

Richard Douglas Ricketts

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(218)-726-7826

Education

Ph.D. in Geology, Duke University December 1996

B.S. in Geology and Political Science, Ohio State University June 1991

Professional Work Experience

Senior Research Associate 2014-present
Marine Operations Manager, R/V Blue Heron
Large Lakes Observatory, University of Minnesota Duluth

Adjunct Assistant Professor 2001-present
Department of Geological Sciences, University of Minnesota Duluth

Research Associate 1998-2014
Marine Operations Manager, R/V Blue Heron
Large Lakes Observatory, University of Minnesota Duluth

Teaching and Research Assistant 1991-1997
Department of Geology, Duke University, Durham, NC

Grants – awarded:

as PI: \$4,763,000; as Co-PI, \$1,445,000

Acquisition of a small boat by the Large Lakes Observatory, 2014, Ricketts, NSF-DEB-1418809, \$144,670.

EAGER - Introducing Early Career Scientists to Research on the Great Lakes, 2014, Ricketts, NSF-OCE-1430015, \$18,506.

Oceanographic Instrumentation, RV Blue Heron, 2014, Ricketts, NSF-OCE-1419244, \$12,956.

Evaluating Lake Superior's Health in a Changing World, 2013-2016, Brown, Austin, Branstrator, Gunderson, Hrabik, Minor, Ricketts and Sterner, LCCMR, \$600,000.

Shipboard Scientific Support Equipment, RV Blue Heron, 2013, Ricketts, NSF-OCE-1317333, \$72,425.

Oceanographic Instrumentation, RV Blue Heron, 2013, Ricketts, NSF-OCE-1317331, \$16,975.

Shipboard Scientific Support Equipment, R/V Blue Heron 2012, Ricketts, NSF-OCE-1219610, \$23,000.

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Oceanographic Technical Services, R/V Blue Heron, 2012-2016, Ricketts, NSF-OCE-1219153, \$225,044.

Ship Operations, R/V Blue Heron, 2012-2016, Ricketts, NSF-OCE-1208291, \$330,800.

Red Cliff Chippewa/EMR Lake Superior Barrels, 2012, Ricketts, EMR contract, \$10,000.

Shipboard Scientific Support Equipment, R/V Blue Heron, 2011, Ricketts, NSF-OCE-1118204, \$7,995.

Oceanographic Instrumentation, R/V Blue Heron, 2011, Ricketts, NSF-OCE-1118203, \$32,674.

Shipboard Scientific Support Equipment, R/V Blue Heron, 2010, Ricketts, NSF-OCE-1013400, \$13,669.

Oceanographic Instrumentation, R/V Blue Heron, 2010, Ricketts, NSF-OCE-1013255, \$35,599.

Lake Superior Hydroacoustics Project, 2009-2014, Ricketts, MNDNR, \$88,870.

Oceanographic Instrumentation, R/V Blue Heron Stimulus, 2009, Ricketts, NSF-OCE-0943632, \$110,251.

Shipboard Scientific Support Equipment, R/V Blue Heron, 2009, Ricketts, NSF-OCE-0910894, \$179,742.

Oceanographic Instrumentation, R/V Blue Heron, 2009, Ricketts, NSF-OCE-0902275, \$52,656.

Oceanographic Technical Services, R/V Blue Heron, 2009-2011, Ricketts, NSF-OCE-0907933, \$171,875.

Red Cliff Chipewa/EMR Lake Superior Barrels, 2008, Ricketts, EMR contract, \$193,600.

SGER: Use of Novel Biogeochemical Techniques on Core Sediments from the Tibetan Plateau, 2007-2009, Ricketts, NSF-EAR- 0732701, \$22,948.

Oceanographic Instrumentation, R/V Blue Heron, 2008, Ricketts, NSF-OCE-0802791, \$15,316.

Shipboard Testing of B20, 2008-2009, Ricketts and Pope, GLMRI, \$100,000.

Oceanographic Instrumentation, R/V Blue Heron, 2007, Ricketts, NSF-OCE-0703264, \$39,149.

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Multibeam bathymetry and sidescan-sonar survey of the Duluth-Superior Harbor and nearshore, 2007, Ricketts, Colman and Wattrus, GLMRI, \$60,000.

Oceanographic Instrumentation, R/V Blue Heron, 2006, Ricketts, NSF-OCE-0613075, \$16,000.

Oceanographic Technical Services, R/V Blue Heron, 2006-2008, Ricketts, NSF-OCE-0610184, \$61,445.

Feasibility study: Usefulness of modern acoustic methods to the maritime industry in relation to changes in water depth in the Great Lakes, 2006, Colman and Ricketts, GLMRI, \$51,000.

Shipboard Scientific Support Equipment, R/V Blue Heron, 2005, Ricketts, NSF-OCE-0511805, \$10,949.

Ship Operations, R/V Blue Heron, 2005-2011, Ricketts, NSF-OCE-0505092, \$1,617,312.

Acquisition of High-Resolution Acoustic Imaging Instruments for Sediment Research at the Large Lakes Observatory, 2004-2006, Colman, Johnson, Ricketts and Wattrus, NSF-OCE-0421091, \$361,013.

Shipboard Scientific Support Equipment, R/V Blue Heron, 2004, Ricketts, NSF-OCE-0411466, \$10,694.

Oceanographic Technical Services, R/V Blue Heron, 2003-2005, Ricketts, NSF-OCE-0307311, \$24,335.

Oceanographic Instrumentation, R/V Blue Heron, 2003, Ricketts, Hrabik and Wattrus, NSF-OCE-0302731, \$30,795.

Acquisition of stable isotope mass spectrometry system for biogeochemical research at the Large Lakes Observatory, 2003-2005, Werne, Johnson, Pastor, Gallup and Ricketts, NSF-MRI-0320880, \$313,150.

Shipboard Scientific Support Equipment, R/V Blue Heron, 2002, Ricketts and Johnson, NSF-OCE-0136428, \$9,966.

Ship Operations, R/V Blue Heron, 2002-2004, Ricketts and Johnson, NSF-OCE-0200987, \$167,864.

Oceanographic Instrumentation, R/V Blue Heron, 2001, Ricketts and Johnson, NSF-OCE-0098107, \$35,705.

Shipboard Scientific Support Equipment, R/V Blue Heron, Ricketts and Johnson, 2000, NSF-OCE-9911979, \$17,420.

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Ship Operations, R/V Blue Heron, 2000-2001, Ricketts and Johnson, NSF-OCE-0070164, \$345,989.

Oceanographic Technical Services, R/V Blue Heron, Ricketts and Johnson, 2000-2002, NSF-OCE-0070539, \$78,201.

Oceanographic Instrumentation, R/V Blue Heron, 2000, Ricketts, Johnson and Zhou, NSF-OCE-9988098, \$15,136.

Stable Isotope Study of Laminated Sediments from Ethiopian Crater Lakes, 2000-2003, Ricketts, NSF-ESH-0081463, \$44,083.

Shipboard Scientific Support Equipment, R/V Blue Heron, 1999, Johnson and Ricketts, NSF-OCE-9819662, \$46,300.

Oceanographic Instrumentation, R/V Blue Heron, 1999, Johnson and Ricketts, NSF-OCE-9819695, \$73,158.

The late Quaternary Paleoclimate Archives of Lake Issyk-Kul, Kyrgyzstan: Calibration and Extension of the Sedimentological/Geochemical Proxy-Record, 1999-2003, Ricketts and Rasmussen, NSF-ESH-9905324, \$297,657.

Grants – declined:

\$3,644,000

Oceanographic Instrumentation, RV Blue Heron, 2014, Ricketts, NSF-OCE-1419244, \$11,616.

Acquisition of a small boat by the Large Lakes Observatory, 2013, Ricketts, NSF-DEB-1318959, \$151,252.

Shipboard Scientific Support Equipment, RV Blue Heron, 2013, Ricketts, NSF-OCE-1317333, \$104,127.

Infrastructure Update for the University's Flagship, the Research Vessel Blue Heron, 2010, Colman and Ricketts, UMN – I3 program, \$580,000

A High Resolution Monsoon and Temperature Record from the Tibetan Plateau, 2008-2011, Ricketts, NSF-EAR- 0823536, \$124,505.

Shipboard Scientific Support Equipment, R/V Blue Heron, 2007, Ricketts, NSF-OCE-0715217, \$9,303.

Collaborative Research: A study of coastal flow separation and eddy formation in Lake Superior, 2006-2009, Austin and Ricketts, NSF-OCE-0550455, \$326,250.

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Collaborative Research: Defining the Relationships among the Monsoon, Modern Hydrological Balances and the Sediment Depositional System at Qinghai Lake, China, 2006-2009, Colman and Ricketts, NSF-EAR- 0545280, \$358,262.

Collaborative Proposal: Coastal Flow Separation and Eddy Formation in Lake Superior with Ecosystem Impacts, 2005-2007, Ricketts, NSF-OCE- 0526193, \$40,708.

Shipboard Scientific Support Equipment, R/V Blue Heron, 2005, Ricketts, NSF-OCE-0511805, \$87,193.

Oceanographic Instrumentation, R/V Blue Heron, 2005, Ricketts, NSF-OCE-0506051, \$5,073.

Collaborative Research: Calibrated Acoustic Remote sensing of Paleoclimate change in Lake Issyk-Kul, Kyrgyzstan, 2005-2007, Wattrus, Colman, and Ricketts, NSF-ATM, \$342,117.

Pilot Project: A 60 kyr Lacustrine Record of Climate from Central Mongolia, 2005-2007, Brown and Ricketts, NSF-ATM- 0502516, \$88,867.

Collaborative Research: The Paleoclimate Record of Lake Chatyr-Kul, Kyrgyzstan: a Combined Geochemical and Sedimentological Approach, 2004-2007, Ricketts, NSF-ATM-0402440, \$134,085.

Collaborative Research: The Paleobiology of Candonid and Limnocytherid- Ostracodes: Integrating Phylogeny with Paleoenvironmental Reconstruction. 2004-2007, Ricketts, NSF-EAR- 0345646, \$72,542.

Collaborative Research: The Paleoclimate Record of Lake Chatyr-Kul, Kyrgyzstan: A Combined Geochemical and Sedimentological Approach, 2003-2006, Ricketts, NSF-ATM- 0318188, \$130,473.

Shipboard Scientific Support Equipment, R/V Blue Heron, 2003, Ricketts, NSF-OCE-0310899, \$32,302.

Collaborative Research: Phylogeny and Geochemistry of Members of the Cytheracea (Ostracoda): Linking Paleoenvironmental Affinities with Evolutionary History of Proxy Indicators, 2003-2006, Ricketts, NSF-DEB- 0235586, \$65,728.

Acquisition of instrumentation for new organic and stable isotope analytical facility for biogeochemical research in natural systems at the Large Lakes Observatory, 2002-2004, Werne, Ricketts, Gallup, Pastor, NSF-MRI- 0216235, \$560,000.

Calibrated Acoustic Remote Sensing of Paleoclimate Change in Lake Issyk-Kul, Kyrgyzstan, Wattrus, and Ricketts, 2002-2005, NSF-ATM- 0117501, \$420,421.

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Publications

Yu, S., Ricketts, R. D., and Colman, S. M., 2008. Determining the spatial and temporal patterns of climate changes in China's western interior during the last 15,000 years from lacustrine oxygen isotope records. *J. of Quat. Sci.*, DOI: 10.1002/jqs.1229.

Park, L.E., and Ricketts, R.D., 2003. Evolutionary history of the Ostracoda and the origin of nonmarine faunas, in: *Bridging the Gap: Trends in the Ostracode Biological and Geological Sciences, The Paleontological Society Special Papers, v. 9.*, eds. L. E. Park and A. J. Smith. Yale University Press, New Haven, pp. 11-36.

Ferronskii, V. I., V. A. Polyakov, V. S. Brezgunov, L. S. Vlasova, Yu. A. Karpychev, A. F. Bobkov, V. V. Romaniovskii, T. C. Johnson, R. D. Ricketts, and K. A. Rasmussen, 2003. Variations in the hydrological regime of Kara-Bogaz-Gol Gulf, Lake Issyk-Kul, and the Aral Sea assessed based on data of bottom sediment studies. *Water Resources*, v. 30, p. 252-259. Translated from *Vodnye Resursy*, v. 30, 2003, p. 281-288.

H. Lamb, S. Kebede, M. Leng, R. D. Ricketts, R. Telford, and M. Umer, 2002. Origin and isotopic composition of aragonite laminae in an Ethiopian crater lake, in: *The East African Great Lakes: Limnology, Palaeolimnology and Biodiversity*, eds. E. O. Odada and D. O. Olago. Kluwer Academic Publishers, Dordrecht, Netherlands, pp. 487-508.

R. D. Ricketts, T. C. Johnson, E. T. Brown, K. A. Rasmussen, and V. V. Romanovsky, 2001. Trace element and stable isotope study of the Holocene paleoclimate of Lake Issyk-Kul. *Palaeogeography, Palaeoclimatology, Palaeoecology*, 176, pp. 207-227.

K. A. Rasmussen, R. D. Ricketts, T. C. Johnson, V. V. Romanovsky, and O. M. Grigina, 2001. An 8,000 Year Multi-proxy Record from Lake Issyk-Kul, Kyrgyzstan. *PAGES News*, vol. 9 (2), pp. 5-6.

R. D. Ricketts and R. Anderson, 2001. Stable isotope study of Lake Turkana, East Africa. in: *Use of isotope techniques in lake dynamics investigations, IAEA Tecdoc 1206*. International Atomic Energy Agency, pp. 97-104.

R. D. Ricketts, 1998. A comparison between the stable isotopic composition of early Holocene and late Pleistocene carbonates from Lake Malawi, East Africa, in: *Environmental Change and Response in East African Lakes*, ed. J. Lehman. Kluwer Academic Publishers, Dordrecht, Netherlands, pp.191-206.

R. D. Ricketts and R. Anderson, 1998. A direct comparison between the historical record of lake level and the $\delta^{18}\text{O}$ signal in carbonate sediments from Lake Turkana, Kenya. *Limnology and Oceanography*, 43(5), pp. 811-822.

R. D. Ricketts, and T. C. Johnson, 1996. Climate change in the Turkana Basin as deduced from a 4000 year long δO^{18} record. *Earth and Planetary Science Letters*, 142:7-17.

R. D. Ricketts and T. C. Johnson, 1996. Early Holocene changes in lake level and productivity in Lake Malawi as interpreted from oxygen and carbon isotopic

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measurements from authigenic carbonates, in: *The Limnology, Climatology, and Paleoclimatology of the East African Lakes*, eds. T. C. Johnson and E. O. Odada. Gordon and Breach, Newark, N.J., pp. 475-494.

T. C. Johnson, C. A. Scholz, T. R. Talbot, K. Kelts, R. D. Ricketts, G. Ngobi, K. Beuning, I. Ssemmanda, and J. A. McGill, 1996. Late Pleistocene desiccation of Lake Victoria and rapid evolution of Cichlid fishes. *Science*, 273:1091-1093.

Teaching:

Oceanography (GEOL 1610), University of Minnesota Duluth, Fall of 2005 and 2011

Guest lecturer for classes in: *Earth's Climate and Environment: Past and Future* (GEOL 3100) in 2013, *Field Limnology* (LIM 5004) in 2003 and 2004, *Geological Limnology* (LIM 5103) in 2004, *Geology and Earth Systems* (GEOL 1110) for a month in 2005, *Oceanography* (GEOL 1610) from 2000 to 2013, as well as other classes.

Professional Affiliations:

American Geophysical Union
Geological Society of America

Service:

National Science Foundation Oceanographic Instrumentation/Shipboard Scientific Support Equipment Panel, 2014

University-National Oceanographic Laboratory System, Ship Scheduling Committee, Vice Chair and Chair 2013 to present

Miao Du, Master's candidate committee, 2011

University and Faculty Senates (System-wide) representative, 2008 to present

Geological Society of America Field Trip, 2011, 'Geology under the Surface: Lake Superior and the research vessel Blue Heron', R. D. Ricketts, Steve Colman and Tom Johnson.

Numerous paper and proposal reviews.

Numerous tours, cruises, and presentations for classes and the community.

Conference Presentations:

A. C. G. Henderson, M. Morellon, R. D. Ricketts, M. J. Leng, J. A. Holmes, J. Olsen, T. Haberzettl, L. Zhu, 2013. Late Glacial and Holocene monsoon variability in Southern Tibet. AGU Annual Meeting, San Francisco, CA.

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R.D. Ricketts, 2012. The R/V Blue Heron: the University of Minnesota's Laboratory on the Great Lakes. IAGLR Annual Meeting, Cornwall, Ontario.

Josef Werne, B. Bernhardt, M. Woltering, M. Berke, R. D. Ricketts, M. Caballero, E. Hopmans, S. Schouten, J. S. Damsté, 2011. Complications in the interpretation of molecular paleotemperature reconstructions using isoprenoid and branched tetraether: Lessons to be learned. 25th IMOG, Interlaken, Switzerland.

R. D. Ricketts, M. Du, J. P. Werne, and E. T. Brown, 2011. Late Quaternary Asian climate: Peiku Co and geophysical, biogeochemical and sedimentological proxies. IAGLR Annual Meeting, Duluth, MN.

M. Du, R. D. Ricketts, S. M. Colman, J. P. Werne, 2010. A high-resolution Holocene Asian Monsoon record from a Tibetan lake – Peiku Co. AGU Annual Meeting, San Francisco, CA.

R. D. Ricketts and S. Colman, 2009. The Large Lakes Observatory, University of Minnesota Duluth: An Institute focused on Oceanographic research on Large Lakes around the World., IAGLR Annual Meeting, Toledo, OH.

R. D. Ricketts, A. C. G. Henderson, and S. Yu, 2007. Preliminary Geophysical and Sedimentological Data From Peiku Co Tibet. AGU Annual Meeting, San Francisco, CA.

R. D. Ricketts and K. A. Rasmussen, 2005. Late-Glacial and Holocene climate in Central Asia: Lake Issyk-Kul, Kyrgyzstan. GSA-North Central, Minneapolis, Minnesota.

L. E. Park, R. D. Ricketts, and T. J. Trubee, 2003. Are Some Species Better Proxy Indicators Than Others? Some Case Studies from Ostracoda. GSA short course, Seattle, Washington.

R. D. Ricketts and K. A. Rasmussen, 2003. Evidence for the Little Ice Age and Medieval Warm Period in the Issyk-Kul basin. The 3rd International Limnogeology Congress, Tucson, Arizona.

K. A. Rasmussen, R. D. Ricketts, T. C. Johnson, and V. V. Romanovsky, 2003. A 13,500 Year Multi-proxy Sedimentary Record from Eastern Lake Issyk-Kul, Kyrgyzstan. The 3rd International Limnogeology Congress, Tucson, Arizona.

R. D. Ricketts and K. A. Rasmussen, 2001. A high-resolution record of Central Asian climate change over the last 1,000 years from Lake Issyk-Kul, Kyrgyzstan. AGU Annual Meeting, San Francisco, CA.

K. A. Rasmussen, R. D. Ricketts, T. C. Johnson, V. V. Romanovsky, and O. M. Grigina, 2000. An 11,000-year history of Central Asian paleoclimate change recorded in deep sediments of Lake Issyk-Kul, Kyrgyzstan. AGU Annual Meeting, San Francisco, CA.

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- R. D. Ricketts, 2000. Paleoclimatic interpretation of the stable isotopic composition of inorganic carbonates from Lake Malawi. 1st International IDEAL Symposium, Club Makokola, Malawi.
- R. D. Ricketts, K. A. Rasmussen, E. T. Brown, and T. C. Johnson, 1999. Stable isotope and trace element composition of ostracodes from Lake Issyk-Kul, Kyrgyzstan. AGU Annual Meeting, San Francisco, CA.
- K. A. Rasmussen, R. D. Ricketts, T. C. Johnson, V. V. Romanovsky, 1999. Late Quaternary Sedimentation of Lake Issyk-Kul, Kyrgyzstan: an 8,000-year record of Deposition and Central Asian Paleoclimate change. The 2nd International Congress of Limnogeology, Plouzane, France.
- R. D. Ricketts, X. Liu, T. C. Johnson, K. A. Rasmussen, 1998. The paleoclimate record from Lake Issyk-Kul, Kyrgyzstan. AGU Annual Meeting, San Francisco, CA.
- R. D. Ricketts and R. F. Anderson, 1997. Stable isotope study of Lake Turkana, East Africa. IAEA Isotope Hydrology Section Meeting, Rehovot, Israel.
- R. D. Ricketts, 1996. Stable isotope study of carbonates deposited in Lake Turkana, East Africa, in the last 120 years. ASLO Summer Meeting, Milwaukee, WI.
- C.A. Scholz, T.C. Johnson, and R.D. Ricketts, 1995. Episodic desiccation of Lake Victoria during the Quaternary. AGU Annual Meeting, San Francisco, CA.
- T.C. Johnson, R.D. Ricketts, and P. Ng'ang'a, 1995. Abrupt climate change in Holocene records from African lakes. AGU Annual Meeting, San Francisco, CA.
- R. D. Ricketts, 1995. Interpretation of the paleo-lake level of Lake Turkana, East Africa, using the stable oxygen isotope composition of carbonates. GSA Annual Meeting, New Orleans, LA.
- R. D. Ricketts, 1994. Paleoclimatic signals from Lake Rukwa, Tanzania, based on stable isotope analyses of inorganic carbonate. AGU Annual Meeting, San Francisco, CA.
- P. Ng'ang'a and R. D. Ricketts, 1994. Lake level history from Lake Turkana as determined from organic carbonate. ICOG-8 Meeting, Berkeley, CA.
- R. D. Ricketts and T. C. Johnson, 1993. Interpretation of paleoclimatic signals from stable isotope analysis of inorganic carbonates in Lake Malawi sediments. AGU Annual Meeting, San Francisco, CA.
- R. D. Ricketts and T. C. Johnson, 1993. High-resolution paleoclimatic signals from stable isotope analyses of carbonate-rich horizons in Lake Malawi sediments deposited from 6 to 10ka. 1st International IDEAL Symposium, Jinja, Uganda.

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T.C. Johnson and R.D. Ricketts, 1992. High-Resolution paleoclimatic signals from stable isotope analysis of carbonate-rich horizons in Lake Malawi sediments. AGU Annual Meeting, San Francisco, CA.

Field work:

Numerous educational cruises on Lake Superior 1998-2014

Lake Superior (Summer 2014) – Mentoring early-career scientists on a six-day Lake Superior cruise as part of the grant ‘EAGER - Introducing Early Career Scientists to Research on the Great Lakes’

Lake Superior (Summer 2008) – Multibeam and sidescan survey of waste barrel locations in western Lake Superior

Tibet, China (May 2007)- recovered cores and seismic data from Peiku Co.

Ethiopia, East Africa (Jan. 2001)- recovered cores from Lakes Hora and Kilole.

Kyrgyzstan, Central Asia (Aug. 2000)- recovered piston cores from Lake Issyk-Kul.

Kyrgyzstan, Central Asia (Aug. 1999)- recovered water samples and multicores from Lake Issyk-Kul.

Malawi, East Africa (Feb. 1997)- recovered multicores from Lake Malawi.

Uganda, East Africa (March-April 1995)- recovered side scan sonar data, 3.5 Khz and air gun seismic data, and piston cores from Lake Victoria.

Kenya, East Africa (Jan. 1994)-recovered freeze cores, gravity cores and water samples from Lake Turkana.

Malawi, East Africa (Feb. 1993)-recovered box cores and water samples from Lake Malawi.

Cruise- R/V Cape Hatteras- Atlantic Ocean (Aug. 1992)-recovered seismic data from the Bermuda Rise.

Malawi, East Africa (July-Aug. 1991)- recovered cores from six deltas on Lake Malawi.