

11/14/2013

Curriculum Vitae
MARIA PROKOPENKO

prokopen@usc.edu

323-630-4968

EDUCATION

Moscow State University, Geology	B.S. 1992
Moscow Institute of Foreign Languages, English	B.A. 1995
University of Cincinnati, Geology	M.S. 1998
University of Southern California, Los Angeles, Earth Sciences (Dissertation title: Fractionation of Nitrogen isotopes during early diagenesis)	Ph.D. 2004
Princeton University, postdoc, Stable Isotope Geochemistry	2005-2007
University of Southern California, postdoc, Geochemistry/Oceanography	2007-2010

APPOINTMENTS

2011 – present	Visiting scholar, Department of Geology, Pomona College
2011 – present	Adjunct assistant research professor, Department of Earth Sciences, USC
2010 – present	Visiting lecturer, Department of Geology, Pomona College
2010 – 2011	Assistant research professor, Department of Earth Sciences, USC
2007 – 2010	Postdoctoral fellow, Department of Earth Sciences, USC
2005 – 2007	Hess postdoctoral fellow, Department of Geosciences, Princeton University
2001 – 2004	Research assistant, Department of Earth Sciences, USC
1998 – 2000	Teaching assistant, Department of Earth Sciences, USC
1995 – 1997	Teaching assistant, Department of Geology, University of Cincinnati

UNIVERSITY SERVICES

x	2013 – present	Second reader of undergraduate theses at Pomona College and Keck Science Department at Claremont McKenna College (four theses in academic year 2013-2014)
x		

Silver, Bianca J., Raymond, R., Sigman, D., Prokopenko, M., Sherwood Lollar, B., Lacrampe-Couloume, G., Fogel, M., Pratt, L., Lefticariu, L., Onstott, T., 2012, The origin of NO₃⁻ and N₂ in deep subsurface fracture water of South Africa, *Chemical Geology*, v. 294-295, pp. 51-62, doi:10.1016/j.chemgeo.2011.11.017

2011

Prokopenko, M.G., Sigman, D.M., Berelson, W.M., Hammond, D.E., Barnett, B., Chong, L., Townsend-Small, A., 2011, "Denitrification in anoxic sediments supported by biological nitrate transport", *Geochimica et Cosmochimica Acta*, doi:10.1016/j.gca.2011.09.023

Prokopenko M.G., 2011, Open review of "Comment on 'Consistent calculation of aquatic gross production from oxygen triple isotope measurements' by K. (2011)" by D. P. Nicholson", *Biogeosciences*, 8, C3041–C3041, 2011

Prokopenko, M.G., Pauluis, O. M., Granger, J., Yeung, L. Y., 2011, "Exact evaluation of gross photosynthetic production from the oxygen triple isotope composition of O₂: Implications for the net-to-gross primary production ratios", *Geophys. Res. Letters*, 38, doi:10.1029/2011GL047652

Granger, J., Prokopenko, M.G., Sigman, D., Mordy C., Morse, Z., Morales, L*, Sambrotto, R., Plessen B., 2011, "Nitrification-coupled denitrification in sediment of the eastern Bering Sea shelf leads to 15N-

Invited talks

- Division of Geological and Planetary Sciences, California Institute of Technology, “Investigating deep sea corals as a new archive of $\delta^{15}\text{N}$ records for studies of N cycle through time - stories from the Coral Garden”, October 2013
- Department of Marine and Environmental Biology, University of Southern California, “Net and gross biological production in the Eastern Tropical South Pacific: Linking biogeochemistry and hydrography in the transition zone between coastal upwelling and subtropical gyre”, October 2013
- Department of Earth Sciences, University of Bristol, “Deep sea corals as a new archive of $\delta^{15}\text{N}$ record for studies of N cycle through time”, September 2013
- Department of Geology, University of Cincinnati, “Big a walrus in the warming world: Using triple O isotopes and $\delta^{13}\text{C}$ ratios to determine factors controlling carbon export production in spring blooms on the Bering Sea shelf”, November 2012
- Department of Earth and Space Sciences, University of California, Los Angeles, “The three O isotopes as geochemical proxies for studies of the biological carbon cycling” February 2012
- Division of Geological and Planetary Sciences, California Institute of Technology, “What controls primary production in spring blooms on the Bering Sea Shelf” January 2011
- Scripps Institute of Oceanography, UCSD, “Biological nitrate transport – a new twist in the global nitrogen cycle”, October 2010
- Department of Earth Science System, UC Irvine, “Biologically – mediated nitrate transport and anaerobic nitrogen cycling in sediments of two California Borderland basins”, November 2009
- Gordon Conference in Chemical Oceanography, “The role of biological transport of nitrate in the sedimentary N cycle”, August 2009
- Department of Ocean and Atmospheric Sciences, UCNA, “An-diffusive nitrate transport and its role in benthic nitrogen cycling in the California Borderland Basins”, May 2006
- Department of Geosciences, Princeton University, “Isotopic fractionation of nitrogen isotopes during early diagenesis in marine sediments: The story of two anoxic sites”, February 2004
- Dissertation Symposium on Chemical Oceanography XWH, Hilo, Hawaii, “Effects of early diagenetic processes on nitrogen isotopes in marine sediments”, September 2003

Contributed abstracts in 2010-2013

2013

Xingchen T. Wang, Maria G. Prokopenko, Daniel M. Sigman, Jess F. Adkins, Sophie Hines, “Lower surface

Prokopenko M.G., Granger J., Long M., Mordy C., Ladd, Net and Gross Oxygen Production and potential carbon export efficiency of spring blooms on the Eastern Bering Sea Shelf , ASLO-Ocean Sciences Meeting, Salt Lake City, February 20-24, 2012

Haskell, W.Z., Kadko, D., Berelson, W.M., Hammond, D.E., Prokopenko, M.G., Knapp, A., Capone, D., A0350, Upwelling velocities and eddy diffusivity from ^{7}Be measurements used to compare vertical nutrient fluxes to export POC flux in the ETSP, ASLO-Ocean Sciences Meeting, Salt Lake City, February 20-24, 2012

Hammond, D. E., Prokopenko, M. G., Yeung, L. Y., Berelson, W.M., Stanley, R. ., Haskell II, W. Z., Knapp, A. N., Rollins, N. ., Young, E. D., Capone, D. G., A0358, Net Community and Gross Photosynthetic Production rates in the ETSP, based on O_2/Ar ratios and triple oxygen isotopic composition of dissolved O_2 , ASLO-Ocean Sciences Meeting, Salt Lake City, February 20-24, 2012

Berelson, W. M., Rollins, N., Haskell, W. Tems, C., Wolfe, C., Prokopenko, M. , Knapp, A., Casciotti, K. L., Hammond, D. E., Capone, D. G. Sedimentation-induced matter remineralization in the Eastern Tropical South Pacific (ETSP); sediment traps and sediment pore water fluxes, -Ocean Sciences Meeting, Salt Lake City February 20-24, 2012

Knapp, A.N., Casciotti, K.L., Buchwald, C., Bonnst, Dekaezemacker. J., Gunderson, T., Prokopenko, M., Berelson, W.M., Capone, D., Quantifying the importance of Nitrate and N_2 fixation as sources of new N for export production in the Eastern Tropical South Pacific using N isotope budget, -Ocean Sciences Meeting, Salt Lake City, February 20-24, 2012

2011

Prokopenko, M., Granger, J., Long, M., Mordy C., DiFiore, P., Cokelet, E., Daniel Sigman, Sambrotto, R., 2011, Factors controlling rates of Net Community and Gross Photosynthetic Production on the Eastern Bering Sea shelf, Gordon Research Conference, August, 14-19, 2011, Proctor Academy in Andover, NH

Prokopenko, M., Julie Granger, Matthew Long, Calvin Moran, Peter DiFiore, Edward Cokelet, Nancy Kachel, Daniel Sigman and Bradley Moran, 2011, Rates of Net Community and Gross Photosynthetic Production on the Eastern Bering Sea shelf as estimated from O_2/Ar ratios and triple O isotopes under non-steady state conditions, Open Science Meeting, Ecosystem Studies of Sub-Arctic Seas, May 22-26, 2011, Seattle WA

Gaines, R., Trang, J., Scott, S., Crane, E.J., Prokopenko, M., Berelson, W., Potential for widespread microbial liberation of structurally-coordinated iron from common clay minerals in marine sediments, August 14-19, 2011, Goldschmidt Geochemistry Conference, Prague, Czech Republic

2010

Townsend-Small, A., Prokopenko, M., Berelson, W., Chong, L., Nitrous oxide concentrations and stable isotopes in water column and sediment profiles along the southern California and northwestern Mexican margin, Abstract PP34A-02, presented at 2010 Fall Meeting, AGU, San Francisco, Calif., 13-17 Dec

Granger, J., Prokopenko, M., Sigman, D., Mordy, C., Nitrate-coupled denitrification in sediment of the eastern Bering Sea shelf leads to ^{15}N -enrichment of N in shelf waters, PP34A-05, presented at 2010 Fall Meeting, AGU, San Francisco, Calif., 13-17 Dec

Yeung, L.Y., Shauble, E., Fleming, J., Prokopenko, M., Berelson, W., Young, E., Understanding the triple-isotopic mass dependence of equilibrium oxygen isotope fractionation, V31B-232, presented at 2010 Fall Meeting, AGU, San Francisco, Calif., 13-17 Dec

Berelson, W., Yeung, L.Y., Hammond, D., Rollins, N., Hammond, D., Prokopenko, M., Comparison of Radon-222 and satellite-wind-based estimates of gas exchange in the Eastern Tropical South Pacific ocean, Abstract OS53E-08 , presented at 2010 Fall Meeting, AGU, San Francisco, Calif., 13-17 Dec

Ren, H., Thunel, R., Sigman, D., Prokopenko, M., Nitrogen isotopic composition of planktonic foraminifera from the modern ocean and recent sediments, Abstract PP34A-04 , presented at 2010 Fall Meeting, AGU, San Francisco, Calif., 13-17 Dec

Prokopenko, M., Yeung, L.Y., Berelson, W., Hammond, D., Demming, J., Rollins, N., Young, E., Haskell, W., Net Community and Gross Photosynthetic production rates in the Eastern Tropical South Pacific, as determined from O_2/Ar ratios and triple oxygen isotopic composition of dissolved O_2 , G23D-0951, presented at 2010 Fall Meeting, AGU, San Francisco, Calif., 13-17 Dec

- Haskell, W., Berelson, W., Hammond, D., Prokopenko, M., Yeung, L.Y., Capone, D., Export POC flux calculated from ^{234}Th measurements, sediment traps and O_2 supersaturation in the Eastern Tropical South Pacific, Abstract GC23D-0952, 2010 Fall Meeting, AGU, San Francisco, Calif., 13-17 Dec
- Prokopenko, M., Granger, J., Cassar, N., DiFiore, P., Klab, Kachel, D., Cockey, E., Sigman, D., Moran, B., 2010, Primary Production on the Eastern Bering Sea Shelf as Estimated from Oxygen/Argon Ratios and Triple Oxygen Isotopes, *Esos Trans. AGU*, 91(26), Ocean Sci. Meet. Suppl., Abstract IT35C-05
- Chong, L., Prokopenko, M., Townsend-Small, A., Berelson, W., 2010, Untangling a New Twist in the Nitrogen Cycle: Biological Nitrate Transport and Anaerobic Iron Oxidation, *Esos Trans. AGU*, 91(26), Ocean Sci. Meet. Suppl., Abstract IT15D-11

FUNDED AND PENDING PROPOSALS

- “Collaborative Research: Fixed Nitrogen Removal in Sediments of the Continental Slope and Rise”; \$199,844; pending with NSF-OCE (Chem. Ocean.)
- “Collaborative Research: Use of Triple Oxygen Isotopes and O_2/Ar to constrain Net/Gross Oxygen Production during upwelling and non-upwelling periods in a Coastal Setting”; \$233,262; NSF OCE-1260296 (Chem. Ocean.), awarded to MP, Pomona College, 2013-2016
- “Nitrogen isotopic (^{15}N) composition of foraminifera as a proxy for organic carbon in Deep Sea Oceans: A new, high resolution proxy for N cycle studies”; \$361,542; NSF OCE-1234664 (MGG), awarded to MP, Pomona College, 2012-2014
- “Applying O_2/Ar , ^{17}O and ^{222}Rn Methodologies to Constrain Organic Carbon Productivity in the Upper Ocean of the ETSP”; \$205,000; NSF-OCE, submitted by D. Hammond, W. Berelson (USC) and E. Young (UCLA) as PIs, 2010-2012
- “Non-Local Bacterial Transport of Nitrate within Sediments Underlying Oxygen Deficient Zones: A New Twist in the N Cycle”; \$380,379; NSF-OCE; submitted by D. Sigman (Princeton Univ.) and W. Berelson (USC) as PIs, 2007-2010
- “Fractionation of nitrogen isotopes during long-term diagenesis in marine sediments”; \$20,000; Schlanger Graduate Fellowship, Ocean Drilling Program, 2002
- “The Use of $^{15}\text{NH}_3$ to Estimate Fractionation of Nitrogen Isotopes during Diagenesis of Organic Matter”; 2001-2004; \$201,809; NSF-OCE, submitted by D. Hammond (USC) as PI, 2001-2004

SEA GOING EXPERIENCE

FELLOWSHIPS AND HONORS

2005-2007 Harry Hess Fellowship, Department of Geosciences, Princeton University
2004 Sonosky Summer Fellowship at the Department of Earth Sciences, USC
2002-2003 Schlanger ODP fellowship, Joint Oceanographic Institutions
Spring 2000 Outstanding Teaching Assistant Award, Department of Geosciences, USC
Summer 1997 NASA Planetary Biology Internship, Center for Great Lake Studies, with Ken Nealson

PROFESSIONAL AFFILIATIONS

American Geophysical Union, American Society of Limnology and Oceanography, European Association of Geochemistry