



Daniel Enrique Ibarra

Postdoctoral Research Fellow, Geological Sciences

 Curriculum Vitae available Online

Bio

BIO

I am a geochemist and climate scientist who works on climate impacts on the water cycle, with a background in environmental science, engineering, and Earth science. I draw on my interdisciplinary training to study watershed responses to changes in hydroclimate, using both field and laboratory measurements as well as modeling approaches. I defended my Ph.D. in Earth System Science at Stanford University in 2018. I previously completed a M.S. in Geological & Environmental Sciences in 2014, and B.S. degrees in Civil & Environmental Engineering (Atmosphere/Energy) and Geological & Environmental Sciences in 2012.

HONORS AND AWARDS

- Graduate Student Award for Scholarly and Research Achievement, Earth System Science, Stanford University (2018)
- Editor's Citation for Excellence in Refereeing, Geophysical Research Letters, American Geophysical Union (2017)
- Centennial Teaching Assistant Award, Stanford University (2016)
- NSF USSP, Urbino Summer School in Paleoclimatology NSF Scholarship (2014)
- EDGE-STEM Fellowship, Stanford University (2013)
- On To the Future Diversity Program, Geological Society of America (2013)
- Hofer Fund Partnership Award for Excellence in Mentoring Undergraduate Writing, Stanford University (2013)
- Firestone Medal for Excellence in Undergraduate Research, Stanford University (2012)
- Outstanding Senior in Geological and Environmental Sciences, Stanford University (2012)
- Dean's Award for Outstanding Academic Achievement, Stanford University (2012)
- David E. Lumley Young Scientist Scholarship for Energy and Environmental Science, American Geophysical Union (2011)
- Barry M. Goldwater Scholarship Honorable Mention, Barry Goldwater Scholarship and Excellence in Education Foundation (2011)

BOARDS, ADVISORY COMMITTEES, PROFESSIONAL ORGANIZATIONS

- Postdoc Representative to the Committee on Libraries (C-LIB), Stanford Faculty Senate, Stanford University (2018 - present)
- Community Engagement Board, California Alliance for Graduate Education & The Professoriate (NSF AGE Program) (2018 - present)
- Advisory Council Member, EarthArXiv (2017 - present)
- Graduate Student Advisor, Stanford Earth Summer Undergraduate Research (SESUR) Program (2015 - 2015)
- Graduate Student Advisor, High School Intern Program, School of Earth Sciences (2012 - 2012)
- Undergraduate Peer Advisor, Geological and Environmental Sciences Dept. (2011 - 2013)
- Co-Editor-in-Chief (2012-13), Natural Sciences Editor (2011-12), Engineering Editor (2010-11), Stanford Undergraduate Research Journal (2010 - 2013)
- Member, Geological Society of America (2013 - present)

- Member, Mineralogical Society of America (2011 - present)
- Member, Geochemical Society (2011 - present)
- Member and Lumley Young Scientist, American Geophysical Union (2010 - present)

PROFESSIONAL EDUCATION

- Doctor of Philosophy, Stanford University , ESS-PHD (2018)
- Master of Science, Stanford University , GES-MS (2014)
- Bachelor of Science, Stanford University , ENGR-BS (2012)
- Bachelor of Science, Stanford University , GES-BSH (2012)

LINKS

- Research Website: <https://sites.google.com/site/danibarra650/>
- LinkedIn: <https://www.linkedin.com/in/daniel-ibarra-2496b327>
- Twitter: https://twitter.com/Dan_E_Ibarra
- ResearchGate: https://www.researchgate.net/profile/Daniel_Ibarra3
- Google Scholar: <https://scholar.google.com/citations?user=oi6hP9IAAAAJ&hl=en>

Research & Scholarship

CURRENT RESEARCH AND SCHOLARLY INTERESTS

I am a geochemist and climate scientist working on the water and carbon cycles in modern environments and over Earth history. I have academic training in environmental science, engineering, and Earth science. I draw on my interdisciplinary training to study past and present watershed responses to changes in climate using field observations, laboratory measurements and modeling approaches. I am currently a Postdoctoral Scholar in Geological Sciences at Stanford University. I received my Ph.D. in Earth System Science and M.S. in Geological & Environmental Sciences from Stanford University. My undergraduate training included B.S. degrees Civil & Environmental Engineering (Atmosphere/Energy) and Geological & Environmental Sciences from Stanford University.

My research includes:

- Investigating the influence of plants, geology and climate on nutrient and chemical fluxes in freshwater systems, including quantifying patterns of covariation between solutes and hydrology.
- Developing new modeling frameworks for investigating the response of terminal watersheds and lake systems to climatic forcings.
- Documenting past changes in climate using terrestrial geologic records as indicators of hydroclimate change to test the robustness of climate model simulations used for future projections.
- Developing new analytical geochemical techniques to infer how the atmosphere, water cycle and land surface reflect ongoing and past changes in climate.

Research Assistantship

ICP-MS/TIMS Laboratory, Graduate Student Research Assistant (Spring and Summer 2012)

Teaching Experience

EES 307 - Research Proposal Development and Delivery (Spring 2015 and 2017, and Winter 2018)

ESS/GS/EarthSys 12SC/101 - Environmental and Geological Field Studies in the Rocky Mountains (Sept 2011 - 2017; Head TA 2012, 2014-16)

ESS/EarthSys 132/232 - Evolution of Earth Systems (Winter 2017)
ESS 146A/246A - Atmosphere, Ocean, and Climate Dynamics: The Atmospheric Circulation (Winter 2016)
ESS 212 - Measurements in Earth Systems (Winter 2015 & 2016)
GES 150/Geophys 199 - Senior Seminar: Issues in Earth Sciences (Fall 2012 & 2013)
GES 55Q - The California Gold Rush: Geologic Background and Environmental Impact (Winter 2013)
CEE 173A/207A - Energy Resources (Grader, Fall 2011)

Short Courses and Additional Training

AAUS Scientific Diving Certification (2016)
Earthscope Institute: Geochronology & Earth Sciences (2014)
Urbino Summer School in Paleoclimatology (2014)

Peer-Review Journal Reviewer for:

Geochimica et Cosmochimica Acta; Geophysical Research Letters; Water Resources Research; Chemical Geology; Earth and Planetary Science Letters; Journal of Quaternary Science; Journal of Geophysical Research: Atmospheres; Environmental Science and Pollution Research; Geology; Comptes Rendus Geoscience; Quaternary Science Reviews; Hydrological Processes; Earth Surface Dynamics; Environmental Earth Sciences; Journal of Geophysical Research: Biogeosciences; Palaeogeography, Palaeoclimatology, Palaeoecology; Geosciences; Paleooceanography and Paleoclimatology; Frontiers in Earth Science - Biogeosciences; Open Quaternary.

LAB AFFILIATIONS

- Page Chamberlain, Terrestrial Paleoclimate (8/1/2013 - - 6/17/2018)
- Katherine Maher, Environmental Geochemistry (5/1/2010 - - 1/10/2014)

Publications

PUBLICATIONS

- **Warm and cold wet states in the western United States during the Pliocene-Pleistocene** *Geology*
Ibarra, D. E., Oster, J. L., Winnick, M. J., Caves Rugenstein, J. K., Byrne, M. P., Chamberlain, C.
2018; 46 (4): 355–358
- **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
- **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
- **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
- **Spatial Patterns and Driving Mechanisms of Mid-Holocene Hydroclimate in Western North America** *Journal of Quaternary Science*
Hermann, N. W., Oster, J. L., Ibarra, D. E.
2018: 15
- **The influence of pluvial lake cycles on earthquake recurrence in the northwestern Basin and Range, USA** *Geological Society of America Special Paper Series - Accepted*
Egger, A. E., Ibarra, D. E., Weldon, R., Landgridge, R. M., Marion, B., Hall, J.

2018

- **Modeling the consequences of land plant evolution on silicate weathering** *American Journal of Science - Accepted*
Ibarra, D. E., Caves Rügenstein, J. K., Bachan, A., Baresch, A., Lau, K. V., Thomas, D. L., Lee, J., Boyce, C., Chamberlain, C.
2018
- **Evaluating Late Cretaceous OAEs and the influence of marine incursions on organic carbon burial in an expansive East Asian paleo-lake** *Earth and Planetary Science Letters*
Jones, M. M., Ibarra, D. E., Gao, Y., Sageman, B. B., Selby, D., Chamberlain, C., Graham, S. A.
2018; 484: 41-52
- **Late Miocene Uplift of the Tian Shan and Altai and Reorganization of Central Asia Climate** *GSA Today*
Caves, J. K., Bayshashov, B. U., Zhamangara, A., Ritch, A. J., Ibarra, D. E., Sjostrom, D. J., Mix, H. T., Winnick, M. J., Chamberlain, C.
2017; 27 (2)
- **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
- **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 Neogene de-greening of Central Asia** *GEOLOGY*
Caves, J. K., Moragne, D. Y., Ibarra, D. E., Bayshashov, B. U., Gao, Y., Jones, M. M., Zhamangara, A., Arzhannikova, A. V., Arzhannikov, S. G., Chamberlain, C. P.
2016; 44 (11): 887-890
- **A hot and high Eocene Sierra Nevada** *GEOLOGICAL SOCIETY OF AMERICA BULLETIN*
Mix, H. T., Ibarra, D. E., Mulch, A., Graham, S. A., Chamberlain, C. P.
2016; 128 (3-4): 531-542
- **Mid-latitude terrestrial climate of East Asia linked to global climate in the Late Cretaceous: REPLY** *GEOLOGY*
Gao, Y., Ibarra, D. E., Caves, J. K., Wang, C., Chamberlain, C. P., Graham, S. A., Wu, H.
2016; 44 (2): e379
- **Constraining basin thermal history and petroleum generation using paleoclimate data in the Piceance Basin, Colorado** *Basin Research*
Tong, Y., Ibarra, D. E., Caves, J. K., Mukerji, T., Graham, S. A.
2016
- **DIAGENETIC AND PALEOENVIRONMENTAL CONTROLS ON LATE CRETACEOUS CLAY MINERALS IN THE SONGLIAO BASIN, NORTHEAST CHINA** *CLAYS AND CLAY MINERALS*
Gao, Y., Wang, C., Liu, Z., Du, X., Ibarra, D. E.
2015; 63 (6): 469-484
- **QUANTIFYING CLOSED-BASIN LAKE TEMPERATURE AND HYDROLOGY BY INVERSION OF OXYGEN ISOTOPE AND TRACE ELEMENT PALEO CLIMATE RECORDS** *AMERICAN JOURNAL OF SCIENCE*
Ibarra, D. E., Chamberlain, C. P.
2015; 315 (9): 781-808
- **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
- **Mid-latitude terrestrial climate of East Asia linked to global climate in the Late Cretaceous** *GEOLOGY*
Gao, Y., Ibarra, D. E., Wang, C., Caves, J. K., Chamberlain, C. P., Graham, S. A., Wu, H.
2015; 43 (4): 287-290
- **The late Pleistocene pluvial history of Surprise Valley, CA** *PACLIM: Proceedings of the 26th Pacific Climate Workshop, 2013*
Ibarra, D. E., Egger, A. E., Maher, K.

2015: 137

● **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

● **Uranium isotopic variations in modern soils and dated soil minerals: Calibrating a potential paleo-rainfall proxy** *PACLIM: Proceedings of the 25th Pacific Climate Workshop, 2011*

Oster, J. L., Maher, K., Ibarra, D. E.

2013: 239

● **Influence of eolian deposition and rainfall amounts on the U-isotopic composition of soil water and soil minerals** *GEOCHIMICA ET COSMOCHIMICA ACTA*

Oster, J. L., Ibarra, D. E., Harris, C. R., Maher, K.

2012; 88: 146-166

PRESENTATIONS

- QUANTIFYING CONTINENTAL WEATHERING INTENSITY ACROSS OCEANIC ANOXIC EVENT 2 - Geochemistry Seminar, UCLA (5/2018)
- Pluvial lakes in the western United States: Reconstructing El Niño, storm tracks, and the water cycle - Department of Earth and Climate Sciences, San Francisco State University, San Francisco, California (2/2018)
- Constraining past mid-latitude circulation changes using paleoclimate models and proxies - Atmosphere, Ocean and Climate Dynamics Talk, Stanford University (2/2018)
- Climatological drivers of Plio-Pleistocene pluvial lakes in western North America - UC Berkeley, Isotope Geochemistry Seminar (2/18/2017)
- Climatological Drivers of Plio-Pleistocene Pluvial Lakes in Western North America - UCLA, Tectonics & Seismology Seminar (2/1/2017)
- Climatological Drivers of Plio-Pleistocene Hydroclimate in Western North America - German Research Center for Geosciences GFZ (7/2016)
- Plio-Pleistocene Pluvial Lakes of Western North America: Evaporation, Precipitation or El Niño? - San Jose State University (11/2015)