001 - 2002 Academic Year

- Arrived in Pittsburgh in October
- Paleoclimatology (GEOL-1052/2049) (undergrad and grad)

Teaching Experience University of Massachusetts

- Geochronology 591-A, Spring Semester, 1996
- Earth System Science 329-E, Spring Semester, 1997
- Paleolimnology / Paleoclimatology seminar 591-Z, Fall Semester, 1998
- The Earth 101, Spring Semester, 2000

University of Pittsburgh Postdocs

Current

Darren Larsen Ph.D. University of Colorado

- Dates: 1/1/14-present
- Research area: Organic geochemical methods for drought reconstruction from lakes in western North America and the Venezuelan Andes.

Former

Byron Steinman, Ph.D. University of Pittsburgh

- Dates: 5/1/14-7/31/14
- Research area: Stable isotopes and modeling for drought reconstruction from lakes in western North America and the Peruvian Andes.

- Starting as assistant Professor at the University of Minnesota in Sept 2014
- Colin Cooke Ph.D. University of Alberta
- Dates: 1/1/13-7/1/13
 - Research area: Geochemical and stable isotope approaches to examine metal pollution by ancient people from lake sediment studies in western Peru, China, and Spain.
 - Current Position: Limnologist Alberta Environment and Sustainable Resource Development

University of Pittsburgh Graduate Students

Current

Aubrey Hillman – Ph.D. Candidate. Masters from Pitt (April 2011), to defend spring 2014

- Dates: Started masters September 2009 and Ph.D. in August of 2012
- Role: Advisor
- Research Topic: Lake sediment records examining the spatial and temporal variations of human-environment interactions in southwestern China

Charles Kruger - Ph.D. Student

- Dates: Started September 2014
- Role: Advisor
- Research Topic: Organic geochemistry and hydrogen isotope records of drought from lakes in western North America

David Pompeani - Ph.D. Candidate to defend spring 2014

- Dates: Started January 2009
- Role: Advisor
- Research Topic: Holocene climate change and human land use disturbances in North America from lake sediment geochemistry

Matt Finkenbinder - Ph.D. Candidate to defend spring 2014

- Dates: Started January 2010
- Role: Advisor
- Research Topic: Lake sediment records of late-Quaternary paleoclimate change from Alaska and Newfoundland developed using sedimentology and geochemical proxies

Arielle Woods - Ph.D. Student

- Dates: Started September 2014
- Role: Advisor
- Research Topic: Isotope record of climate change from Lake Junin isotope drill cores

Former

- Kaitlin Clark –defended masters November of 2012. Thesis title: “A 1,000-Year Oxygen Isotopic Record of South American Hydroclimate from Lake Junin in the Central Andes of Peru”. Doing environmental consulting in Denver, CO.
- Byron Steinman defended his Ph.D. in April of 2011. Title of Ph.D. dissertation: “Quantitative Drought Reconstruction in the Pacific Northwest from Lake Sediment Records and Predictive Models“. Went on to get an NSF-EAR Postdoc and worked with Michael Mann at Penn State before getting a tenure track assistant professor position at the University of Minnesota, Duluth in the Large Lakes Observatory and Department of Earth and Environmental Sciences starting in September of 2014.
- Aubrey Hillman defended her masters in April of 2011. Title of masters dissertation: “A 2500 Year Lake Sediment Record of Drought and Human Activity from Southwestern China”. Completing her Ph.D. with me at Pitt working on Chinese climate records.
- Broxton Bird defended his Ph.D. in June of 2009. Title of Ph.D. dissertation: “Millennial- to Interannual-Scale Holocene Climate Change in the Alaskan Arctic and Tropical Andes Inferred

from Physical Sedimentology and Geochemical Indicators Preserved in Finely Laminated Alpine Lake Sediment Archives“. Received a Byrd Postdoctoral Fellow at the Byrd Polar Research Center at Ohio State University with Dr. Lonnie Thompson and is currently in a tenure track assistant professor position in the Department of Earth Sciences at Indiana University-Perdue University, Indianapolis.

- Nathan Stansell defended his Ph.D. in April of 2009 and his masters in April 2005. Title of Ph.D. dissertation: “Rapid Climate Change in the Tropical Americas During the Late-Glacial Interval and the Holocene“. Masters title: “Late Glacial Maximum Equilibrium-Line Altitude Reconstructions, Paleo-Temperature Estimates and Deglacial Chronology of the Méridia Andes, Venezuela“. Received a Byrd Postdoctoral Fellow at the Byrd Polar Research Center at Ohio State University with Dr. Bryan Mark and is currently a tenure track assistant professor in the department of Geology and Environmental Geosciences at Northern Illinois University.
- Brianne Cassidy defended her masters in December 2008. Thesis title: “A 94-Year Lake Sediment Record of Industrial Pollutants in the Pittsburgh Metropolitan Area“. Currently working for the Federal Bureau of Mines in Pittsburgh.
- Colin Cooke defended his masters in June 2006. Thesis title: “Lake Sediment Archives of Atmospheric Pollution from the Peruvian and Bolivian Andes“. Finished a Ph.D. at the University of Alberta with Alexander Wolfe and continued our collaboration while was an Interdepartmental Postdoctoral Fellow at Yale University and as a postdoc at Pitt in 2013. He is currently a Limnologist for the lower Athabasca region for the Alberta Environment and Sustainable Resource Development
- Dan Nelson defended his masters in December 2004. Thesis title: “Holocene Paleoenvironmental History from Stable Isotopes in Lake Sediment, North-Central Washington State“. After spending a year traveling around the world he is working for me for one year on the drought history of the Pacific Northwest. After completing his Ph.D. at the University of Washington with Dr. Julian Sachs he started a postdoc at the University of Basel in the department of Environmental Sciences – Botany in Scheibenstrasse, Switzerland with Dr. Ansgar Kahmen.
- Barbara Osgood-Kutchko defended her masters in December 2004. Thesis title: “Late Holocene Climate Inferred from Varved Sediments in Blue Lake, Brooks Range, Alaska“. Completed her Ph.D. in Environmental Science at Carnegie Mellon University in December 2007. Currently employed by the Department of Energy NETL facility in Pittsburgh in the Environmental Science Division.

University of Massachusetts Graduate Student Research

* As an Adjunct/Research Professor at UMass I was not able to be the major advisor to graduate students, but I served on their committees. I was on each of the students graduate committees listed below, and perhaps more importantly, I worked extensively in the field and laboratory with each of these students. Furthermore, I secured the funding that supported L. Anderson and P. Polissar with 12-month research assistantships during their Ph.D. research.

Former

- Mark Besonen defended his Ph.D. in May 2006. Title of Ph.D. dissertation: “A 1,000 Year High-Resolution Hurricane History from the Boston Area Based on the Varved Sedimentary Record from Lower Mystic Lake (Medford/Arlington, MA)“. Currently a tenure track Assistant Professor at the Harte Research Institute for Gulf of Mexico Studies at Texas A&M, Corpus Christi.
- Pratigya Polissar defended his Ph.D. in May 2006. Title of Ph.D. dissertation: “Lake records of late Glacial-Holocene tropical climate change, Cordillera de Merida, Venezuela“. Finished a

postdoc with Dr. Katherine Freeman at Penn State University, finished a postdoc with Dr. James Zachos at the University of California, Santa Cruz and is currently a research assistant professor at Lamont-Doherty Earth Observatory.

- Lesleigh Anderson defended her Ph.D. in May 2005. Title of Ph.D. dissertation: “Holocene Climate of the Southwest Yukon Territory, Canada, Inferred from Lake-level and Isotope Analyses of Carbonate Lakes”. Currently a permanent Research Geologist in the Earth Surface Processes Team at the United States Geological Survey in Denver, CO.
- Whitney Patridge defended his masters in December 2002. Thesis title: “Sedimentology and Varve Analyses of Murray Lake, Ellesmere Island, Nunavut, Canada”. Currently a carpenter in New Hampshire.
- Meagan Mazzarino defended her masters in September 2000. Thesis title: “Clay and Evaporite-Mineralogy in the Lago de Urao Basin: Clues to Environmental Fluctuations in the Holocene of Venezuela”. Currently pursuing a Ph.D. in the Department of Natural Resources Conservation at the University of Massachusetts, Amherst on water resource issues in the Andes.
- Lesleigh Anderson defended her masters in May 1999. Thesis title: “Holocene Paleoclimatology of Northern Alaska from Oxygen Isotope Geochemistry of Sediment Cellulose and Authigenic Carbonate in Lake Sediments”. Currently a permanent Research Geologist in the Earth Surface Processes Team at the United States Geological Survey in Denver, CO.
- Pratigya Polissar defended his masters in May 1999. Thesis Title: “Lipid Biomarker, Elemental and Isotopic Evidence for Lacustrine Organic Matter Preservation and Source: Lago Taypi Chaka Kkota, Cordillera Real, Bolivia”. Finished a postdoc with Dr. Katharine Freeman at Penn State University, finished a postdoc with Dr. James Zachos at the University of California, Santa Cruz and is currently a research assistant professor at Lamont-Doherty Earth Observatory.
- Sheldon Smith defended his masters, in September 1997. Thesis title: “A Record of Environmental Change Derived from Varved Lakes Along the Margin of the Agassiz Ice Cap”. Currently a environmental consultant with Woodard and Curran in Portland, Maine.

Undergraduate Student Research Advising

Current

- Alex Beatty
- Adam Ofstun
- Sage Lincoln
- Stephen Perdziola

Former

- Ashley Albert - thesis title: Human History and Ecological Change as Recorded in Lake Sediments from the Spanish Central Pyrenees. Pursuing a masters at Indiana University-Perdue University, Indianapolis.
- Robert McDermott - thesis title: An 11,000-Year Record of Natural Drought Variability from Rock Lake, Montana Using Lake Sediment Stable Isotope Geochemistry. Pursuing a Ph.D. at Utah State University.
- Justin Coughlin thesis title: An 850 Year Record of Human Activity and Fire Incidents Near Prehistoric Moundville, Alabama. Pursuing a masters at the University of Pittsburgh.
- Molly Kane Research Topic: Documenting the History Incan Precious Metal Production Using Geochemical Techniques from Lake Sediments in the Andahuaylas Region of Peru. Completed a masters at the University of Oklahoma and is now working for Exxon Mobil.

- John Swartz. Research Topic: Documenting the Climate History of the Cusco Region for the past 1000 years from Lake Sediments in the Lucre Basin. Pursuing a Ph.D. at the University of Texas, Austin.
- Lindsey Witthaus: Research Topic: Oxygen and carbon isotope analyses of ostracods carapaces from Squanga Lake, Yukon Territory, Canada. Accomplishments: Honors College thesis completed May, 2007 entitled Early Holocene Climate History from Lacustrine Carbonate Stable Isotope Geochemistry, Squanga Lake, Yukon Territory, Canada. After completing her Fulbright Scholarship in Brazil she started a Ph.D. at the University of Kansas in Environmental Engineering
- Bryan Friedrichs. Research Topic: Oxygen and carbon isotope analyses of ostracods from Laguna PacPush, Peruvian Andes. After being a guide and mountaineer in Alaska and Costa Rica Brian is now pursuing his masters in teaching at the University of Alaska, Anchorage
- Patricia Hredzak. Research Topic: Oxygen and carbon isotope analyses of ostracods from Laguna Llacho Kkota, Bolivian Andes. She went onto pursue a Ph.D. in Department of Chemistry at Tufts University.
- Mike Rubinov. Accomplishments: Peer-reviewed first authored paper currently in preparation. Research Topic: A 2000 year oxygen and carbon isotopic record measured on ostracods carapaces from Laguna Gaucho, Nicaragua. Pursuing a masters in Geology at the University of Texas, Austin.
- Kevin Robinson. Completed an Honors College thesis in May, 2004 entitled A Multi-Proxy Reconstruction of Late Holocene Environmental Change in the Horidol Saridag Mountains, Hovsgol Aimag, Northern Mongolia. Received an Undergraduate Fulbright scholarship to study in Mongolia for a year 2004/2005.
- Daniel Nelson. Undergraduate thesis, Hampshire College completed May, 2001 entitled A Holocene Oxygen Isotope Record of Effective Moisture Change from Twin Lakes, Washington. Currently a postdoc at the University of Basel in the department of Environmental Sciences – Botany in Scheibenstrasse, Switzerland with Dr. Ansgar Kahmen.