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ADDRESS

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RESEARCH INTERESTS

Watershed hydrology, limnology, isotope biogeochemistry, global environmental change

RESEARCH SITES

Watersheds, rivers and lakes of the western United States

EDUCATION

Ph.D., Ecology, Evolution and Marine Biology
University of California, Santa Barbara,
2001 (Emphasis in biogeochemistry and limnology)
M.A., Aquatic and Population Biology University
of California, Santa Barbara
B.A., Aquatic Biology University of California,
Santa Barbara (*With Distinction in the
Major*)

PROFESSIONAL AFFILIATIONS AND SERVICE

Associate Editor: Biogeochemistry

Society Memberships: American Society of Limnology and Oceanography, American Geophysical Union

Peer reviewer for multiple society journals, the National Science Foundation, the U.S. Department of Agriculture and other Federal resource agencies

AWARDS

2012: Sabbatical Fellowship Award, Cooperative Institute for Environmental Science (CIRES), University of Colorado, Boulder.

PROFESSIONAL EXPERIENCE

2014 – Present: Professor of Hydrology, and Chair, Department of Environmental Sciences, University of California, Riverside.
2009 – 2014: Associate Professor of Hydrology and Vice Chair (2012-2014), Department of Environmental Sciences, University of California, Riverside.
2006 – 2009: Assistant Professor of Hydrology. Department of Environmental Sciences, University of California, Riverside.
2004 – 2006: Assistant Professor of Wetland Biogeochemistry. Soil and Water Science Department, University of Florida-IFAS.
2003 – 2004: Assistant Professor of Geology. Department of Geology and Geophysics, and Pontchartrain Institute for Environmental Sciences, University of New Orleans.
2001 – 2003: Senior Environmental Scientist. California Department of Water Resources, Division of Environmental Services, Sacramento, California.

ADMINISTRATIVE AND UNIVERSITY SERVICE

07/2014 – 06/2017 – **Department.** Chair, Department of Environmental Sciences.
05/2015 – 06/2015 – **College.** Member, ad hoc review committee. Undergraduate Scholarship Committee.
02/2014 – 06/2014 – **College.** Co-Chair, Environmental Sciences Graduate Program Task Force.
09/2013 – 06/2015 – **College.** Chair, faculty search committee for Watershed Hydrologist/Modeler (Environmental Sciences).
09/2013 – 06/2014 – **College.** Member, faculty search committee for Biogeochemical Climate Modeler (Earth Sciences)
09/2013 – 09/2016 – **Campus.** Member, Natural Reserve System Advisory Committee.

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10/2012 – 11/2014 – **College.** Member, College Redesign Committee, College of Natural and Agricultural Sciences (CNAS).

07/2012 – 07/2014 – **Department.** Vice Chair for Environmental Sciences undergraduate program.

09/2013 – 06/2014 – **College.** Member, CNAS Academic Oversight Committee.

10/2012 – 06/2013 – **College.** Member, faculty search committees for Paleontologist (Earth Sciences) and Plant Functional Ecologist (Botany and Plant Sciences).

01/2008 - Present - **Campus.** Director of Facility for Isotope Ratio Mass Spectrometry (FIRMS).

09/2010 - 06/2016 - **College.** Member, Steering Committee - Center for Conservation Biology.

09/2010 - 06/2014 – **Department.** Member, Undergraduate Curriculum Committee, Department of Environmental Sciences.

1/2012 - 05/2012 - **College.** Member, faculty search committee for Atmospheric Chemist position.

10/2010 - 05/2011 - **College.** Member, faculty search committee for Climatologist.

09/2010 - 09/2012 - **College.** Member, Executive Committee, College of Natural and Agricultural Sciences.

07/2009 - 09/2009 - **College.** Member, Research Instrumentation and Infrastructure Committee, College of Natural and Agricultural Sciences.

09/2008 - 06/2009 - **College.** Member, faculty search committee for Air Pollution Research Center, Department of Chemistry and Environmental Sciences.

07/2008 - 07/2009 – **Department.** Member, Graduate Program Admission Committee.

01/2007 - 12/2007 – **Department.** Member, departmental web page development committee.

01/2007 - 06/2011 – **Department.** Member, Equipment Committee.

TEACHING EXPERIENCE (UC RIVERSIDE)

2015: Limnology (ENSC 140)

2015: Introductory to Atmospheric Science (ENSC 102)

2014-2015: Freshman Learning Community Seminar (NASC 093)

2011-2015: Introduction to Environmental Sciences: Natural Resources (ENSC 001)

2007-2013: Physical Hydrology (ENSC 163)

2007, 2009, 2011, 2013 & 2016: Isotopes in Ecology and Environmental Science (ENSC 218 - Graduate).

2009, 2010, 2014: Global Change and the Earth System (ENSC 227 - Graduate).

2007-2016: Graduate Seminar in Environmental Sciences (ENSC 250/275).

GRADUATE STUDENT/POSTDOC SUPERVISION

University of Florida

2005	Melissa Martin	(M.S.)
2006	Martin Anderson	(M.S.)
2009	Andrea Albertin	(Ph.D)

University of California, Riverside

2010	William Vicars	(M.S.)
2011	Paul Koster	(M.S.)
2012	Peter Homyak	(Ph.D)
2013	Andrea Heard	(Ph.D)
2014	Amanda James	(M.S.)
2017	Jake Ashford	(Ph.D)

POSTDOC SUPERVISION

2005-07	M.Y. Ahn	U. Florida
2007-09	G. von Kiparski	U.C. Riverside
2010-12	Wei Huang	U.C. Riverside
2012-15	P. Homyak	U.C. Riverside
2013-15	S. Sadro	U.C. Riverside

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TECHNICAL JOURNAL PUBLICATIONS

(* graduate student, ^ post doc, # colleague)

50. *Homyak, P.M., *Vasquez, K.T., **Sickman, J.O.**, Parker, D.R. and J.P. Schimel. Improving nitrite analysis in soils: Drawbacks of the conventional 2 M KCl extraction. *Soil Sci. Soc. Am. J.* DOI:10.2136/sssaj2014.05.0201.
49. *Perrot, D., Molotch, N.P., Williams, M.W., Jepsen, S.M., and **J.O. Sickman**. 2014. Relationships between stream nitrate concentration and spatially distributed snowmelt in alpine catchments. *Wat. Resour. Res.* DOI:10.1002/2013WR015243.
48. *Heard, A.M., **Sickman, J.O.**, Rose, N.L., Bennett, D.M., Lucero, D.M., Melack, J.M. and J.H. Curtis. 2014. Twentieth-century atmospheric deposition and acidification trends in lakes of the Sierra Nevada, California (USA). *Environmental Science & Technology*. Vol. 48, 10054–10061.
47. *Homyak, P.M., **Sickman, J.O.**, Miller, A.M., Melack, J.M., Meixner, T. and J.P. Schimel. 2014. Assessing nitrogen impacts on chaparral ecosystems: Limitations of traditional indicators of N-saturation. *Ecosystems*. DOI: 10.1007/s10021-014-9792-2.
46. *Homyak, P.M., **Sickman, J.O.**, and J.M. Melack. 2014. Phosphorus in sediments of high-elevation lakes in the Sierra Nevada (California): Implications for internal phosphorus loading. *Aquatic Sciences*. DOI 10.1007/s00027-014-0350-y.
45. *Bell, M.D., **Sickman, J.O.**, Bytnerowicz, A., Padgett, P.E., and E.B. Allen. 2014. Variation in isotopologues of atmospheric nitric acid in passively collected samples during a summer monsoon. *Atmospheric Environment*. Vol. 94 p. 287-296.
44. *Bell, M.D., and **J.O. Sickman**. 2014. Correcting for background nitrate contamination in KCl-extracted samples during isotopic analysis of oxygen and nitrogen by the denitrifier method. *Rapid Communications in Mass Spectrometry*. Vol. 28: p.520-526.
43. *Homyak, P.M., and **J.O. Sickman**. 2014. Influence of soil moisture on the seasonality of nitric oxide emissions from chaparral soils, Sierra Nevada, California, USA. *Journal of Arid Environments*. Vol. 103: p.46-52.
42. *Homyak, P.M., **Sickman, J.O.**, and J.M. Melack. 2014. Pools, transformations and sources of P in high elevations soils: Implications for nutrient transfer to Sierra Nevada lakes. *Geoderma*. Vol. 217-218: p.67-73.
41. #Shaw, G.D., Cisneros, R., Schweizer, D., **Sickman, J.O.** and M.E. Fenn. 2013. Critical loads of acid deposition for wilderness lakes in the Sierra Nevada (California) estimated by the steady state water chemistry model. *Water, Air and Soil Pollution*. DOI 10.1007/s11270-013-1804-x.
40. #Clow, D.W., Forrester, H., Miller, B., Roop, H. **Sickman, J.O.**, Ryu, H. and J.S. Domingo. 2013. Effects of stock use and backpackers on water quality in wilderness in Sequoia and Kings Canyon National Parks. *Environmental Management*. DOI 10.1007/s00267-013-0166-x.
39. **Sickman, J.O.**, Bennett, D.M., Lucero, D.M., Whitmore, T.J., Kenney, W.F. 2013. Diatom-inference models for acid neutralizing capacity and nitrate based on 41 calibration lakes in the Sierra Nevada, California, USA. *Journal of Paleolimnology*. DOI: 10.1007/s10933-013-9711-0.
38. ^Jepsen, S.M., Molotch, N.P., Williams, M.W., Rittger, K.E., **Sickman J.O.** 2012. Interannual variability of snowmelt in the Sierra Nevada and Rocky Mountains, USA (1996-2007): Examples from two alpine watersheds. *Water Resources Research*. DOI: 10.1029/2011WR011006.
37. *Albertin, A., **Sickman, J.O.**, Pinowska, A., and R.J. Stevenson. 2012. Identification of nitrogen sources and transformations within karst springs using isotope tracers of nitrogen. *Biogeochemistry*. DOI: 10.1007/s10533-011-9592-0.

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36. #López-Medellín, X., Ezcurra, E., Gonzalez-Abraham, C., Hak, J., Santiago, L., and **J.O. Sickman**. 2011. Oceanographic anomalies and sea level rise drive mangroves inland in the Pacific coast of Mexico. *Journal of Vegetation Science*. Vol. 22: p.143-151.
35. *Vicars, W., and **J.O. Sickman**. 2011. Mineral dust transport to the Sierra Nevada, California: Loading rates and potential source areas. *Journal of Geophysical Research, Biogeosciences*: DOI:10.1029/2010JG001394.
34. ^Li, X., Miller, A.E., Meixner, T., Schimel, J.P., Melack, J.M., and **J.O. Sickman**. 2010. Adding an empirical factor to better represent the rewetting pulse mechanism in a two soil biogeochemical model. *Geoderma*. 159: 440-451.
33. *Vicars, W., **Sickman, J.O.**, Ziemann, P.J. 2010. Atmospheric phosphorus deposition at a montane site: Size distribution, effects of wildfire, and ecological implications. *Atmospheric Environment*. Vol. 44: p.2813-2821.
32. *Vasques, G.M., Grunwald, S., **Sickman, J.O.**, Comerford, N.B. 2010. Upscaling of dynamic soil organic carbon pools in a north-central Florida watershed. *Soil Science Society of America Journal*. Vol. 74: p.870–879.
31. *Vasques, G.M., Grunwald, S., Comerford, Nicholas B., and **J.O. Sickman**. 2010. Regional modeling of soil carbon at multiple depths within a subtropical watershed. *Geoderma*. Vol. 156: p.326–336.
30. **Sickman, J.O.**, Albertin, A., Anderson, M.H., Pinowska, A., and R.J. Stevenson. 2009. A Comparison of Internal and External Supply of Nutrients to Algal Mats in two First Magnitude Springs in Florida. *Journal of Aquatic Plant Management*. 47: 135-144.
29. **Sickman, J.O.**, DiGiorgio, C., Davisson, M.L., Lucero, D.M, and B. Bergamaschi. 2010. Identifying sources of dissolved organic carbon in agriculturally dominated rivers using radiocarbon age dating: Sacramento-San Joaquin River Basin, California. *Biogeochemistry*. DOI: 10.1007/s10533-009-9391-z.
28. ^Miller, A.E., Schimel, J.P., **Sickman, J.O.**, Skeen, K., Meixner, T., and J.M. Melack. 2009. Seasonal variation in nitrogen uptake and turnover in two high-elevation soils: Mineralization responses are site-dependent. *Biogeochemistry*. Vol. 93: p.253-270.
27. #Schoor, E., Vogel, J.G., Crummer, K., Lee, H., **Sickman, J.O.**, and T.E. Osterkamp. 2009. Permafrost thaw stimulates old carbon release and alters net carbon exchange from upland tundra. *Nature*. Vol. 459: p.556-559.
26. ^Ahn, M., Comerford, N.B., **Sickman, J.O.**, Zimmerman, A.R., and S. Grunwald. 2009. Carbon mineralization and labile organic carbon pools in the sandy soils of a north Florida watershed. *Ecosystems*. Vol. 12: p.672-685.
25. *Vasques, G.M., Grunwald, S., and **J.O. Sickman**. 2009. Modeling of soil organic carbon fractions using visible/near-infrared spectroscopy. *Soil Science Society of America Journal*. Vol. 73: p.176-184.
24. *Martin, M.M., Tipping, P., and **J.O. Sickman**. 2009. Invasion by an exotic tree alters above and belowground ecosystem components. *Biological Invasions*. Vol. doi:10.1007/s10530-008-9366-3.
23. *Vasques, G.M., Grunwald, S., and **J.O. Sickman**. 2008. Comparison of multivariate methods for inferential modeling of soil carbon using visible/near-infrared spectra. *Geoderma*. Vol. 146: 1-2 p.14-25.

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22. ^Engel, D., **Sickman, J.O.**, Melack, J.M., Moore, C., Esperanza, A.E., and J. Keeley. 2008. The biogeochemical legacy of prescribed fire in a mixed conifer forest of Sequoia National Park: A sixteen year record of watershed balances. *JGR Biogeosciences*. Vol. 113: doi:10.1029/2006JG000391.
21. ^Miller, A.E., Schimel, J.P., **Sickman, J.O.**, Doyle, A.P., Meixner, T., and J.M. Melack. 2007. Mineralization responses at near-zero temperatures in three alpine soils. *Biogeochemistry*. Vol. 84 (3): p.233-245.
20. **Sickman, J.O.**, Zanolli, M.J., and H. Mann. 2007. Effects of Urbanization on Organic Carbon Loads in the Sacramento River, California. *Water Resources Research*. Vol. 43: W11422, doi:10.1029/2007WR005954.
19. #Leblond, J.D., M.R. Sengcob, **J.O. Sickman**, J.D. Donald and M. Anderson. 2006. Sterols of the Syndinian Dinoflagellate parasite, *Amoebophrya* sp. ex *Alexandrium tamarensis* (Dinophyceae). *Journal of Eukaryotic Microbiology* 53 (3): 211-216.
18. #Li, X.Y., T. Meixner, **J.O. Sickman**, A.E. Miller, J.P. Schimel, and J.M. Melack. 2006. Decadal-scale dynamics of water, carbon and nitrogen in a California chaparral ecosystem: DAYCENT modeling results. *Biogeochemistry* 77 (2): 217-245.
17. #MacIntyre, S. **J.O. Sickman**, G.W. Kling, and S. Goldthwait. 2006. Pathways of nutrient supply in a small, ultra-oligotrophic arctic lake during summer stratification. *Limnology and Oceanography* 51: 1107-1124.
16. ^Miller, A.E., J.P. Schimel, T. Meixner, **J.O. Sickman** and J.M. Melack. 2005. Episodic rewetting enhances carbon and nitrogen release from chaparral soils. *Soil Biology and Biochemistry* 37: 2195-2204.
15. #Berg, N.H., A. Gallegos, T. Dell, J. Frazier, T. Proctor, **J.O. Sickman**, S. Grant, T. Blett and M. Arbaugh. 2005. A screening procedure of identifying acid-sensitive lakes from catchment characteristics. *Environmental Monitoring & Assessment* 105: 285-307.
14. #Kramer-Huth, A., A. Leydecker, **J.O. Sickman** and R.C. Bales. 2004. A two-component hydrograph separation for three high-elevation catchments in the Sierra Nevada, California. *Hydrological Processes*: 18(9):1721-1733.
13. #Meixner, T., Gutmann, C. K., Bales, R. C., Leydecker, A., **Sickman, J. O.**, Melack, J., and J. McConnell. 2004. Multidecadal hydrochemical response of a Sierra Nevada watershed: Sensitivity to weathering rate and changes in deposition. *J. Hydrol.*, 285: 272-285.
12. **Sickman, J.O.**, D. Clow and J.M. Melack. 2003. Evidence for nutrient enrichment of high-elevation lakes in the Sierra Nevada, California. *Limnology and Oceanography*: 48(5): 1885-1892.
11. #Clow, D.W., **J.O. Sickman**, R.G. Striegell, D.P. Krabbenhoft, J.G. Elliott, M. Dornblaser, D.A. Roth, and D.H. Campbell. 2003. Changes in the chemistry of lakes and precipitation in high-elevation National Parks in the Western United States, 1985-1999. *Water Resour. Res.* doi:10.1029/2002WR001533.
10. #Fenn, M.E., J.S. Baron, E.B. Allen, H.M. Rueth, K.R. Nydick, L. Geiser, W.D. Bowman, **J.O. Sickman**, T. Meixner and D.W. Johnson. 2003. Ecological effects of nitrogen deposition in the western United States. *BioScience* 53 (4): 404-420.
9. #Fenn, M.E., R. Haebuer, G.S. Tonnesen, J.S. Baron, S. Grossman-Clarke, D. Hope, D.A. Jaffe, S. Copeland, L Geiser, H.M. Rueth and **J.O. Sickman**. 2003. Nitrogen Emissions, deposition and monitoring in the western United States. *BioScience* 53 (4): 391-403.
8. **Sickman, J.O.**, A. Leydecker, Chang, C.C.Y., C. Kendall, J.M. Melack, D.M. Lucero and J.P. Schimel. 2003. Mechanisms underlying export of N from high-elevation catchments during seasonal transitions. *Biogeochemistry* 64: 1-32.

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7. **Sickman, J.O.**, J.M. Melack and J.S. Stoddard. 2002. Regional analysis of inorganic nitrogen yield and retention in high-elevation ecosystems of the Sierra Nevada and Rocky Mountains. *Biogeochemistry* 57 (1): 341-374.
6. #Leydecker, A., **J.O. Sickman** and J.M. Melack. 2001. Spatial scaling of hydrological and biogeochemical aspects of high-elevation catchments in the Sierra Nevada, California, U.S.A. *Arctic, Antarctic and Alpine Res.* 33: 391-396.
5. **Sickman, J.O.**, A. Leydecker and J.M. Melack. 2001. Nitrogen mass balances and abiotic controls on N retention and yield in high-elevation ecosystems of the Sierra Nevada, California, USA. *Water Resour. Res.* 37:1445-1461.
4. #Leydecker, A., **J.O. Sickman** and J.M. Melack. 1999. Episodic lake acidification in the Sierra Nevada, California. *Water Resour. Res.* 35: 2793-2804.
3. **Sickman, J.O.** and J.M. Melack. 1998. Nitrogen and sulfate export from high elevation catchments of the Sierra Nevada, California. *Water Air and Soil Pollution* 105: 217-226.
2. #Melack, J.M., S.K. Hamilton, and **J.O. Sickman**. 1993. Interannual solute variations in a high elevation lake of the Sierra Nevada. *Verh. Internat. Verein. Limnol.* 70: 231-234.
1. **Sickman, J.O.**, and J.M. Melack. 1992. Photosynthetic activity of phytoplankton in a high altitude lake (Emerald Lake, Sierra Nevada, California). *Hydrobiologia* 230: 37-48.
2. ^Conkle, J.L., Huang, W., **Sickman, J.O.** and J. Gan. An index approach to assess pharmaceutical and personal care product (PPCP) contamination in water. To be submitted to Environmental Monitoring and Assessment.
3. **Sickman, J.O.**, Conkle, J.L., Huang, W., and J. Gan. Identification of source of nitrate contamination in groundwater: Association of emerging contaminants and isotopologues of nitrate. To be submitted to Environmental Monitoring and Assessment.
4. *Heard, A.M. and **J.O. Sickman**. Nutrient criteria development and application to a survey of Sierra Nevada lakes. To be submitted to Ecosphere.
5. *Koster, P.D., **Sickman, J.O.**, Knapp, R.A., and O. Sarnelle. Isotopic responses of lake foodwebs to removal of non-native trout in high elevation lakes of the Sierra Nevada. To be submitted to Arctic, Antarctic and Alpine Research.
6. *McCullough, J., **Sickman, J.O.** and M.A. Anderson. Trophic position and the impact of quagga mussels on the food web in the Colorado River Aqueduct. To be submitted to Fundamental and Applied Limnology.

CONFERENCE AND SYMPOSIA PROCEEDINGS

2. **Sickman, J.O.**, Von Kiparski, G., Lucero, D.M., Schuur, E., Vogel, J.G., and W. Vicars. 2008. The Role of Lakes in Carbon Transfers from Permafrost to the Atmosphere: Eight Mile Lake, Alaska. *International Permafrost Association*. 2p. Ninth International Conference on Permafrost. Fairbanks, Alaska. 07/01/2008. *International Permafrost Association*. (Refereed)
1. Grunwald, S., Vasques, G.M., Comerford, N.B., Bruland, G.L., Bliss, C.M., and **J.O. Sickman**. Biogeochemical Soil-Landscape Modeling. (Submission Date 09/08/2008.) 13 pages. Digital Soil Mapping Conference. International Working Group on Digital Soil Mapping. (Refereed)

JOURNAL PUBLICATIONS NEAR SUBMISSION

1. Heard, A.M. and **J.O. Sickman**. Landscape analysis correlating atmospheric deposition and chemical indicators of acidification and eutrophication to inform critical load development. To be submitted to *Water, Air and Soil Pollution*.

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BOOK CHAPTERS

3. #Fenn, M.E., **Sickman, J.O.**, Bytnerowicz, A., Clow, D.W., Molotch, N.P., Pleim, J.E., Tonnesen, G.S., Weathers, K.C., Padgett, P.E., and D.H. Campbell. 2009. Methods for Measuring Atmospheric Deposition Inputs in Arid and Montane Ecosystems of Western North America. Relating Atmospheric Source Apportionment to Vegetation Effects: Establishing Cause and Effect Relationships. Editors: Elsevier Science Ltd. Oxford UK. 334p. (Refereed)
2. #Fenn, M.E., Poth, M.A., Bytnerowicz, A., **Sickman, J.O.**, and B.K. Takemoto. 2003. Effects of ozone, nitrogen deposition, and other stressors on montane ecosystems in the Sierra Nevada. Ozone Air Pollution in the Sierra Nevada--Distribution and Effects on Forests. Editors: Elsevier Science Ltd. Oxford UK. p.111-155. (Refereed)
1. #Melack, J.M., and **J.O. Sickman**. 1995. Snowmelt induced changes in seven streams in the Sierra Nevada, California. Biogeochemistry of Seasonally Snow-Covered Catchments. Editors: K.A. Tonnessen, M.W. Williams and M. Tranter. IAHS Publication no. 228. p.221-234. (Refereed)
13. **Sickman, J.O.** and D.M. Bennett. Development of critical loads for atmospheric nitrogen deposition in high elevation lakes in the Sierra Nevada (PMIS #119189). Final Report for the National Park Service. 40 pages. October 31, 2011. 40 pages. (Non-Refereed)
12. #Inglett, K.S., Osborne, T.Z., and **J.O. Sickman**. Effects of Detrital Export From Different Land Uses on Aquatic Organic Matter Quality and Food Webs of the St. Johns River, Florida. February 7, 2011. 72 pages. (Non-Refereed)
11. **Sickman, J.O.**, Tobin, J., Schlenk, D., Amrhein, C., Walton, W., Bennett, D.M. and M. Anderson. Results from Modeling of Se Bioaccumulation Potential in Proposed Species Conservation Habitats of the Salton Sea. Final Report to the Department of Water Resources: UCR Task 4. February 9, 2011. 97 pages. (Refereed)
10. #Bergamaschi, B., DiGiorgio, C., Fujii, R., Gartell, G., Harader, S., Losee, R., **Sickman, J.O.**, and T. Swift. 2008. Tracking Organic Matter in Delta Drinking Water. Science Action: News from the CALFED Science Program. 8 pages. (Refereed, Invited)
9. *Heard, A.M., Starcevich, L.H., **Sickman, J.O.**, Schweizer, D., and M. Rose. Issued 2007. Sierra Nevada Network - Lake Monitoring Protocol. U.S. Department of Interior. U.S. Department of Interior - National Park Service. 71 pages. (Non-Refereed)
8. #Stevenson, R.J., Pinowska, A., Albertin, A., and **J.O. Sickman**. Issued 2007. Ecological condition of algae and nutrients in Florida springs: The Synthesis Report. Internet. Florida Department of Environmental Protection. 58 pages. (Refereed)
7. **Sickman, J.O.** Issued 2005. Real-time monitoring of organic carbon in the Sacramento River and California State Water Project Using Process Analyzers. Departmental of Water Resources Technical Memo. 59 pages. Office of Water Quality. (Non-Refereed)

TECHNICAL REPORTS

15. ^Huang, W., Conkle, J., **Sickman, J.O.**, and J. Gan. Water Quality Assessment of the Beaumont Management Zone: Identifying Sources of Groundwater Contamination Using Chemical and Isotopic Tracers. Final Report to the State Water Resources Control Board. February 3, 2012. 93 pages. (Refereed)
14. *Heard, A.M. and **J.O. Sickman**. Nutrient-addition experiments to identify nutrient criteria for high elevation lakes of the Sierra Nevada (PMIS # 140796). Final Report for the National Park Service. 40 pages. April 1, 2011. 19 pages. (Non-Refereed)

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6. #Jellison, R.J., Dawson, D.R., and **J.O. Sickman**. Issued 2003. Arsenic sources and the feasibility of using nitrogen isotopes to determine nitrogen sources to Crowley Lake, California. Final Report. State Water Resources Control Board. 25 pages (Non-Refereed)
5. #Stoddard, J.L., Sickman, J.O. Issued 2002. Episodic Acidification of Lakes in the Sierra Nevada. Final Report. California Air Resources Board. 138 pages. (Refereed)
4. **Sickman, J.O.** Issued 2001. Sanitary Survey of the State Water Project. Survey: The Coastal Branch Aqueduct. California Department of Water Resources, Water Quality Assessment Branch. (Refereed)
3. **Sickman, J.O.** Issued 2001. Comparative analyses of nitrogen biogeochemistry in high-elevation ecosystems of the Sierra Nevada and Rocky Mountains. Ph.D. Dissertation. University of California, Santa Barbara. 350 pages. (Refereed)
2. **Sickman, J.O.**, Melack, J.M., Leydecker, A. Issued 1998. Comparative analyses of high-altitude lakes and catchments in the Sierra Nevada: susceptibility to acidification. Final Report. California Air Resources Board. 615 pages. (Refereed)
1. #Melack, J.M., and **J.O. Sickman**. Issued 1997. Monitoring of wet deposition in alpine areas of the Sierra Nevada. Final Report. California Air Resources Board. 198 pages. (Refereed)

**PROFESSIONAL PRESENTATIONS AND ABSTRACTS
(LAST 10 YEARS; PRESENTER**)**

10/2015 – Presentation**. Biological Sensors for Measuring Integrated Total Nitrogen Input (ITNI) to Arid and Semiarid Regions. Acid Rain 2015. Quinquennial International Conference, Rochester, New York.

- 12/2014 – Presentation**. Changes in High Elevation Lake Ecosystems of the Sierra Nevada during the 20th Century: Combining Long-term Monitoring with Paleolimnology. Fall Meeting 2014. American Geophysical Union. San Francisco, California.
- 11/2014 – Presentation**. Four things you should know about the California drought. Briefing for UCR Foundation Stewardship Committee Luncheon, Riverside, California.
- 10/2014 – Presentation**. Changes in high elevation lakes of the Sierra Nevada during the Anthropocene. Castle Lake Environmental Research & Education Program, Reno Nevada.
- 12/2013 – Presentation **. Changes in high elevation lake ecosystems of the Sierra Nevada during the Anthropocene. Department of Biological Sciences Seminar Series, Rensselaer Polytechnic Institute, Troy New York.
- 10/2013 – Presentation **. “Old” carbon subsidies to aquatic ecosystems mediated through soil carbon leaching, fossil fuel inputs and rapid mineral weathering . AGU Chapman Conference, Tucson, Arizona. Invited, but unable to attend.
- 3/2013 – Presentation **. Status of high elevation lakes of the Sierra Nevada in relationship to climate change and acid deposition. Brown-Bag Science Lecture, Sequoia and Kings Canyon National Parks. Invited.
- 12/2012 – Presentation **. Radiocarbon depression in aquatic foodwebs of the Colorado River, USA: Coupling between carbonate weathering and the biosphere. Fall Meeting 2012. American Geophysical Union. San Francisco, California.
- 10/2012 – Presentation**. Reconstructing Alpine Snowpacks Using Diatom Inference Models and Long-Term Records of Lake Hydrochemistry. MTNCLIM research conference. Invited. Consortium for Integrated Climate Research on Western Mountains. Estes Park, Colorado. Invited.

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- 4/2012 – Presentation**. Paleo-reconstructions of Sierra Nevada snowpack using diatom inference models. Department of Geography Colloquium, University of Colorado. Boulder Colorado. Invited.
- 4/2012 – Poster**. High elevation lakes of the western US: Are we studying systems recovering from excess atmospheric deposition of acids and nutrients? 2012 CIRES Rendezvous. Boulder, Colorado.
- 12/2011 – Presentation**. High elevation lakes of the western US: Are we studying systems recovering from excess atmospheric deposition of acids and nutrients? Invited. Fall Meeting 2011. American Geophysical Union. San Francisco, California. Invited.
- 04/2011 – Presentation**. Study design: Detection of septic system waste in the groundwater of Beaumont CA using chemical and isotopic tracers. Board of Directors Meeting, Beaumont Cherry Valley Water District, Beaumont, California. Invited.
- 04/2011 – Presentation**. Changes in high elevation lake ecosystems of the Sierra Nevada during the Anthropocene . Hewett Club Seminar, Department of Earth Sciences, University of California, Riverside. Invited.
- 12/2010 – Presentation**. Phosphorus forms and pools in high-elevation soils of the Sierra Nevada: Sensitivity to climate change. Fall Meeting 2010. American Geophysical Union. San Francisco, California. Invited.
- 12/2010 - Presentation. Gaseous N fluxes in Mediterranean catchments: From low elevation chaparral to high elevation subalpine ecosystems. Fall Meeting 2010. American Geophysical Union. San Francisco, California.
- 11/2010 - Lecture/Seminar**. Decadal to millennial scale changes in high elevation lake ecosystems of the Sierra Nevada. Fall Seminar Series: School of Natural Sciences. UC Merced. Merced, California. Invited.
- 10/2010 – Presentation**. Responses of high elevation lake ecosystems to atmospheric deposition of nitrogen: A paleolimnological perspective. 2010 Annual Meeting and Scientific Symposium Networking the Networks. National Atmospheric Deposition Program. Lake Tahoe, California.
- 09/2010 - Lecture/Seminar**. Modeling of selenium concentrations in proposed species conservation habitats of the Salton Sea. Selenium Management Strategies Workshop. Salton Sea Species Conservation Habitat Project DWR and DFG. Ontario, California.
- 03/2010 - Lecture/Seminar**. Defining drought in California: Precipitation variability over annual to millennial time scales. International Drought Symposium: Integrating Science and Policy. UCR Water Science and Policy Center. Riverside, California. Invited.
- 12/2009 - Poster. Phosphorous in the Sierra Nevada: Forms, mechanisms, and timing of release in high elevation soils. Fall Meeting. American Geophysical Union. San Francisco, CA.
- 11/2009 - Poster. Characterization and source apportionment of atmospheric phosphorus in the Sierra Nevada, California. Annual Meeting. Society for Environmental Toxicology and Chemistry. New Orleans, LA.
- 10/2009 - Presentation. Development of critical nitrogen loads using diatom-nitrogen proxies . Annual Meeting. National Atmospheric Deposition Program. Saratoga, NY.
- 08/2009 - Poster. Importance of gaseous N losses to the nitrogen budget of chaparral ecosystems of the Sierra Nevada, California. Annual Meeting. Ecological Society of America. Albuquerque, NM.
- 03/2009 - Poster. 26th Informal Symposium on Kinetic and Photochemical Processes in the Atmosphere. 26th Informal Symposium on Kinetic and Photochemical Processes in the Atmosphere. UC Riverside APRC. Riverside CA.

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- 12/2008 – Presentation**. Identification of organic substrates used in heterotrophic respiration within thawing permafrost: Eight Mile Lake, Alaska. 2008 Fall Meeting. American Geophysical Union. San Francisco, California.
- 12/2008 - Poster. The nitrogen budget for a Mediterranean chamise (*Adenostoma fasciculatum* L.) dominated watershed, Sierra Nevada, CA. 2008 Fall Meeting. American Geophysical Union. San Francisco, California.
- 12/2008 - Poster. Atmospheric deposition of coarse and fine-mode phosphorus in Sequoia National Park. 2008 Fall Meeting. American Geophysical Union. San Francisco, California.
- 12/2008 - Presentation. Permafrost thaw stimulates old carbon release and alters net carbon exchange from tundra. 2008 Fall Meeting. American Geophysical Union. San Francisco, California.
- 10/2008 – Presentation**. Effects of urbanization on nitrogen and phosphorus loads in the Sacramento River. 2008 CALFED Science. CALFED Bay/Delta Program. Sacramento, CA.
- 09/2008 - Poster. Ecological responses to three decades of climate variability in Sierra Nevada Lakes. Chapman Conference: Lakes and Reservoirs as Sentinels, Integrators, and Regulators of Climate Change. American Geophysical Union. Lake Tahoe, California.
- 07/2008 – Poster**. The role of lakes in carbon transfers from permafrost to the atmosphere: Eight Mile Lake, Alaska. Ninth International Conference on Permafrost. United States Permafrost Association. Fairbanks, Alaska.
- 06/2008 - Presentation. Stable isotope compositions of macroalgae, sediments and nitrate in Florida springs. Summer Meeting 2008. American Society of Limnology and Oceanography. St Johns, Newfoundland.
- 05/2008 – Presentation**. Applications of radiocarbon in ecology and environmental sciences. Department of Hydrologic Sciences Seminar Series. University of California, Davis. Davis, CA. Invited.
- 02/2008 – Presentation**. Applications of radiocarbon in environmental sciences. Civil and Environmental Engineering Seminar Series. UC Los Angeles. Los Angeles, CA. Invited.
- 12/2007 – Poster**. Using radiocarbon to detect the loss of old soil carbon in hydrologic fluxes from permafrost. Fall AGU Meeting. American Geophysical Union. San Francisco.
- 12/2007 – Presentation**. Effects of urbanization on organic matter loads in the Sacramento River. Fall Meeting. American Geophysical Union. San Francisco. Invited.
- 12/2007 – Presentation**. The role of lakes in carbon transfers from permafrost to the atmosphere. Fall Meeting. American Geophysical Union. San Francisco.
- 08/2007 - Presentation. Vertical flux of nutrients in Florida Springs and its relationship to persistence of algal mats. 30th Annual Congress. International Association of Theoretical and Applied Limnology. Montreal, Canada.
- 10/2006 – Presentation**. Atmospheric nitrogen deposition and aquatic ecosystems of the western United States: paleolimnological approaches to determining critical loads. 29th Annual Technical Meeting. National Atmospheric Deposition Program. Norfolk, VA. Invited.
- 01/2006 - Presentation. Exotic plant invasion alters soil microbial population dynamics. Ecology in an Era of Globalization. Ecological Society of America. Merida, Mexico.
- 12/2005 – Presentation**. Estimating external sources and rates of internal cycling of DOM using radiocarbon in the San Joaquin-Sacramento Delta. Fall Meeting. American Geophysical Union. San Francisco, CA.
- 01/2005 – Presentation**. A comparison of the relative trophic status of high-elevation lakes of the western United States. Symposium on Nitrogen Eutrophication in Xeric Wildland and Agricultural Systems. US Department of Agriculture/University of California, Riverside. University of California, Riverside. Invited.

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- 01/2005 – Presentation**. Riverine organic matter. Monthly Seminar Series. St Johns Water Management District. Palatka, FL. Invited.
- 10/2004 – Presentation**. Resolving sources of dissolved organic matter in the Sacramento-San Joaquin Delta by radiocarbon dating.. Third Biennial Science Conference. CALFED Bay-Delta Program. Sacramento, CA.
- 03/2004 – Presentation**. Nitrogen dynamics along the western slope of the Sierra Nevada, California. Departmental Seminar. Tulane University, Department of Earth Science. New Orleans, LA.

**PROFESSIONAL ACTIVITIES
(LAST 10 YEARS)**

- 10/2015: Session Chair - Atmospheric Nitrogen Deposition II: Biological Effects, Acid Rain 2015. Quinquennial International Conference, Rochester, New York, October 19-23, 2015.
- 01/2014: Scientific Advisory Committee, Acid Rain 2015. Quinquennial International Conference, Rochester, New York, October 19-23, 2015.
- 02/2012: Organizer, Southern California Groundwater & Climate Change Workshop. University of California, Riverside. February 24, 2012.
- 10/2011: Oral session organizer, “Changes In Soil Carbon Due to Climate and Human Activities”. Annual meeting of the Soil Science Society of America, San Antonio, Texas, October 14-16, 2011.
- 05/2010: Invited Participant. California Critical Loads Workshop, USDA Forest Service Riverside, California.
- 03/2010: Invited Participant, Western Lakes Monitoring Workshop, USDA Forest Service, Stevenson, Washington.
- 12/2008 – 6/2009: Member. Pelagic Fishes Contaminants Working Group. National Center for Ecological Analysis and Synthesis (NCEAS).
- 11/2009 - 05/2011 - Riverside County Office of Education. Mentoring of public schools students participating in Science Fair.

- 10/2008 - 01/2009 - Consultant. Philip Williams & Associates, Ltd. Water quality of the North Bay Aqueduct.
- 01/2005 - 12/2011 - Consultant. National Park Service, Inventory and Monitoring Program, Sequoia and Kings Canyon National Parks.
- 09/2009 - 09/2010 - Participant. Center for Arid Land Ecology. Xinjiang Institute of Ecology and Geography. Urumqi, China. Workshop.
- 09/2009 - 09/2010 - Participant. Workshop on Ecology and Sustainability in China. Chinese Academy of Sciences-UC Riverside. Beijing, China. Workshop.
- 05/2009 - 06/2009 - US Department of Agriculture: Tropical Subtropical Agricultural Research (TSTAR). Member. Grants Review Panel.
- 06/2007 - 06/2009 – Technical Advisor, Inland Empire WATERKEEPER. Santa Ana Mountains Creek Sampling Project.
- 01/2007 - 12/2008 - Consultant. National Park Service, Inventory and Monitoring Program, Denali National Park.
- Technical Advisory Committee, Inland Empire WATERKEEPER. 2007-2008 quality assurance project plan (QAPP) for sampling of forest creeks in the Cleveland National Forest. 2007-2008, Riverside, California.
- Technical Review Committee, Delta Regional Ecosystem Restoration Implementation Plan (DRERIP), Conceptual Model Review Team. May 23-25 and June 12-14, 2007, Sacramento California.
- Technical Advisory Committee, National Park Service, Inventory and Monitoring Program, Sierra Nevada Network Parks. March 2, 2007, Fresno, California.
- Attendee: Grant Writer’s Seminars and Workshop (Grant Central Station). December 12, 2005, Gainesville Florida
- Attendee: NSF Sponsored Workshop, "Frontiers in Exploration of the Critical Zone", University of Delaware – Newark, Delaware, October 24-26, 2005.

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Invited Speaker: St Johns Water Management District Monthly Seminar Series. *Riverine organic matter*. January 13, 2005. Palatka, Florida.

Attendee: CUASHI National Workshop, Hydrologic Observatories as a Community Resource. August 24-25, 2004, Logan, Utah.

Attendee: Suwannee River Basin and Estuary Integrated Science Workshop. September 22-24 2004, Cedar Key, Florida.

Invitee: National Park Service Scoping Meeting, Water Resources Research in Sequoia National Park. November 18, 2003, Three Rivers, California.

RESEARCH GRANTS AND CONTRACTS:

Past Funded

National Science Foundation - DEB. "Microbial and Hydrological Controls on Nitrogen Losses from Alpine and Chaparral Ecosystems During Seasonal Transitions". Co-Principal Investigator with J.M. Melack and J.P. Schimel (UC Santa Barbara), **\$795,190**; 09/01 2001 through 5/31/2006.

CALFED Bay-Delta Program - Drinking Water Quality Program. "Determining the Contribution of Delta Island Peat to Carbon Loads in the State Water Project Using AMS Carbon-Dating and Stable Isotope Characteristics". Principal Investigator. **\$396,088**; 1/01/ 2002 through 5/31/2006.

CALFED Bay-Delta Program - 2003 Proposition 50 PSP. "Real-time monitoring of dissolved organic carbon in the Sacramento-San Joaquin Delta". Co-Investigator with Santa Clara Water Agency, Contra Costa Water Agency, Metropolitan Water District, and California Department of Water Resources, **\$244,070**; awarded August 2003.

Louisiana Board of Regents Support Fund – 2004, Instrumentation Enhancement. "An Ion Chromatograph System for Earth and Environmental Science and Teaching". Co-Principal Investigator with R. Stoessell PI UNO) and E. Reyes (UNO), **\$38,124** awarded 4/15/2004.

University of Florida, School of Natural Resources and Environment – 2004 Seed Funding Grants. "Quantifying Dissolved Organic Matter Sources to Surface Waters in the St. Johns River Basin Using Radiocarbon Dating". Principal Investigator **\$ 23,200**. 12/15/2004 through 6/30/2005.

National Science Foundation – 2004 Major Research Instrumentation (MRI) RFP. "An Isotope Ratio Mass Spectrometer System for Biogeosciences Research and Teaching". Principal Investigator with W. Simmons (PI UNO), F. Marcantonio (Tulane) , T. Bianchi, (Tulane) J. Turner (UNO) and J. Chambers (Tulane), **\$183,794**. 9/1/2004 through 8/30/2008.

Florida Department of Environmental Protection – "Regulation of Microalgal Growth and Accrual by Nutrients in Florida Springs". Co-Principal Investigator with R.J. Stevenson (PI Michigan State) and K.R. Reddy (University of Florida). **\$93,092**. 1/1/2005 through 6/30/2006.

St. Johns River Water Management District. "Assessment of Water Quality Impacts Resulting from Development-Driven Changes in Aquatic Organic Matter Composition. Phase I: Methods Evaluation." Principal Investigator with K. Sharma, T. Anderson and T. Schuur (University of Florida). **\$142,000** 7/1/2005 through 9/30/2007.

National Science Foundation – DEB. "The Carbon Balance of Arctic Tundra in Response to Permafrost Melting: Using Radiocarbon to Detect the Loss of Old Soil Carbon". Co-Principal Investigator with T. Schuur (PI University of Florida). **\$549,213**. 9/1/2005 through 8/31/2008.

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Cooperative Ecosystem Studies Unit (CESU).

“Linking Experimental and Soil Spectral Sensing for Prediction of Soil Carbon Pools and Carbon Sequestration at the Landscape Scale”. Co-Principal Investigator with S. Grunwald (University of Florida). **\$168,000**. 9/1/2005 through 8/30/2007.

Florida Department of Environmental Protection – “Integrated Interpretation of Survey and Experimental Approaches for Determining Nutrient Thresholds for Macroalgae in Florida Springs”. Co-Principal Investigator with R.J. Stevenson (PI Michigan State) and K.R. Reddy (University of Florida). **\$96,216**. 7/1/2006 through 12/15/2007.

Managing Quagga Mussels in the Reservoirs of the Colorado River. Metropolitan Water District of Southern California. PI Michael Anderson. UC Riverside; J. Sickman co-PI. Total Amount: \$225,000. 07/01/2008 through 06/30/2010.

Assessment and control of quagga mussels: Preliminary studies for Lake Skinner and Lake Mathews. Metropolitan Water District of Southern California. PI Michael Anderson. UC Riverside; J. Sickman co-PI. Total Amount: \$24,000. 3/1/2008 through 06/30/2008.

USDI National Park Service – Cooperative Ecosystems Study Unit. “Using Paleo-Reconstructions of Lake Trophic Conditions to Establish Critical Loads for Atmospheric Nitrogen Deposition in Montane Regions of the Sierra Nevada”. Principal Investigator with D. Bennett (co-PI UC Santa Barbara), M. Brenner (collaborator, University of Florida) and L. Tarnay and A. Esperanza (collaborator, National Park Service). **\$98,745**. 12/1/2006 through 03/31/2010.

USDI National Park Service – Cooperative Ecosystems Study Unit. “Sierra Nevada Network Lake Monitoring-Water Chemistry Analyses”. Principal Investigator. **\$58,578**. 9/1/2008 through 03/31/2011.

USDI National Park Service – Cooperative Ecosystems Study Unit. “Nutrient addition experiments to identify nutrient criteria for high elevation lakes of the Sierra Nevada”. Principal Investigator with D. Bennett (co-PI UC Santa Barbara), L. Tarnay and A. Esperanza (collaborator, National Park Service). **\$20,000**. 9/1/2008 through 03/31/2011.

United States Forest Service – Intermountain Region 4. “A paleolimnological investigation of Moat Lakes, Hoover Wilderness, California”. Principal Investigator (co-PI D. Bennett, UC Santa Barbara). **\$19,855**. 8/1/2007 through 3/31/2010.

National Science Foundation - Earth Sciences-Hydrology. “Collaborative Research: Snowpack Energy and Mass Balance: Implications for Biogeochemical Feedbacks in Alpine Basins”. Principal Investigator with N. Molotch, T. Meixner and M. Williams. **\$351,567**. 12/1/2007 through 3/31/2011.

California Department of Water Resources. “Technical evaluation of species conservation habitat at the Salton Sea”. Co-Principal Investigator with M. Anderson (PI UC Riverside), D. Schlenk (co-PI UC Riverside) and C. Amrhein (co-PI UC Riverside). **\$500,000**. 6/1/2010 through 5/31/2011.

State Water Resources Control Board. “Detection of septic system waste in the groundwater of Beaumont CA using chemical and isotopic tracers”. Principal Investigator with J. Gan (co-PI, UC Riverside). **\$105,450**. 8/1/2010 through 12/31/2011.

National Science Foundation – Long-term Research in Environmental Biology (LTREB). “Responses of high elevation, aquatic ecosystems to interannual climate variability and trends in nutrient inputs (LTREB Program)”. Co-Principal Investigator with J. Melack (PI UC Santa Barbara). **\$448,667**. 3/1/2007 through 2/27/2012.

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Kearney Foundation of Soil Science. "Temporal and Spatial Patterns of Soil Organic Matter Losses in California Determined by Radiocarbon Dating of Riverborne Carbon". Principal Investigator. **\$90,000**. 1/1/2010 through 06/30/2013.

USDI National Park Service – Cooperative Ecosystems Study Unit. "Alien Invasion: Effects of Atmospheric Nitrogen Deposition on Sagebrush Steppe Vegetation Dynamics at Upper Columbia Basin Network Parks". Co-Principal Investigator with E. Allen (PI UC Riverside), D. Jenerette (co-P UC Riverside). **\$100,000**. 6/1/2010 through 5/31/2013.

National Science Foundation - Division of Earth Sciences. Postdoctoral Fellowship. "Linking lakes to the landscape: Mechanisms that control terrestrial subsidies to pelagic food webs". Sponsoring Supervisor to S. Sadro, Fellowship Recipient. **\$170,000**. 11/1/2013 through 10/31/2015.

Currently Funded

National Science Foundation – Long-term Research in Environmental Biology (LTREB). "LTREB Renewal: Responses of high elevation, aquatic ecosystems to interannual climate variability and trends in atmospheric inputs (LTREB Program)". Principal Investigator with J. Melack (co-PI UC Santa Barbara). **\$449,683**. 9/1/2012 through 8/31/2017.

US Forest Service – Forest Fire Laboratory. "Measurement of Total Atmospheric Nitrogen Deposition Using the ITNI Approach". Principal Investigator. **\$194,484**. 1/1/2012 through 12/30/2017.