Stanford



Katharine (Kate) Maher

Professor of Earth System Science, Senior Fellow at the Woods Institute for the Environment and Professor, by courtesy, of Earth and Planetary Sciences

Curriculum Vitae available Online

Bio

BIO

Kate's research examines the carbon cycle through multiple lenses, from the history of atmospheric carbon dioxide and its impact on the evolution of life to strategies for sequestering carbon today. By combining computer models with field and laboratory measurements, her research links together hydrologic, chemical and biological processes to understand our unique planet. Her current research projects include soil carbon cycling, water quality and carbon dioxide removal. In 2015, Kate was awarded the James B. Macelwane Medal from the American Geophysical Union; in 2012 she was awarded the Allan Cox Medal for Mentoring of Undergraduate Research.

ACADEMIC APPOINTMENTS

- Professor, Earth System Science
- Senior Fellow, Stanford Woods Institute for the Environment
- Professor (By courtesy), Earth & Planetary Sciences
- Faculty Affiliate, Institute for Human-Centered Artificial Intelligence (HAI)
- 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

- Helmholtz Fellow, Helmholtz Association (2022)
- 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)

Research & Scholarship

CURRENT RESEARCH AND SCHOLARLY INTERESTS

Hydrology, reactive transport modeling and environmental geochemistry

Teaching

COURSES

2026-27

- Contaminant Hydrogeology and Reactive Transport: CEE 260C, ESS 221 (Win)
- Designing for the Planet: DESIGN 208 (Spr)
- Research Preparation for Undergraduates: SUSTAIN 100 (Spr)

2025-26

- Contaminant Hydrogeology and Reactive Transport: CEE 260C, ESS 221 (Win)
- Designing for the Planet: DESIGN 208 (Spr)
- Regenerative Coffee: Biochar, Climate, and Health, A Human and Planetary Health Action Lab: ESS 114, ESS 314 (Win)
- Research Preparation for Undergraduates: SUSTAIN 100 (Spr)

2024-25

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

2023-24

- Contaminant Hydrogeology and Reactive Transport: CEE 260C, ESS 221 (Win)
- Research Preparation for Undergraduates: SUSTAIN 100 (Spr)
- The Design of Data: DESIGN 255 (Spr)

STANFORD ADVISEES

Doctoral Dissertation Reader (AC)

Ahmed ElGamal, Robert Kennedy, Jack Lamb, Trent Robinett, Simone Salazar

Postdoctoral Faculty Sponsor

Langlang Li, Alexandra Ringsby, Brian Rogers

Doctoral Dissertation Advisor (AC)

Valerie Martin

Master's Program Advisor

Melina Oseguera-Arasmou

Doctoral (Program)

Valerie Martin

Publications

PUBLICATIONS

- **A thermodynamic framework for lime requirement and alkalinity production in acidic soils** *GEODERMA*
  Rogers, B., Maher, K.
  2026; 473
- **Critical zone processes limit alkalinity export from natural basaltic systems** *NATURE*
  Derry, L. A., Maher, K., Chadwick, O. A.
  2026

- **SurfaceProton ReservoirsConstrain Alkalinity Exportfrom Enhanced Weathering** *ENVIRONMENTAL SCIENCE & TECHNOLOGY*
  Maher, K., Rogers, B., Perzan, Z., Kukla, T.
  2026
- **Expert elicitation on agricultural enhanced weathering reveals carbon dioxide removal potential and uncertainties in loss pathways** *COMMUNICATIONS EARTH & ENVIRONMENT*
  Buma, B., Dietzen, C., Gordon, D. R., Maher, K., Neumann, R. B., Planavsky, N. J., Reershemius, T., Suhrhoff, T., Vicca, S., Waring, B. G., Almaraz, M., Calabrese, S., Derry, et al
  2026; 7 (1)
- **An uncertainty-aware framework for solid-phase measurement and verification of enhanced weathering** *FRONTIERS IN CLIMATE*
  Rogers, B., Maher, K.
  2026; 7
- **Evaluating solute dynamics and methane transformation in high-elevation Rocky Mountain fens using a transporter-transformer framework** *CHEMICAL GEOLOGY*
  Martin, V., Winnick, M., Saccardi, B., Bill, M., Conrad, M. E., Carroll, R. W. H., Maher, K.
  2025; 698
- **Floodplain nitrifiers harbor the genetic potential for utilizing a wide range of organic nitrogen compounds.** *mSystems*
  Rasmussen, A. N., Langenfeld, K., Tolar, B. B., Perzan, Z., Maher, K., Cardarelli, E. L., Bargar, J. R., Boye, K., Francis, C. A.
  2025: e0082925
- **Quantifying Groundwater Response and Uncertainty in Beaver-Influenced Mountainous Floodplains Using Machine Learning-Based Model Calibration** *WATER RESOURCES RESEARCH*
  Wang, L., Babey, T., Perzan, Z., Pierce, S., Briggs, M., Boye, K., Maher, K.
  2025; 61 (9)
- **Factors influencing surface water accumulation in beaver pond complexes across the Western United States** *COMMUNICATIONS EARTH & ENVIRONMENT*
  Wan, L., Fairfax, E., Maher, K.
  2025; 6 (1)
- **Hydrogeochemical modeling of hydrogen storage in depleted gas reservoirs: Insights from local and global sensitivity analysis** *APPLIED ENERGY*
  Huang, Z., Maher, K., Kovscek, A. R.
  2025; 391
- **Machine learning surrogates for efficient hydrologic modeling: Insights from stochastic simulations of managed aquifer recharge** *JOURNAL OF HYDROLOGY*
  Dai, T., Maher, K., Perzan, Z.
  2025; 652
- **Reactive transport simulation of organic and inorganic carbon cycling following carbon dioxide sorption onto soil amendments in drylands** *FRONTIERS IN CLIMATE*
  Helmrich, S., Ringsby, A. J., Maher, K.
  2025; 7
- **Do oversimplified durability metrics undervalue biochar carbon dioxide removal?** *ENVIRONMENTAL RESEARCH LETTERS*
  Ringsby, A. J., Maher, K.
  2025; 20 (3)
- **Mountainous Floodplain Connectivity in Response to Hydrological Transitions** *WATER RESOURCES RESEARCH*
  Babey, T., Perzan, Z., Pierce, S., Rogers, B., Wang, L., Carroll, R. W. H., Bargar, J. R., Boye, K., Maher, K.
  2024; 60 (7)
- **Sorption of Soil Carbon Dioxide by Biochar and Engineered Porous Carbons.** *Environmental science & technology*
  Ringsby, A. J., Ross, C. M., Maher, K.
  2024

- **Transport, dispersion, and degradation of nonpoint source contaminants during flood-managed aquifer recharge** *VADOSE ZONE JOURNAL*
  Perzan, Z., Maher, K.
  2024
- **Determination of trace elements in ibuprofen drug products using microwave-assisted acid digestion and inductively coupled plasma-mass spectrometry.** *Heliyon*
  Holmfred, E., Alrijjal, A., Chamberlain, C. P., Maher, K., Stürup, S.
  2024; 10 (1): e23566
- **Controls on flood managed aquifer recharge through a heterogeneous vadose zone: hydrologic modeling at a site characterized with surface geophysics** *HYDROLOGY AND EARTH SYSTEM SCIENCES*
  Perzan, Z., Osterman, G., Maher, K.
  2023; 27 (5): 969-990
- **The circular nutrient economy of terrestrial ecosystems and the consequences for rock weathering** *FRONTIERS IN ENVIRONMENTAL SCIENCE*
  Maher, K., von Blanckenburg, F.
  2023; 10
- **Rates of carbon and oxygen isotope exchange between calcite and fluid at chemical equilibrium** *GEOCHIMICA ET COSMOCHIMICA ACTA*
  Harrison, A. L., Schott, J., Oelkers, E. H., Maher, K., Mavromatis, V.
  2022; 335: 369-382
- **Simulation of anoxic lenses as exporters of reactivity in alluvial aquifer sediments** *GEOCHIMICA ET COSMOCHIMICA ACTA*
  Babey, T., Boye, K., Tolar, B., Engel, M., Noel, V., Perzan, Z., Kumar, N., Francis, C. A., Bargar, J. R., Maher, K.
  2022; 334: 119-134
- **WEATHERING INTENSITY AND LITHIUM ISOTOPES: A REACTIVE TRANSPORT PERSPECTIVE** *AMERICAN JOURNAL OF SCIENCE*
  Winnick, M. J., Druhan, J. L., Maher, K.
  2022; 322 (5): 647-682
- **Duration and Intensity of End-Permian Marine Anoxia** *GEOCHEMISTRY GEOPHYSICS GEOSYSTEMS*
  Pimentel-Galvan, M., Lau, K. V., Maher, K., Mukerji, T., Lehrmann, D. J., Altiner, D., Payne, J. L.
  2022; 23 (1)
- **Local and Global Sensitivity Analysis of a Reactive Transport Model Simulating Floodplain Redox Cycling** *WATER RESOURCES RESEARCH*
  Perzan, Z., Babey, T., Caers, J., Bargar, J. R., Maher, K.
  2021; 57 (12)
- **Concentration-Discharge Relationships of Dissolved Rhenium in Alpine Catchments Reveal Its Use as a Tracer of Oxidative Weathering** *WATER RESOURCES RESEARCH*
  Hilton, R. G., Turowski, J. M., Winnick, M., Dellinger, M., Schleppi, P., Williams, K. H., Lawrence, C. R., Maher, K., West, M., Hayton, A.
  2021; 57 (11)
- **Opportunities for large-scale CO2 disposal in coastal marine volcanic basins based on the geology of northeast Hawaii** *INTERNATIONAL JOURNAL OF GREENHOUSE GAS CONTROL*
  DePaolo, D. J., Thomas, D. M., Christensen, J. N., Zhang, S., Orr, F. M., Maher, K., Benson, S. M., Lautze, N., Xue, Z., Mito, S.
  2021; 110
- **Effective kinetics driven by dynamic concentration gradients under coupled transport and reaction** *GEOCHIMICA ET COSMOCHIMICA ACTA*
  Le Traon, C., Aquino, T., Bouchez, C., Maher, K., Le Borgne, T.
  2021; 306: 189-209
- **Chromium isotope fractionation during reduction of Chromium(VI) by Iron(II/III)-bearing clay minerals** *GEOCHIMICA ET COSMOCHIMICA ACTA*
  Joe-Wong, C., Weaver, K. L., Brown, S. T., Maher, K.
  2021; 292: 235–53

- **Global Sensitivity Analysis of a Reactive Transport Model for Mineral Scale Formation During Hydraulic Fracturing** *Environmental Engineering Science*
  Li, Q., Wang, L., Perzan, Z., Caers, J., Brown Jr., G. E., Bargar, J. R., Maher, K.
  2021
- **Thicknesses of Chemically Altered Zones in Shale Matrices Resulting from Interactions with Hydraulic Fracturing Fluid (vol 33, pg 6878, 2019)** *ENERGY & FUELS*
  Li, Q., Jew, A. D., Kohli, A., Maher, K., Brown, G. E., Bargar, J. R.
  2020; 34 (12): 16981
- **Uranium reduction and isotopic fractionation in reducing sediments: Insights from reactive transport modeling** *GEOCHIMICA ET COSMOCHIMICA ACTA*
  Lau, K., Lyons, T. W., Maher, K.
  2020; 287: 65–92
- **Soil Respiration Response to Rainfall Modulated by Plant Phenology in a Montane Meadow, East River, Colorado, USA** *JOURNAL OF GEOPHYSICAL RESEARCH-BIOGEOSCIENCES*
  Winnick, M. J., Lawrence, C. R., McCormick, M., Druhan, J. L., Maher, K.
  2020; 125 (10)
- **Integrating airborne remote sensing and field campaigns for ecology and Earth system science** *METHODS IN ECOLOGY AND EVOLUTION*
  Chadwick, K., Brodrick, P. G., Grant, K., Goulden, T., Henderson, A., Falco, N., Wainwright, H., Williams, K. H., Bill, M., Breckheimer, I., Brodie, E. L., Steltzer, H., Williams, et al
  2020
- **` Stability of Floodplain Subsurface Microbial Communities Through Seasonal Hydrological and Geochemical Cycles** *FRONTIERS IN EARTH SCIENCE*
  Tolar, B. B., Boye, K., Bobb, C., Maher, K., Bargar, J. R., Francis, C. A.
  2020; 8
- **Persistence of soil organic carbon caused by functional complexity** *NATURE GEOSCIENCE*
  Lehmann, J., Hansel, C. M., Kaiser, C., Kleber, M., Maher, K., Manzoni, S., Nunan, N., Reichstein, M., Schimel, J. P., Torn, M. S., Wieder, W. R., Koegel-Knabner, I.
  2020
- **Reactive Transport Modeling of Shale-Fluid Interactions after Imbibition of Fracturing Fluids** *ENERGY & FUELS*
  Li, Q., Jew, A. D., Brown, G. E., Bargar, J. R., Maher, K.
  2020; 34 (5): 5511–23
- **A model for kinetic isotope fractionation during redox reactions** *GEOCHIMICA ET COSMOCHIMICA ACTA*
  Joe-Wong, C., Maher, K.
  2020; 269: 661–77
- **Lithologic and redox controls on hexavalent chromium in vadose zone sediments of California's Central Valley** *GEOCHIMICA ET COSMOCHIMICA ACTA*
  McClain, C. N., Fendorf, S., Johnson, S. T., Menendez, A., Maher, K.
  2019; 265: 478–94
- **Sources of Blood Lead Exposure in Rural Bangladesh** *ENVIRONMENTAL SCIENCE & TECHNOLOGY*
  Forsyth, J. E., Weaver, K. L., Maher, K., Islam, M., Raqib, R., Rahman, M., Fendorf, S., Luby, S. P.
  2019; 53 (19): 11429–36
- **Thicknesses of Chemically Altered Zones in Shale Matrices Resulting from Interactions with Hydraulic Fracturing Fluid** *ENERGY & FUELS*
  Li, Q., Jew, A. D., Kohli, A., Maher, K., Brown, G. E., Bargar, J. R.
  2019; 33 (8): 6878–89
- **Modeling Transient Soil Moisture Limitations on Microbial Carbon Respiration** *JOURNAL OF GEOPHYSICAL RESEARCH-BIOGEOSCIENCES*
  Liu, Y., Lawrence, C. R., Winnick, M. J., Hsu, H., Maher, K., Druhan, J. L.
  2019; 124 (7): 2222–47

- **Cr(VI) reduction by Fe(II) sorbed to silica surfaces** *Chemosphere*
  Nelson, J., Joe-Wong, C., Maher, K.
  2019; 234: 98-107
- **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
- **Alteration depths from the shale surface into the matrix**
  Li, Q., Jew, A., Kohli, A., Brown, G., Maher, K., Bargar, J.
  AMER CHEMICAL SOC.2019
- **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 δ18O 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
- **Ten-million years of activity within the Eastern California Shear Zone from U–Pb dating of fault-zone opal** *Earth and Planetary Science Letters*
  Nuriel, P., Miller, D. M., Schmitt, K. M., Coble, M. A., Maher, K.
  2019; 521: 37-45
- **Cr(VI) reduction by Fe(II) sorbed to silica surfaces.** *Chemosphere*
  Nelson, J. n., Joe-Wong, C. n., Maher, K. n.
  2019; 234: 98–107
- **Ten-million years of activity within the Eastern California Shear Zone from U–Pb dating of fault-zone opal** *Earth and Planetary Science Letters*
  Nuriel, P., Miller, D. M., Schmitt, K. M., Coble, M. A., Maher, K.
  2019; 521: 37-45
- **Cr(VI) reduction by Fe(II) sorbed to silica surfaces.** *Chemosphere*
  Nelson, J. n., Joe-Wong, C. n., Maher, K. n.
  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

- **Quantifying Uncertainty in Subsurface Systems** *QUANTIFYING UNCERTAINTY IN SUBSURFACE SYSTEMS*
  Scheidt, C., Li, L., Caers, J.
  2018; 236: 1-279

- **The Earth Resources Challenge** *QUANTIFYING UNCERTAINTY IN SUBSURFACE SYSTEMS*
  Vilhelmsen, T., Maher, K., Da Silva, C., Hermans, T., Grujic, O., Park, J., Yang, G., Scheidt, C., Li, L., Caers, J.
  2018; 236: 1–27

- **Quantifying Uncertainty in Subsurface Systems** *QUANTIFYING UNCERTAINTY IN SUBSURFACE SYSTEMS*
  Vilhelmsen, T., Maher, K., Da Silva, C., Hermans, T., Grujic, O., Park, J., Yang, G., Scheidt, C., Li, L., Caers, J.
  2018; 236: 217–62

- **E#ects of nano-confinement 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

- **Impact of Organics and Carbonates on the Oxidation and Precipitation of Iron during Hydraulic Fracturing of Shale (vol 31, pg 3643, 2017)** *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 (7): 7700

- **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

- **Spectroscopic investigation of the mechanism and kinetics of the sulfidation of FeIII-(oxyhydr)oxide nanoparticles**
  Kumar, N., Noel, V., Pacheco, J., Maher, K., Brown, G.
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