

JOEL D BLUM

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EDUCATION

Ph.D. Geochemistry, California Institute of Technology 1990
M.Sc. Geological Science, University of Alaska, Fairbanks 1982
B.A. Political Science and Geological Science, Case Western Reserve University 1981

BIRTH AND CITIZENSHIP

1/24/1960; Cleveland, Ohio; US Citizen

PROFESSIONAL POSITIONS

University of Michigan, *Gerald J. Keeler Distinguished University Professor*, 2015 to present
University of Michigan, *John D. MacArthur Professor (for research)*, 1999 to present
University of Michigan, *Arthur F. Thurnau Professor (for undergraduate education)*, 2010 to present
University of Michigan, *Chair of Geological Sciences (now Earth & Env. Sci.)* 2000 to 2006
University of Michigan, *Professor of Ecology/Evolutionary Biology* 2002 to present
Dartmouth College, *Professor of Earth Sciences* 1990 to 1999
Alaska Department of Natural Resources, *Project Supervisor* 1983 to 1985
Mohawk Oil and Gas Inc. of Canada, *Exploration Geologist* 1982 to 1983

VISITING POSITIONS

Hebrew University, *Forchheimer Visiting Professor*, Institute of Earth Sciences 2011
NOAA and Univ. of Colorado, *Cooperative Institute for Research in Environmental Science (CIRES) Fellow* 2010
Stanford University, *Blaustein Fellow and Visiting Professor*, School of Earth Sciences 2006
University of Vienna, *Guest Professor* 1995.
California Institute of Technology, *Visiting Faculty in Geochemistry* 1990
Argonne National Laboratory, *Research Affiliate* (Chemistry and Materials Sci) 1988 to 1994

AWARDS

Clair Patterson Award of the Geochemical Society (2013)
Fellow of the American Geophysical Union (2012)
Fellow of the Geochemical Society (2010)
Fellow of the American Association for the Advancement of Science (2010)
Fellow of the Geological Society of America (2005)
NSF Presidential Faculty Fellowship for scientific research and teaching (1993-1998)
Sloan Research Fellow (national award for research in Physics/Chemistry)–Sloan Foundation (1992-1994)
Young Alumni Award – Case Western Reserve University (1995)
Alumni Achievement Award – University of Alaska (1995)
Environmental Science and Technology-- Excellence in Review Award (2013)
Edwards Prize for best paper in Wilson Bulletin (2001)
Nininger Award (international award for research) – Meteoritical Society (1987)

EDITORIAL POSITIONS

Inaugural Editor in Chief, Earth and Space Chemistry, American Chemical Society (2016-present)
Co-Editor in Chief, ELEMENTA: The Science of the Anthropocene (2013-2016)
Co-Editor in Chief, Chemical Geology including Isotope Geoscience (2009-2012)
Special Issue Co-Editor, Mercury Isotope Biogeochemistry, Chemical Geology (2011-2012)
Editorial Board Member –Geology (1993-2001)

REVIEW PANELS/ADVISORY COMMITTEES

National Academy of Sciences Committee on Sources of Lead Contamination (2016-present)
Environmental Law & Policy Center (Chicago), Science Advisory Council (2014-present)
Scientific Advisory Board of Environmental Metal Isotopes Conference (2013)
NSF Proposal Review Panelist–GeoBiology and Low-T Geochemistry (2012)
DOE-ORNL Mercury SFA Scientific Advisory Committee (2010-2014)
NSF Proposal Review Panelist–Ecosystem Science (2010)
Canadian Institute for Advanced Research Review Panel Chair (2008)
NSF Proposal Review Panelist–CRONOS-Earth Program (2008)
External Review Committee, Virginia Tech (2008)
NIH/NIEHS Superfund Basic Research Scientific Review Committee (2005)
DOE Basic Energy Science Committee of Visitors, Geosciences Panel Chair (2005)
External Review Committee, UC-Santa Cruz (2004)
External Review Committee, Woods Hole Oceanographic Institution (2004)
DOE Proposal Review Panelist–Environmental Management Science Program (2003)
NSF Proposal Review Panelist–Equipment and Facilities Program (1996, 1998-2000)
NSF Proposal Review Panelist–Postdoctoral Fellowship Program (1996)

SERVICE TO UNIVERSITY OF MICHIGAN

College of LSA, Executive Committee (elected), 2014-present
College of LSA, Divisional Evaluation Committee, 2011-2014
Director, Camp Davis Rocky Mountain Field Station, 2005 to 2013
Rackham Graduate School, Distinguished Professor Selection Committee, 2013
Biological Station Executive Committee 2001-present
Provost's Office, Thurnau Professorship Selection Advisory Committee, 2011
Graham Fellows Selection Advisory Committee, 2010
Graham Environmental Sustainability Institute Executive Committee, 2006-2009
Provost's Office Tenure Review Panel 2007, 2008, 2009
Program in the Environment Faculty Associate 2003-2008
Geological Sciences Department Chair 2000-2005
LSA Faculty Development Committee 2001-2003
Program in the Environment Executive Committee 2001-2002
Assoc. VP Research Search Committee Member 2002
CIC Academic Leadership Program Fellow 2000-2001
Leadership and Human Resources
Long-range Planning and Budgeting
The Future University: Motivating Change
CIC Department Executive Officer Program 2002

SERVICE AT DEPT LEVEL

Chair, EES Tenure Review Panel, 2014
Member, EES Tenure Review Panel, 2006, 2012, 2013, 2014, 2015, 2016
Member AOSS Tenure Review Panel, 2014
Executive Committee Member, 2007-2009, 2011-2013
Long-Term Plan Committee, 2010-2011
Junior Faculty Mentor for six faculty in E&ES, EHS, and Chemistry 2008 to present
Search committee chair for faculty positions, 2006, 2007, 2011

RESEARCH GRANTS *EXPIRED*

National Science Foundation, Division of Earth Sciences, Geology and Paleontology Program, Radiogenic Isotope Systematics of Granitoid Weathering: The Influence of Climate and Glacial History. 1992-1994. \$145,000. (with Y Erel)

National Science Foundation, Division of Biology, Ecosystem Studies Program, Measurement of Base Cation Cycling in a Forest Ecosystem Using Sr Isotope Tracers and Mass Balance Methods. 1992-1995. \$217,000. (with A Friedland)

National Science Foundation, Division of Earth Sciences, Petrology and Geochemistry Program, Isotopic study of synmetamorphic Acadian granitoids: Implications for magma genesis, metamorphism, and crustal heat flow. 1991-1994. \$69,500. (with C Chamberlain)

Alfred P. Sloan Foundation Research Fellowship in Physics/Chemistry. 1992-1994. \$30,000.

National Science Foundation, Division of Research Career Development, Presidential Faculty Fellow. 1993-1998. \$500,000.

National Science Foundation, Continental Dynamics Program, Division of Earth Science, Collaborative Research. Crustal Reworking During Orogeny: An Active-System Himalayan Perspective. 1995-1998. \$313,371. (with C Chamberlain)

National Science Foundation, Instrumentation and Facilities, Division of Earth Science, Acquisition of a multi-collector thermal ionization mass spectrometer for Dartmouth College. 1995-1997. \$237,000.

W.M. Keck Foundation, Environmental Science: Enhancements to the stable isotope mass spectrometry and elemental analysis laboratories at Dartmouth College. 1996-1997. \$500,000. (with C Chamberlain, R Virginia, A Friedland)

National Institute of Environmental Health Sciences, Superfund Basic Research Program, PI of ICP-MS Trace Analysis Analytical Core, Toxic Metals in the Northeast. 1995-1999. \$405,266.

U. S. Forest service, A collaborative approach to the restoration ecology and management of juvenile Atlantic Salmon (*Salmo salar*) in forested ecosystems: Part II, New Initiatives 1995-1996. \$21,000. (with C Folt, C Chamberlain)

Davis Conservation Foundation, Atmospheric pollution as a potential cause of songbird decline in the Northern Forest. 1995-1996. \$10,000. (with R Holmes, C Chamberlain)

United States-Israel Binational Science Foundation, In Situ Study of Mineral Weathering Rates Using Pb and Sr isotopes. 1996-1998. \$106,500. (with Y Erel)

National Science Foundation, Tectonics Program, Regional fluid flow in collisional mountain belts: An active system, Southern Alps, New Zealand. 1998-2000. \$149,747 (with C Chamberlain)

National Institutes of Health, Arsenic Analyses for Epidemiology of Non-Melanoma Skin Cancer in New Hampshire. 1997-2000. \$24,000. (with M Karagas)

NOAA, National Marine Fisheries Service, Isotopic Tracers in Atlantic Salmon. 1998-2000. \$450,000. (with C Folt and C Chamberlain).

USDA, Small Business Innovation Research Award, Filters to Provide Potable Water From Arsenic Contaminated Waters-I. 2000-2001. \$20,000 (with Rajan Vempati, ChK Group, Inc.)

University of Michigan OVPR Geosciences Initiative, Sources, Fate and Transport of Toxic Metals in the Geosphere. 2000-2002. \$250,000 (with R. Ewing, K. Hayes, L. Abriola UM CoE; J. Keeler, UM Public Health, and L. Walter UM LSA.).

National Science Foundation, Ecosystem Studies Program, The Role of Calcium in the Structure and Function of a Northern Harwood Forest--Michigan Subcontract. 1998-2003. \$377,583—Michigan subcontract with Syracuse University.

National Institute of Environmental Health Sciences, Superfund Basic Research Program: Sources and Fate of Arsenic in Groundwater. 2000-2005. \$301,925.

United States-Israel Binational Science Foundation, Isotopic Analyses of Sr and Pb during Dissolution of Granitoids. 2000-2003. \$18,000 (with Y. Erel).

USDA, Small Business Innovation Research Award, Filters to Provide Potable Water From Arsenic Contaminated Waters-II. 2001-2004. \$25,000 (with Rajan Vempati, ChK Group, Inc.)

National Aeronautics and Space Administration, The Abundance and Isotopic Composition of Hg in Extraterrestrial Materials. 2001-2004. \$60,000 (with B. Klaue and D. Lauretta).

National Science Foundation, EAR, Isotopic Geochemistry of Mercury in Hydrothermal Systems. 2001-2004. \$200,335 (with S. Kesler).

University of Michigan OVPR Great Lakes Initiative, Watershed-Great Lakes Interactions: Defining the Ecological Footprint of the Muskegon River Watershed on Fisheries in Nearshore Lake Michigan. \$100,000. (with E Rutherford UM SNRE, D Jude, M Wiley, J Diana and S Adlerstein UM SNRE, B Kennedy UM LSA, T Johengen UM CoE, and D Mason, B Eadie and S Peacor NOAA.

National Science Foundation-BIO-IRCEd, Biotic control of Calcium Supply: Distinguishing Sources for Regrowing Forests. 2003-2006. \$263,815.

USDA-CSREES, Where Do Young Northern Forests Get Their Calcium? Implications for Repeated Harvest and Calcium Depletion. 2003-2006. \$60,000 (with R Yanai).

National Science Foundation, Office of Polar Programs Arctic System Science Program, Snow and Ice Processes in the Deposition and Fate of Mercury in the Arctic. 2004-2007, \$354,382.

National Science Foundation-BioGeochemistry, Mercury Isotope Fractionation by Microbial and Abiotic Redox Transformations. Geobiology Program. 2004-2008. \$220,000.

National Science Foundation, Ocean Sciences, History and Timescale of Paleoceanographic Change in the Arctic Ocean, 2005-2009, \$251,559 (Co-I with T Moore, J Gleason, R Owen).

San Francisco Estuary Institute, Use of the natural isotopic variation of mercury to determine sources of mercury to San Francisco Bay food webs. 2008-2010, \$115,000.

US Department of Agriculture, Soil calcium and reproduction of sugar maple in northeastern forests. 2007-2010, \$40,000.

National Science Foundation, DEB, Long-Term Ecological Research at Hubbard Brook. 2005-2011. \$230,000.

State of Florida, Department of Environmental Quality, Modeling and measurements to determine the sources and impacts of mercury contamination across Florida. 2008-2012. \$425,107 (Blum sub-account).

National Science Foundation, ARC, Arctic Ocean redox history and Hg cycling using redox-sensitive trace metals and Hg isotopes: the influence of sea ice. 2009-2012, \$191,972 (with J Gleason)

Swiss National Science Foundation, Collaborative Research on Mineral Weathering, 2011-2012, \$40,000 (UM)

Marsden Fund New Zealand, Collaborative Research: Do rock eating fungi determine ecosystem fate? 2010-2013, \$84,315 (UM)

National Science Foundation, DEB, Collaborative Research: Nutrient co-limitation in young and mature northern hardwood forests. 2010-2016, \$77,678 (+\$6500 REU supplement).

National Science Foundation, EAR, Collaborative Research: Mass dependent and independent mercury isotope fractionation during microbial methylation and redox transformations of mercury in natural waters. 2010-2015. \$242,249.

US Fish and Wildlife Service, Effects of strontium on the lesser Scaup in interior Alaska, 2012-2015. \$24,000.

DOE Subsurface Biogeochemical Research, Isotopic Characterization of Biogeochemical Pools of Mercury and Determination of its Reaction Pathways for Methylation. 2011-2015. \$992,709 (UM \$570,000)

National Science Foundation, EAR, Collaborative Research: Establishing Process Links Between Streamflow, Sediment Transport/Storage, and Biogeochemical Processing of Mercury. 2012-2015. \$150,000 (with M Singer).

RESEARCH GRANTS CURRENT

National Science Foundation, DEB, Long-Term Ecological Research at Hubbard Brook. 2011-2016. \$205,000.

National Science Foundation, DEB, Preliminary Proposal: "SG" Sources and Degradation Mechanisms of Methylmercury in Temperate Forest Ecosystems 2014-2017. \$190,000 (with Martin Tsui).

DuPont Engineering and Technology, Isotopic Characterization of Mercury at DuPont South River Site, Virginia, 2014-2017. \$175,000

National Science Foundation, Chemical Oceanography, Collaborative Research: Isotopic insights to mercury in marine food webs and how it varies with ocean biogeochemistry 2014-2017. \$358,000 UM portion (with B Popp, J Drazen and C. Benitez-Nelson).

DOE Subsurface Biogeochemical Research, Use of Stable Mercury Isotopes to Assess Mercury and Methylmercury Transformation and Transport across Critical Interfaces from the Molecular to the Watershed Scale. 2016-2019. \$600,000 (UM \$540,000) (with J Demers).

National Science Foundation, EAR-IF, Upgrade of community-oriented ICP-MS facilities for teaching and research at the University of Michigan 2014-2017. \$742,266 (with I HENDY et al).

PUBLICATIONS

*student or postdoctoral advisee

Published

2016 (n=205; ISI: h=50, citations=7881; Google: h=62, citations=11905) (13 in Nature Pubs; 2 in Science)

- Blum JD and Johnson MW. Recent Developments in Mercury Stable Isotope Analysis. Non-traditional Isotope Geochemistry, Reviews of Mineralogy Series. (in press)
- Gleason JD, Blum JD, Moore TC; Polyak L, Jakobsson M, Meyers PA, *Biswas A. Sources and cycling of mercury in the paleo Arctic Ocean from Hg stable isotope variations in Eocene and Quaternary sediments. *Geochimica et Cosmochimica Acta* (in press)
- *Donovan PM, Blum JD, Singer MB, Marvin-DiPasquale M, Tsui MTK. (2016) Methylmercury degradation and exposure pathways in streams and wetlands impacted by historical mining. *Science of the Total Environment* (in press)
- Sunderland E, Driscoll C, Hammitt J, Grandjean P, Evans J, Blum JD, Chen C, Evers D, Jaffe D, Mason R, Goho S, Jacobs W. (2016) Benefits of Regulating Hazardous Air Pollutants from Coal and Oil-Fired Utilities in the United States" *Environ Sci and Tech Letters* 50, 2117-2120.
- *Kwon SY, Blum JD, Madigan DJ, Block BA, Popp BN. (2016) Quantifying mercury isotope dynamics in a captive pelagic fish, Pacific bluefin tuna (*Thunnus orientalis*). *Elementa* (in press)
- Singer M, Harrison L, Donovan P, Blum JD, Marvin-DiPasquale, M. (2016) Hydrologic indicators of hot spots and hot moments of mercury methylation along river corridors. *Science of the Total Environment* (in press)
- Fahey TJ, Heinz AK, Battles JJ, Fisk MC, Driscoll CT, Blum JD and Johnson CE. (2016) Fine Root Biomass Declined in Response to Restoration of Soil Calcium in a Northern Hardwood Forest. *Canad J of Forest Research* (in press)
- Gustin M, Evers D, Bank M, Hammerschmidt C, Pierce A, Basu N, Blum, JD, Bustamante P, Chen C, Driscoll C, Horvat M, Jaffe DM, Pacyna J, Pirrone N, Selin N. (2016) Importance of integration and implementation of emerging and future mercury research into the Minamata Convention. *Environ Sci and Tech* (in press)
- *Donovan PM, Blum JD, Singer MB, Marvin-DiPasquale M, Tsui MTK. (2016) Isotopic composition of inorganic mercury and methylmercury downstream of a historical gold mining region. *Env. Sci and Tech.* 50, 1691-1702.

2015 (196)

- Demers JD, Blum JD, Keeler GJ, *Sherman LS, Marsik F, Dvonch TJ. (2015) Coupling atmospheric mercury isotope ratios and meteorology to trace sources of mercury in air over Pensacola, Florida, USA. *Global Biogeochem Cycles* 29, 1689-1705.
- Emslie SD, Brasso R, Patterson W, McKenzie A, Silva AM, Valera AC, Gleason JD, and Blum JD. (2015) Chronic mercury exposure in Late Neolithic/Chalcolithic populations in Portugal from the cultural use of cinnabar *Scientific Reports* 5, DOI: 10.1038/srep14679.
- Shuai S, CT Driscoll, CE Johnson, TJ Fahey, JJ Battles, JD Blum. (2015) Long-term responses in soil solution and streamwater chemistry at Hubbard Brook after experimental addition of wollastonite. *Environmental Chemistry* (in press)
- *Janssen S, Johnson MW, Blum JD, Barkay T and Reinfelder, JR. (2015) Separation of monomethylmercury from estuarine sediments for mercury isotope analysis. *Chemical Geology* 411, 19-25.
- Balogh SJ, *Tsui MTK, Blum JD, Matsuyama A, Yano S, Tada A. (2015) Using Stable Isotopes to Track the Fate of Mercury in the Fish and Bottom Sediments of Minamata Bay, Japan *ES&T* 49, 5399-5406.
- Rose CH, Ghosh S, Blum JD and Bergquist, BA (2015) Effects of ultraviolet radiation on mercury isotope fractionation during photo-reduction for inorganic and organic mercury species. *Chemical Geology* 405, 102-111.

- *Kwon SY, Blum JD, Dvonch TJ, Nadelhoffer K, Tsui MTK. (2015) Isotopic study of mercury sources and transfer between a freshwater lake and adjacent forest food web. *Sci Total Environ* 48, 10089-10097.
- *Sherman, L.S., Blum, J.D., Basu, N., Rajaei, M., Evers, D.C., Buck, D.G., Petrlik, J. and DiGangi, J. (2015) Assessment of mercury exposure among small-scale gold miners using mercury stable isotopes *Environ. Res.* 137, 226-234.

2014 (188)

- *Sherman, L.S., Blum, J.D., Dvonch, J.T., Gratz, L.E., and Landis, M.S. (2014) The use of Pb, Sr, and Hg isotopes in Great Lakes precipitation as a tool for pollution source attribution. *Sci. Tot. Env.* 502, 364-374.
- *Kwon, S.Y., Blum, J.D., Chen, C., Meattley, D., Mason, R.P. (2014) Mercury isotope study of sources and exposure pathways of methylmercury in estuarine food webs in the Northeastern USA. *Env. Sci and Tech.* 48, 1089-1097.
- *Tsui M.T.K., Blum, J.D., Finlay, J.C., Balogh, S.J., Nollet, Y.H., Palen, W., and Power, M. (2014) Variation in terrestrial and aquatic sources of methylmercury for stream predators as revealed by stable mercury isotopes, *Env. Sci and Tech.* 48, 10128-10135.
- *Donovan, P.M., Blum, J.D., Demers, J.D., Gu, B., Brooks, S.C. and Peryam, J. (2014) Identification of multiple mercury sources to stream sediments near Oak Ridge, TN, USA. *Env. Sci and Tech.* 48, 3666-3674.
- Li, M., *Sherman, L.S., Blum, J.D., Grandjean, P., Mikkelsen, B., Weihe, P., Sunderland, E.M. and Shine, J.P. (2014) Assessing sources of human methylmercury exposure using stable mercury isotopes. *Env. Sci and Tech.* 48, 8800-8806.
- Johnson, C.E. Driscoll, C.T., Blum, J.D., Fahey, T.J., Battles, J.J. (2014) Soil Chemical Dynamics after Calcium Silicate Addition to a Northern Hardwood Forest. *SSSA* 78, 1458-1468.
- Cleavitt, N.L., Battles, J.J., Fahey, T.J., Blum, J.D. (2014) Determinants of survival over seven years for a natural cohort of sugar maple seedlings in a northern hardwood forest. *Canad. J of Forest. Res.* 44, 112-1121.
- Vadeboncoeur, M.A., Hamburg, S.P., Yanai, R.D. and Blum, J.D. (2014) Rates of sustainable forest harvest depend on rotation length and weathering of soil minerals. *Forest Ecology and Management* 318, 194-205.
- Blum, J.D., *Sherman, L.S. and Johnson, M.W. (2014) Mercury Isotopes in Earth and Environmental Science, *Annual Reviews of Earth and Planetary Science* 42, DOI: 10.1146/annurev-earth-050212-124107.
- *Koele, N., Dickie, I.A., Blum, J.D., Gleason, J.D., and de Graaf, L. (2014) The ecological significance of mineral weathering in ectomycorrhizal and arbuscular mycorrhizal ecosystems: a field-based comparison. *Soil Biol Biochem* 69, 63-70
- Dickie, I.A., *Koele, N., Blum, J.D., Gleason, J.D. and McGlone, M.S. (2014) Mycorrhizas in changing ecosystems, *Botany*, 92, 149-160.
- Madenjian, C.P., Johnson, N.S., Siefkes, M.J., Dettmers, J.M., Blum, J.D., Johnson, M.W. (2014) Mercury accumulation in sea lamprey (*Petromyzon marinus*) from Lake Huron, *Science of the Total Environment* 470, 1313-1319.

2013 (176)

- Blum, J.D., Popp, B.N., Drazen, J.C., Choy, C.A. and Johnson, M.W. (2013) Evidence for methylmercury production below the mixed layer in the North Pacific Ocean. *Nature Geoscience* 6, 879–884 doi:10.1038/ngeo1918
- Battles, J.J., Fahey, T.J., Driscoll, C.T., Blum, J.D. and Johnson, C.E. (2013) Restoring Soil Calcium Reverses Forest Decline. *Env. Sci and Tech. Letters*, 1, 15–19, DOI: 10.1021/ez400033d
- Brown, G. Jr., Sleeper, K., Johnson, M.W., Blum, J.D. and Cizdziel, J.V. (2013) Preliminary assessment of mercury concentrations, speciation, and isotopic composition in sediment from cold seeps in the northern Gulf of Mexico, *Marine Poll. Bulletin* 77, 308-314.
- Blum, J.D. (2013) Mesmerized by Mercury. *Nature Chemistry* 5, 1066.
- *Lynam, M.M., *Klaue, B., Keeler, G.J. and Blum, J.D. (2013) Using Thermal Analysis Coupled to Isotope Addition Cold Vapor ICP-MS in the Quantification of Atmospheric Particulate Phase Mercury. *Journal of Analytical Atomic Spectrometry* 28, 1788-1795

- *Kwon, S.Y., Blum, J.D., Chirby, M. and Chesney, E. (2013) Application of mercury isotopes for tracing trophic transfer and internal distribution of mercury in marine fish feeding experiments. *Environmental Toxicology and Chemistry* **32**, 2322-2330.
- *Donovan, P.M., Blum, J.D., Yee, D., *Gehrke, G.E. and Singer, M.B. (2013) An isotopic record of mercury in San Francisco Bay sediment. *Chemical Geology* **349-350**, 87-98.
- *Sherman, L.S., Blum, J.D., Franzblau, A. and Basu, N. (2013) New insight into biomarkers of human mercury exposure using naturally occurring mercury stable isotopes. *Env. Sci and Tech.* **47**, 3403-3409.
- *Tsui M.T.K., Blum, J.D., Finlay, J.C., Balogh, S.J., *Kwon, S.Y. and Nollet, Y.H. (2013) Photodegradation of methylmercury in stream ecosystems. *Limnology and Oceanography* **58**: 13-22.
- *Demers, J.D., Blum, J.D. and D.R. Zak. (2013) Mercury isotopes in a forested ecosystem: implications for air-surface exchange dynamics and the global mercury cycle. *Global Biogeochemical Cycles*, doi10.1029/2011GB004202.
- Douglas, T.A., Blum, J.D., Guo, L., *Keller, K., Gleason, J.D. (2013) Hydrochemistry of seasonal flow regimes in the Chena River, A subarctic watershed draining discontinuous permafrost in interior Alaska. *Chemical Geology* **335**, 48-62.
- *Sherman, L.S. Blum, J.D. (2013) Mercury stable isotopes in sediments and largemouth bass from Florida lakes. *Science Total Environ.* **448**, 163-175.
- Mil-Homens, M., Blum, J. D., Canário, J., Caetano, M., Costa, A., Lebreiro, S., Trancoso, M. A., Johnson, M., Branco, V., Salgueiro, R., Brito, P., Mouro, F., Mateus, M., Melo, Z., de Stigter, H., Richter, T., Boer, W. (2013) Tracing anthropogenic Hg and Pb input using stable Hg and Pb isotope ratios in sediments of the central Portuguese Margin. *Chemical Geology*, **336**, 62-71.
- *Kritee, K., Blum, J.D., Reinfelder, J.R. and Barkay, T. (2013) Microbial stable isotope fractionation of mercury: a synthesis of present understanding and future directions. *Chemical Geology*, **336**, 13-25.
- Sonke, J.E. and Blum, J.D. (2013) Advances in mercury stable isotope biogeochemistry. *Chemical Geology* **336**, 1-4.
- Ghosh, S., Schauble, E.A., Couloume, G.L., Blum, J.D. and Bergquist, B.A. (2013) Estimation of nuclear volume dependent fractionation of mercury isotopes in equilibrium liquid-vapor evaporation experiments. *Chemical Geology*, **336**, 5-12.
- Blum, J.D., M.W. Johnson, J.D. Gleason, J.D. Demers, M.S. Landis, and S. Krupa. (2012) Mercury concentration and isotopic composition of epiphytic tree lichens in the Athabasca oil sands region. In Kevin E. Percy, editor: *Developments in Environmental Science*, Vol. 11, Amsterdam, The Netherlands, pp. 373-390. ISBN: 978-0-08-097760-7.

2012 (158)

- *Tsui M.T.K., Blum, J.D., *Kwon, S.Y., Finlay, J.C., Balogh, S.J. and Nollet, Y.H. (2012) Sources and Transfers of Methyl Mercury Between Adjacent River and Forest Food Webs. *Env. Sci and Tech.* **46** 10957-10964.
- *Sherman, L.S, Blum, J.D., Keeler, G.J., Demers, J.D. and Dvonch, J.T. (2012) Investigation of local mercury deposition from a coal-fired power plant using mercury isotopes. *Env. Sci and Tech.* **46** (1), pp 382–390.
- *Kwon, S.Y., Blum, J.D., Carvan, M.J., Basu, N., Head, J.A., Madenjian, C.P., et al. (2012) Absence of stable isotope fractionation of methylmercury during trophic transfer in freshwater food webs. *Environmental Science & Technology.* **46** (14), 7527–7534.
- Vadeboncoeur, M.A., Hamburg, S.P, Blum, J.D., Pennino, M.J., Yanai, R.D., Johnson, C.E. (2012) The Quantitative Soil Pit Method for Measuring Belowground Carbon and Nitrogen Stocks. *Soil Science Society of America Journal.* **76**: 2241-2255.
- Davis, J.A., Looker, R.E., Yee, D., Marvin-DiPasquale, M., Grenier, J.L., Austin, C.M., McKee, L.J., Greenfield, B.K., Brodberg, R., Blum, J.D. (2012) Reducing Methylmercury Accumulation in the Food Webs of San Francisco Bay and Its Local Watersheds. *Environ Res*, **119**: 3-26.
- *Cho, Y., Driscoll, C.T., Johnson, C.E., Blum, J.D. and Fahey, T.J. (2012) Watershed-Level Responses to Calcium Silicate Treatment in a Northern Hardwood Forest *Ecosystems* **15**: 416-434.
- Lucash, M.S., Yanai, R.D., Blum, J.D., and Park, B.B. (2012) Foliar nutrient concentrations related to soil sources across a range of sites in the northeastern USA. *Soil Sci Soc Amer J*, **76**, 674-683.

Blum, J.D., Hamburg, S.P., Yanai, R.D. and Arthur, M.A. (2012) Determination of foliar Ca/Sr discrimination factors for six tree species and implications for Ca sources in northern hardwood forests, *Plant and Soil*. 356, 303-314.

*Sherman, L.S, Blum, J.D., Douglas, T.A., and Steffen, A. (2011) Frost flowers growing in the Arctic ocean-atmosphere-sea ice-snow interface: Part 2: Mercury exchange between the atmosphere, snow and frost flowers. *J Geophys Res*. 117 (D3) DOI: 10.1029/2011JD016186.

Enzel, Y., Amit, R., Grodek, T., Ayalon, A., Lekach, J., Porat, N., Bierman, P.R., Blum, J.D. & Erel, Y. (2012) Late Quaternary depositional landforms in Nahal Yael, Israel: Impact of climatic change on an arid watershed, *GSA Bulletin*, v. 124 no. 5-6 p. 705-722.

2011

Domine, F., Gallet, J.-C., Barret, M., Houdier, S., Voisin, D., Douglas, T.A., Blum, J.D., Beine, H.J., Anastasio, C., Bréon, F.-M. (2011) The specific surface area and chemical composition of diamond dust near Barrow, Alaska *J Geophys Res*. 116, DOI: 10.1029/2011JD016162

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