Stanford

Katharine (Kate) Maher

Associate Professor of Earth System Science

Curriculum Vitae available Online

Bio

ACADEMIC APPOINTMENTS

- Associate Professor, Earth System Science
- Affiliate, Precourt Institute for Energy

ADMINISTRATIVE APPOINTMENTS

- Mendenhall Postdoctoral Fellow, U.S. Geological Survey, (2005-2007)
- Visiting Professor, Hydrogeology, Colorado College, (2007-2007)
- Assistant Professor, Stanford University, (2007-2015)

HONORS AND AWARDS

- Fellow, American Geophysical Union (2015)
- James B. Macelwane Medal, American Geophysical Union (2015)
- NSF CAREER Award, National Science Foundation (2013)
- Allen V. Cox Award for Mentoring of Undergraduate Research, Stanford University (2012)
- Distinguished Lecturer, Global Climate and Energy Project (GCEP) (2012)
- Terman Fellowship, Stanford University (2008-2011)
- SEGRF Scholar, Lawrence Livermore National Laboratory (2002 - 2005)
- ARCS Foundation Scholar, U.C. Berkeley (2000 - 2001)

BOARDS, ADVISORY COMMITTEES, PROFESSIONAL ORGANIZATIONS

- Keynote Speaker: Goldschmidt Conference, Yokohama, Japan, Goldschmidt Conference (2016 - 2016)
- Member, Policy and Planning Board (PPB), Stanford University (2015 - present)
- Steering Committee, National Science Foundation Critical Zone Observatory (CZO) Program, National Science Foundation (2015 - present)
- Member, U.S. Geological Survey Hiring Panel, U.S. Geological Survey (2015 - 2015)
- Member, search committee for land-water systems position, EESS, Stanford University (2015 - 2015)
- Participant, DOE-BER, Basic Research Needs for Environmental Management Workshop, Bethesda, MD, Department of Energy (2015 - 2015)
- Participant, DOE-BES, Roundtable on Foundational Research Relevant to SubTER, Germantown, MD, Department of Energy (2015 - 2015)
- Participant, SIno-U.S. Critical Zone Observatory Workshop, Guiyang, China, National Science Foundation (2015 - 2015)
- Co-organizer of NSF workshop on “Research Infrastructure in Support of NSF-SEP Grand Challenges”, National Science Foundation (2014 - present)
- Director of Undergraduate Studies, GES Department, Stanford University (2014 - present)

- Co-organizer of NSF workshop on "The Role of Reactive Transport Models in Biogeochemical Sciences", National Science Foundation (2014 - 2015)
- Organizer and instructor, Stanford Reactive Transport (StaRT) Summer School, Stanford University (2014 - 2015)
- Member, School of Earth Sciences teaching task force, Stanford University (2013 - 2014)
- Co-instructor, 2-day short course, "Reactive transport modeling using The Geochemist's Workbench® ", Goldschmidt Conference (2013 - 2013)
- Keynote Speaker, Goldschmidt Conference, Florence, Italy, Goldschmidt Conference (2013 - 2013)
- Panelist, Hydrologic Sciences, National Sciences Foundation (2013 - 2013)
- Theme Organizer (Climate, Weathering and Tectonics) and Session Chair, Goldschmidt Conference, Florence, Italy, Goldschmidt Conference (2013 - 2013)
- Member, Stanford Center for Carbon Storage, Stanford University (2012 - present)
- Organizer, School of Earth Sciences Distinguished Lecture Program Committee, Stanford University (2012 - present)
- Member, Selection Committee for the Stanford Interdisciplinary Graduate Fellowships (SIGF), Stanford University (2012 - 2014)
- Invited Abstracts: American Geophysical Union Fall Meeting, San Francisco, CA, American Geophysical Union (2012 - 2012)
- Invited Abstracts: Goldschmidt Conference, Montreal, Canada;, Goldschmidt Conference (2012 - 2012)
- Invited Lecturer, LCLS/SSRL Users' Meeting and Workshop, "Opportunities with Synchrotron Radiation at the Mesoscale", Stanford University (2012 - 2012)
- Invited Lecturer, Symposium, "Opportunities with Synchrotron Radiation at the Mesoscale", Exxon-Mobil, DuPont, Schlumberger and General Electric, University of Oregon (2012 - 2012)
- Member, Advisory Committee for Molecular Environmental and Interface Science (MEIS), SSRL/SLAC, Molecular Environmental and Interface Science (MEIS), SSRL/SLAC (2012 - 2012)
- Invited Abstract, American Geophysical Union Fall Meeting, San Francisco, CA, American Geophysical Union (2011 - 2011)
- Invited Abstracts: Goldschmidt Conference, Prague, Czech Republic, Goldschmidt Conference (2011 - 2011)
- Invited Lecturer: Yale University, UC Berkeley, GCEP Research Symposium, Yale, UC Berkeley, and Global Climate and Energy Project (2011 - 2011)
- Invited Participant: "Design of Global Environmental Gradient Experiments using International CZO (Critical Zone Observatory) Networks", University of Delaware (2011 - 2011)
- Invited Participant: ICDP/Oman Drilling Workshop, International Continental Scientific Drilling Program (2011 - 2011)
- Advisor for the GES Undergraduate Major and Minor, GES Department, Stanford University (2010 - present)
- Member, Geochronology Steering Committee, School of Earth Sciences, Stanford University (2010 - present)
- Member, SHRIMP-RG Advisory Committee, School of Earth Sciences, Stanford University (2010 - present)
- Co-instructor, 2-day short course, "Reactive transport modeling using The Geochemist's Workbench® " (with Craig Bethke), Stanford University (2010 - 2010)
- Invited Abstracts: American Geophysical Union Fall Meeting, San Francisco, CA, American Geophysical Union (2010 - 2010)
- Invited Abstracts: Geological Society of America Conference, Denver, CO, Geological Society of America (2010 - 2010)
- Invited Lecturer, California Institute of Technology, UCLA, Boston University, Rice University (2010 - 2010)
- Keynote Speaker, Goldschmidt Conference, Knoxville, TN, Goldschmidt Conference (2010 - 2010)
- Associate Editor, American Journal of Science (appointed through 2015), American Journal of Science (2009 - present)
- Instructor/Presenter, Bay Area Geoscapes Teacher Education Program, Stanford University (2009 - present)
- Member, Jasper Ridge Biological Preserve Advisory Board, Stanford University (2009 - present)
- Member, STREAM (Stanford Training, Research & Mentoring) Advisory Board, School of Earth Sciences, Stanford University (2009 - 2012)
- Member, Undergraduate Field Program Committee, GES Department, Stanford University (2009 - 2012)
- Organizer, GES Department Seminar Program, Stanford University (2009 - 2012)
- Co-editor, (Special Volume): "Combined ecological and geologic perspectives in ecosystem studies", Chemical Geology (2009 - 2009)
- Invited Abstracts: American Geophysical Union (AGU) Fall Meeting, San Francisco, CA, American Geophysical Union (2009 - 2009)
- Invited Lecturer, Duke University, UC Davis, University of Delaware (2009 - 2009)
- Invited Participant: "Critical Zone II: Biological Aspects of Weathering", Washington, DC, Washington, DC (2009 - 2009)

- Member, DUSEL Experimental Design Team (THMCB), DUSEL (2009 - 2009)
- Symposium Chair, Goldschmidt Conference: “Bridging the gap between theory and the field in critical zone processes”, Goldschmidt Conference (2009 - 2009)
- ticipant, Experimental Coordination Workshop, Lead, SD, DUSEL (Deep Underground Science and Engineering Laboratory) (2009 - 2009)
- Director, Stanford ICPMS/TIMS Facility, School of Earth Sciences, Stanford University (2008 - present)
- Member, Undergraduate Curriculum Committee, GES Department, Stanford University (2008 - present)
- Invited Abstracts: Geological Society of America Fall Meeting, Houston, TX, Geological Society of America (2008 - 2008)
- Invited Lecturer, Lawrence Berkeley National Laboratory (2008 - 2008)
- Member, Search Committee, Geochronology, Petrology, Geodynamics position, GES Department, Stanford University (2008 - 2008)
- Symposium Chair, Goldschmidt Conference: “Chemical and isotopic tracers of sediment-pore fluid interactions”, Cologne, Germany, Goldschmidt Conference (2008 - 2008)
- Symposium Chair, Goldschmidt Conference: “Isotopic and geochemical insights into the rates and mechanisms of erosion and weathering”, Cologne, Germany, Goldschmidt Conference (2008 - 2008)
- Invited Lecturer, Yale University, ETH Zurich, Geological Society of Washington D.C., U.S. Geological Survey, Reston VA (2007 - 2007)
- Symposium Chair, AGU Fall Meeting: “Controls on geochemical and biogeochemical processes in the critical zone”, San Francisco, CA, American Geophysical Union (2007 - 2007)

PROFESSIONAL EDUCATION

- Ph.D., U.C. Berkeley , Earth and Planetary Sciences (2005)
- M.S., U.C. Berkeley , Civil and Environmental Engineering (Fluid Mechanics/Hydrology) (2001)
- B.A., Environmental Earth Sciences , Dartmouth College (1999)

LINKS

- Environmental Isotope Geochemistry: http://pangea.stanford.edu/researchgroups/eigg/
- Stanford Center for Carbon Storage (SCCS): https://pangea.stanford.edu/researchgroups/sccs/

Research & Scholarship

CURRENT RESEARCH AND SCHOLARLY INTERESTS

Research

Chemical reactions between fluids and minerals create the environments that are uniquely characteristic of Earth’s surface. For example, chemical weathering reactions support the growth of soils and organisms and regulate the flow of elements to the oceans. The rates of these reactions also control the release and storage of natural and human-derived contaminants. Over geologic timescales, mineral-fluid reactions have helped to maintain a mostly habitable planet. Over human timescales, these reactions will regulate our ability to use Earth’s resources, such as soils, waters, and minerals.

My research focuses on the rates of reactions in different environments using a combination of geochemical tools, including isotope geochemistry, geochemical and hydrologic modeling, and geochronology in order to address the following themes: (1) defining the controls on mineral-fluid reactions rates in the environment (2) finding new approaches to use mineral-fluid reactions to safely store carbon dioxide in the subsurface; and (3) development of isotopic approaches to study mineral-fluid reactions in the environments of Earth’s past. To support these research themes, I have constructed a new mass spectrometer and clean lab facility capable of high precision geochemical and isotopic measurements, and teach a number of classes and short courses on reactive transport.

Teaching

My teaching focuses on introducing students to the questions and major challenges in low-temperature and environmental geochemistry, and the application of isotope geochemistry to environmental and geologic problems. In order to introduce incoming students to Earth surface processes, materials and geochemistry, I am also

teaching a freshman seminar on forensic geoscience. At the graduate level, I offer classes on isotope geochemistry and modeling of environmental transformations and mass transfer processes (i.e., subsurface reactive transport).

Teaching

COURSES

2018-19

- Contaminant Hydrogeology and Reactive Transport: CEE 260C, ESS 221 (Win)
- Research Preparation for Undergraduates: EARTH 100 (Spr)
- The Design of Data: DESINST 215 (Spr)

2017-18

- Contaminant Hydrogeology and Reactive Transport: CEE 260C, ESS 221 (Win)
- Design for a Habitable Planet: EARTH 10 (Aut)

2016-17

- Contaminant Hydrogeology and Reactive Transport: CEE 260C, ESS 221, GS 225 (Win)
- Introduction to Isotope Geochemistry: GS 163, GS 263 (Aut)
- Losing California: Design in the age of Climate Change: EARTH 10 (Spr)

2015-16

- Contaminant Hydrogeology and Reactive Transport: CEE 260C, ESS 221, GS 225 (Win)

STANFORD ADVISEES

Doctoral Dissertation Reader (AC)

Xiaowei Li, Molly Witter

Postdoctoral Faculty Sponsor

Tristan Babey, Dana Chadwick

Doctoral (Program)

Valerie Rosen

Publications

PUBLICATIONS

- **Isotopic Fingerprint of Uranium Accumulation and Redox Cycling in Floodplains of the Upper Colorado River Basin** *ENVIRONMENTAL SCIENCE & TECHNOLOGY*
  Lefebvre, P., Noel, V., Lau, K. V., Jemison, N. E., Weaver, K. L., Williams, K. H., Bargar, J. R., Maher, K.
  2019; 53 (7): 3399–3409
- **Tracking Diverse Minerals, Hungry Organisms, and Dangerous Contaminants Using Reactive Transport Models** *ELEMENTS*
  Maher, K., Mayer, K.
  2019; 15 (2): 81–86
- **THE ART OF REACTIVE TRANSPORT MODEL BUILDING** *ELEMENTS*
  Maher, K., Mayer, K.
  2019; 15 (2): 117–18
- **Isotopic Fingerprint of Uranium Accumulation and Redox Cycling in Floodplains of the Upper Colorado River Basin.** *Environmental science & technology*
  Lefebvre, P., Noel, V., Lau, K. V., Jemison, N. E., Weaver, K. L., Williams, K. H., Bargar, J. R., Maher, K.

2019

- **The sensitivity of terrestrial #18O gradients to hydroclimate evolution** *Journal of Geophysical Research: Atmospheres*
  Kukla, T., Winnick, M. J., Maher, K., Ibarra, D. E., Chamberlain, C.
  2019; 124 (2): 563-582

- **Cr(VI) reduction by Fe(II) sorbed to silica surfaces.** *Chemosphere*
  Nelson, J., Joe-Wong, C., Maher, K.
  2019; 234: 98–107

- **Multimodal imaging and stochastic percolation simulation for improved quantification of effective porosity and surface area in vesicular basalt** *ADVANCES IN WATER RESOURCES*
  Zahasky, C., Thomas, D., Matter, J., Maher, K., Benson, S. M.
  2018; 121: 235–44

- **Shale Kerogen: Hydraulic Fracturing Fluid Interactions and Contaminant Release** *ENERGY & FUELS*
  Dustin, M. K., Bargar, J. R., Jew, A. D., Harrison, A. L., Joe-Wong, C., Thomas, D. L., Brown, G. E., Maher, K.
  2018; 32 (9): 8966–77

- **Nanopore, surface disorder, and sorption controls on reactivity of the silica-water interface**
  Nelson, J., Zalles, L., Maher, K.
  AMER CHEMICAL SOC.2018

- **Relationships between CO2, thermodynamic limits on silicate weathering, and the strength of the silicate weathering feedback** *EARTH AND PLANETARY SCIENCE LETTERS*
  Winnick, M. J., Maher, K.
  2018; 485: 111–20

- **Global perturbation of the marine calcium cycle during the Permian-Triassic transition** *Geological Society of America Bulletin*
  Silva-Tamayo, J., Payne, J. L., Wignall, P. B., Newton, R. J., Eisenhauer, A., DePaolo, D. J., Brown, S., Lau, K. V., Maher, K., Lehrmann, D. J., Altiner, D., Yu, M., Richoz, et al
  2018

- **E#ects of nano-con#nement on Zn(II) adsorption to nanoporous silica** *Geochimica et Cosmochimica Acta*
  Nelson, J., Bargar, J. R., Wasylenki, L., Brown Jr., G. E., Maher, K.
  2018; 240: 80-97

- **Growing new generations of critical zone scientists** *EARTH SURFACE PROCESSES AND LANDFORMS*
  Wymore, A. S., West, N. R., Maher, K., Sullivan, P. L., Harpold, A., Karwan, D., Marshall, J. A., Perdrial, J., Rempe, D. M., Ma, L.
  2017; 42 (14): 2498–2502

- **Kinetics and Products of Chromium(VI) Reduction by Iron(II/III)-Bearing Clay Minerals** *ENVIRONMENTAL SCIENCE & TECHNOLOGY*
  Joe-Wong, C., Brown, G. E., Maher, K.
  2017; 51 (17): 9817–25

- **Element release and reaction-induced porosity alteration during shale-hydraulic fracturing fluid interactions** *APPLIED GEOCHEMISTRY*
  Harrison, A. L., Jew, A. D., Dustin, M. K., Thomas, D. L., Joe-Wong, C. M., Bargar, J. R., Johnson, N., Brown, G. E., Maher, K.
  2017; 82: 47–62

- **Effects of nano-confinement and crystallinity on Zn isotope fractionation during adsorption onto silica surfaces**
  Nelson, J., Wasylenki, L., Bargar, J., Brown, G., Maher, K.
  AMER CHEMICAL SOC.2017

- **Molecular investigation of soil organic carbon composition, spatial variability, and depth distribution across a subalpine catchment**
  Hsu, H., Lawrence, C., Winnick, M., Druhan, J., Williams, K., Maher, K.
  AMER CHEMICAL SOC.2017

- **Factors affecting the sorption of uranyl at mineral-aqueous solution interfaces**
  Brown, G., Dublet, G., Noel, V., Fendorf, S., Bargar, J., Maher, K.
  AMER CHEMICAL SOC.2017

- **Snowmelt controls on concentration-discharge relationships and the balance of oxidative and acid-base weathering fluxes in an alpine catchment, East River, Colorado**
  Winnick, M., Carroll, R., Williams, K., Maxwell, R., Dong, W., Maher, K.
  AMER CHEMICAL SOC.2017
- **Insights into mineral-water interface dynamics through coupled stable isotope and spectroscopic investigations**
  Maher, K., Nelson, J.
  AMER CHEMICAL SOC.2017
- **Impact of Organics and Carbonates on the Oxidation and Precipitation of Iron during Hydraulic Fracturing of Shale** *ENERGY & FUELS*
  Jew, A. D., Dustin, M. K., Harrison, A. L., Joe-Wong, C. M., Thomas, D. L., Maher, K., Brown, G. E., Bargar, J. R.
  2017; 31 (4): 3643-3658
- **Snowmelt controls on concentration-discharge relationships and the balance of oxidative and acid-base weathering fluxes in an alpine catchment, East River, Colorado** *WATER RESOURCES RESEARCH*
  Winnick, M. J., Carroll, R. W., Williams, K. H., Maxwell, R. M., Dong, W., Maher, K.
  2017; 53 (3): 2507-2523
- **Expanding the role of reactive transport models in critical zone processes** *EARTH-SCIENCE REVIEWS*
  Li, L., Maher, K., Navarre-Sitchler, A., Druhan, J., Meile, C., Lawrence, C., Moore, J., Perdrial, J., Sullivan, P., Thompson, A., Jin, L., Bolton, E. W., Brantley, et al
  2017; 165: 280-301
- **The influence of mixing on stable isotope ratios in porous media: A revised Rayleigh model** *WATER RESOURCES RESEARCH*
  Druhan, J. L., Maher, K.
  2017; 53 (2): 1101-1124
- **An evaluation of paired delta O-18 and (U-234/U-238)(0) in opal as a tool for paleoclimate reconstruction in semi-arid environments** *CHEMICAL GEOLOGY*
  Oster, J. L., Kitajima, K., Valley, J. W., Rogers, B., Maher, K.
  2017; 449: 236-252
- **Uranium isotope evidence for temporary ocean oxygenation in the aftermath of the Sturtian Snowball Earth** *EARTH AND PLANETARY SCIENCE LETTERS*
  Lau, K. V., Macdonald, F. A., Maher, K., Payne, J. L.
  2017; 458: 282-292
- **Quantifying Cr(VI) Production and Export from Serpentine Soil of the California Coast Range** *ENVIRONMENTAL SCIENCE & TECHNOLOGY*
  McClain, C. N., Fendorf, S., Webb, S. M., Maher, K.
  2017; 51 (1): 141-149
- **Concentration–discharge patterns of weathering products from global rivers** *Acta Geochimica*
  Ibarra, D. E., Moon, S., Caves, J. K., Chamberlain, C., Maher, K.
  2017
- **The influence of diagenesis, mineralogy, and seawater changes on calcium isotope variations in Lower-Middle Triassic carbonate rocks** *Chemical Geology*
  Lau, K. V., Maher, K., Brown, S., Jost, A. B., Altiner, D., DePaolo, D. J., Eisenhauer, A., Kelley, B. M., Lehrmann, D. J., Paytan, A., Silva-Tamayo, J., Yu, M., Payne, et al
  2017; 471: 13-37
- **Effects of surface structural disorder and surface coverage on isotopic fractionation during Zn(II) adsorption onto quartz and amorphous silica surfaces** *Geochimica et Cosmochimica Acta*
  Nelson, J., Wasylenki, L., Bargar, J. R., Brown Jr., G. E., Maher, K.
  2017; 215: 354-376
- **Critical zone structure controls concentration-discharge relationships and solute generation in forested tropical montane watersheds** *Water Resources Research*
  Wymore, A. S., Brereton, R. L., Ibarra, D. E., Maher, K., McDowell, W. H.
  2017; 53 (7): 6279-6295
- **Surface ages and weathering rates from Be-10 (meteoric) and Be-10/Be-9: Insights from differential mass balance and reactive transport modeling** *CHEMICAL GEOLOGY*

Maher, K., von Blanckenburg, F.
2016; 446: 70-86

- **Geochemistry of CO2-rich waters in Iceland** *CHEMICAL GEOLOGY*
Thomas, D. L., Bird, D. K., Arnorsson, S., Maher, K.
2016; 444: 158-179

- **Clumped-isotope thermometry of magnesium carbonates in ultramafic rocks** *GEOCHIMICA ET COSMOCHIMICA ACTA*
del Real, P. G., Maher, K., Kluge, T., Bird, D. K., Brown, G. E., John, C. M.
2016; 193: 222-250

- **Aluminous gneiss derived by weathering of basaltic source rocks in the Neoarchean Storo Supracrustal Belt, southern West Greenland** *CHEMICAL GEOLOGY*
Szilas, K., Maher, K., Bird, D. K.
2016; 441: 63-80

- **Differential weathering of basaltic and granitic catchments from concentration-discharge relationships** *GEOCHIMICA ET COSMOCHIMICA ACTA*
Ibarra, D. E., Caves, J. K., Moon, S., Thomas, D. L., Hartmann, J., Chamberlain, C. P., Maher, K.
2016; 190: 265-293

- **Cenozoic carbon cycle imbalances and a variable weathering feedback** *EARTH AND PLANETARY SCIENCE LETTERS*
Caves, J. K., Jost, A. B., Lau, K. V., Maher, K.
2016; 450: 152-163

- **Chromium(VI) reduction by mixed iron(II/III)-bearing clay minerals**
Joe-Wong, C., Maher, K., Brown, G.
AMER CHEMICAL SOC.2016

- **Isotopic Evidence for Reductive Immobilization of Uranium Across a Roll-Front Mineral Deposit** *ENVIRONMENTAL SCIENCE & TECHNOLOGY*
Brown, S. T., Basu, A., Christensen, J. N., Reimus, P., Heikoop, J., Simmons, A., WoldeGabriel, G., Maher, K., Weaver, K., Clay, J., DePaolo, D. J.
2016; 50 (12): 6189-6198

- **Chromium fluxes and speciation in ultramafic catchments and global rivers** *CHEMICAL GEOLOGY*
McClain, C. N., Maher, K.
2016; 426: 135-157

- **Marine anoxia and delayed Earth system recovery after the end-Permian extinction.** *Proceedings of the National Academy of Sciences of the United States of America*
Lau, K. V., Maher, K., Altiner, D., Kelley, B. M., Kump, L. R., Lehrmann, D. J., Silva-Tamayo, J. C., Weaver, K. L., Yu, M., Payne, J. L.
2016; 113 (9): 2360-2365

- **A spatially resolved surface kinetic model for forsterite dissolution** *GEOCHIMICA ET COSMOCHIMICA ACTA*
Maher, K., Johnson, N. C., Jackson, A., Lammers, L. N., Torchinsky, A. B., Weaver, K. L., Bird, D. K., Brown, G. E.
2016; 174: 313-334

- **THE NEW EARTH AND ENVIRONMENTAL NANOSCIENCE AND TECHNOLOGYCENTERS SPONSORED BY NSF** *ELEMENTS*
Hochella, M., Mogk, D., Maher, K.
2016; 12 (1): 77–78

- **The imprint of climate and geology on the residence times of groundwater** *GEOPHYSICAL RESEARCH LETTERS*
Maxwell, R. M., Condon, L. E., Kollet, S. J., Maher, K., Haggerty, R., Forrester, M. M.
2016; 43 (2): 701-708

- **Physico-Chemical Heterogeneity of Organic-Rich Sediments in the Rifle Aquifer, CO: Impact on Uranium Biogeochemistry** *ENVIRONMENTAL SCIENCE & TECHNOLOGY*
Janot, N., Pacheco, J. S., Pham, D. Q., O'Brien, T. M., Hausladen, D., Noel, V., Lallier, F., Maher, K., Fendorf, S., Williams, K. H., Long, P. E., Bargar, J. R.
2016; 50 (1): 46-53

- **Multi-phase flow simulation of CO2 leakage through a fractured caprock in response to mitigation strategies** *INTERNATIONAL JOURNAL OF GREENHOUSE GAS CONTROL*
Vialle, S., Druhan, J. L., Maher, K.

2016; 44: 11-25

- **Physico-Chemical Heterogeneity of Organic-Rich Sediments in the Rifle Aquifer, CO: Impact on Uranium Biogeochemistry.** *Environmental science & technology*
  Janot, N., Lezama Pacheco, J. S., Pham, D. Q., O'Brien, T. M., Hausladen, D., Noël, V., Lallier, F., Maher, K., Fendorf, S., Williams, K. H., Long, P. E., Bargar, J. R.
  2016; 50 (1): 46–53
- **Stable runoff and weathering fluxes into the oceans over Quaternary climate cycles** *NATURE GEOSCIENCE*
  von Blanckenburg, F., Bouchez, J., Ibarra, D. E., Maher, K.
  2015; 8 (7): 538-U146
- **Isotopic and Geochemical Tracers for U(VI) Reduction and U Mobility at an in Situ Recovery U Mine.** *Environmental science & technology*
  Basu, A., Brown, S. T., Christensen, J. N., DePaolo, D. J., Reimus, P. W., Heikoop, J. M., WoldeGabriel, G., Simmons, A. M., House, B. M., Hartmann, M., Maher, K.
  2015; 49 (10): 5939-5947
- **Sedimentary reservoir oxidation during geologic CO2 sequestration** *GEOCHIMICA ET COSMOCHIMICA ACTA*
  Lammers, L. N., Brown, G. E., Bird, D. K., Thomas, R. B., Johnson, N. C., Rosenbauer, R. J., Maher, K.
  2015; 155: 30-46
- **Adsorption and precipitation of Zn and Ni in nanoporous silica**
  Nelson, J., Bargar, J., Brown, G., Maher, K.
  AMER CHEMICAL SOC.2015
- **Steering of westerly storms over western North America at the Last Glacial Maximum** *NATURE GEOSCIENCE*
  Oster, J. L., Ibarra, D. E., Winnick, M. J., Maher, K.
  2015; 8 (3): 201-205
- **Numerical simulation of reactive barrier emplacement to control CO2 migration** *Carbon Dioxide Capture for Storage in Deep Geologic Formations: Results from the CO2 Capture Project. Vol. 4*
  Druhan, J. J., Vialle, S., Beson, S., Maher, K.
  2015
- **Rise and fall of late Pleistocene pluvial lakes in response to reduced evaporation and precipitation: Evidence from Lake Surprise, California** *GEOLOGICAL SOCIETY OF AMERICA BULLETIN*
  Ibarra, D. E., Egger, A. E., Weaver, K. L., Harris, C. R., Maher, K.
  2014; 126 (11-12): 1387-1415
- **The impact of neogene grassland expansion and aridification on the isotopic composition of continental precipitation** *GLOBAL BIOGEOCHEMICAL CYCLES*
  Chamberlain, C. P., Winnick, M. J., Mix, H. T., Chamberlain, S. D., Maher, K.
  2014; 28 (9): 992-1004
- **Modeling the influence of organic acids on soil weathering** *GEOCHIMICA ET COSMOCHIMICA ACTA*
  Lawrence, C., Harden, J., Maher, K.
  2014; 139: 487-507
- **Uranium Incorporation into Amorphous Silica** *ENVIRONMENTAL SCIENCE & TECHNOLOGY*
  Massey, M. S., Lezama-Pacheco, J. S., Nelson, J. M., Fendor, S., Maher, K.
  2014; 48 (15): 8636-8644
- **Olivine dissolution and carbonation under conditions relevant for in situ carbon storage** *CHEMICAL GEOLOGY*
  Johnson, N. C., Thomas, B., Maher, K., Rosenbauer, R. J., Bird, D., Brown, G. E.
  2014; 373: 93-105
- **URANIUM ISOTOPES IN SOILS AS A PROXY FOR PAST INFILTRATION AND PRECIPITATION ACROSS THE WESTERN UNITED STATES** *AMERICAN JOURNAL OF SCIENCE*
  Maher, K., Ibarra, D. E., Oster, J. L., Miller, D. M., Redwine, J. L., Reheis, M. C., Harden, J. W.
  2014; 314 (4): 821-857

- **Hydrologic regulation of chemical weathering and the geologic carbon cycle.** *Science*
  Maher, K., CHAMBERLAIN, C. P.
  2014; 343 (6178): 1502-1504
- **Probing the mechanisms of pore size dependent geochemistry: Effects of meso-confinement on Zn sorption in mesoporous silica**
  Nelson, J. M., Bargar, J. R., Brown, G. E., Maher, K.
  AMER CHEMICAL SOC.2014
- **Uranium isotopes in soils as a proxy for past infiltration and precipitation across the western United States** *AMERICAN JOURNAL OF SCIENCE*
  Maher, K., Ibarra, D. E., Oster, J. L., Miller, D. M., Redwine, J. L., Reheis, M. C., Harden, J. C.
  2014; 314: 821-857
- **A reactive transport model for geochemical mitigation of CO2 leaking into a confined aquifer**
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