



Claresta Joe-Wong

Ph.D. Student in Geological and Environmental Sciences

 Curriculum Vitae available Online

Bio

BIO

I am broadly interested in understanding natural systems on a molecular level, using both stable metal isotope fractionation and spectroscopy. I entered the department of Geological Sciences at Stanford University as a graduate student in fall 2014. I am currently working with Professors Kate Maher and Gordon Brown on developing a thermodynamic framework for kinetic stable isotope fractionation during redox processes and applying this framework to the reduction of chromium(VI), a common environmental pollutant, by aqueous iron(II) complexes and iron(II)-bearing clay minerals.

As an undergrad, I majored in chemistry at Princeton University and worked in the group of Geosciences Professor Satish Myneni, who sparked my interest in geochemistry. My research projects in the Myneni group included developing a method to quantify thiols in natural systems and characterizing halogenation of natural organic matter.

HONORS AND AWARDS

- Stanford Graduate Fellowship, Stanford University (2014-2019)
- National Defense Science and Engineering Graduate (NDSEG) Fellowship, Department of Defense (2014-2017)
- Phi Beta Kappa Member, Phi Beta Kappa Society (2014)
- Robert Thornton McCay Prize for Physical Chemistry, Princeton University (2014)
- Sigma Xi Research Society Member, Sigma Xi Research Society (2014)
- Shapiro Prize for Academic Excellence, Princeton University (2011-2012)

EDUCATION AND CERTIFICATIONS

- A.B., Princeton University, Chemistry, summa cum laude (2014)

LINKS

- Maher Group: <https://pangea.stanford.edu/researchgroups/eigg/>
- NDSEG Fellowship: <http://ndseg.asee.org>
- Stanford Graduate Fellowship: <https://vpge.stanford.edu/fellowships-funding/sgf>
- Myneni Group (Princeton): <http://scholar.princeton.edu/myneni>

Research & Scholarship

LAB AFFILIATIONS

- Kate Maher, Environmental Isotope Geochemistry Laboratory (8/18/2014)

- Gordon Brown (8/18/2014)

Publications

PUBLICATIONS

- **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
- **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** *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
- **Estimation of Reactive Thiol Concentrations in Dissolved Organic Matter and Bacterial Cell Membranes in Aquatic Systems** *ENVIRONMENTAL SCIENCE & TECHNOLOGY*
Joe-Wong, C., Shoenfelt, E., Hauser, E. J., Crompton, N., Myneni, S. C.
2012; 46 (18): 9854-9861

PRESENTATIONS

- Sea Level Rise Produces Abundant Organobromines in Affected Coastal Environments - Goldschmidt Conference (6/9/2014)