

ROBERT A. FOFRICH

PhD Candidate

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<https://www.uci.edu/~sustsys/fofrich.html>

Department of Earth System Science
University of California,
Irvine, CA 92697-3100

RESEARCH INTERESTS

Natural and human system interaction analysis, in particular: land use change, energy, emissions, and climate policy; coupled climate and agricultural system feedbacks; socioeconomic drivers of environmental problems; ecosystem vulnerabilities, loss of biodiversity, and species extinction; Effectiveness of environmental policies towards preserving ecosystems function and industry regulation; and quantifying natural and societal co-benefits from ecosystem services.

EDUCATION

University of California, Irvine

PhD, Earth System Science

Dissertation: *Constraints to climate change mitigation and adaptation.*

Irvine, CA
Expected 2021

University of California, Irvine

MS, Earth System Science

BS, Earth System Science

Irvine, CA
2019
2016

West Los Angeles College

AA, Liberal Arts & Science: Math, Sciences & Computer Science, *magna cum laude*

Culver City, CA
2014

RESEARCH EXPERIENCE

Dept. Earth System Science; University of California, Irvine

Graduate Researcher; Advisor: Steven J. Davis

Ridge to Reef; National Science Foundation Research Traineeship (NRT) trainee

Research focus: Climate change mitigation and adaptation, energy systems, agricultural systems.

Irvine, CA
2016-Present
2017-Present

NASA Jet Propulsion Laboratory

Undergraduate Researcher; Advisor: Mika Tosca

Research focus: Global wildfire and subsequent smoke plume injections heights.

Pasadena, CA
2015-2016

Center for Environmental Biology; University of California, Irvine

Undergraduate Researcher; Advisor: Sarah Kimball

Research focus: Conservation, ecological restoration, and climate impacts.

Irvine, CA
2014-2015

PEER-REVIEWED PUBLICATIONS

R Fofrich, L Sloat, N Mueller, N Diffenbaugh, and SJ Davis. Agricultural migration to avoid future climate change. (in prep)

R Fofrich *et al.*, Early retirement of power plants in climate mitigation scenarios. *Environmental Research Letters* **15**, 094064 (2020)

C Shearer, D Tong, **R Fofrich**, SJ Davis, Committed Emissions of the U.S. Power Sector, 2000–2018. *AGU Advances* **1**, e2020AV000162 (2020).

C Shearer, **R Fofrich**, SJ Davis, Future CO₂ emissions and electricity generation from proposed coal-fired power plants in India. *Earth's Future* **5**, 408-416 (2017).

CONFERENCE PRESENTATIONS

R Fofrich, L Sloat, N Mueller, and SJ Davis. Agricultural migration to avoid future climate change. American Geophysical Union. Oral presentation delivered at the AGU Fall Meeting, Virtual meeting, December 2020.

R Fofrich, D Tong, K. Calvin, H Sytze de Boer, J Emmerling, O Fricko, S Fujimori, G Luderer, J Rogelj and SJ Davis. Early retirement of power plants in climate mitigation scenarios. American Geophysical Union. Poster presentation delivered at the AGU Fall Meeting, San Francisco, CA., December 2019.

R Fofrich, D Tong, J Rogelj, SJ Davis. Infrastructural inertia in energy-emission scenarios. American Geophysical Union. Poster presentation delivered at the AGU Fall Meeting, Washington, D.C., December 2018.

R Fofrich, C Shearer, D Tong, and SJ Davis. Future CO₂ emissions and electricity generation from coal-fired power plants in India. American Geophysical Union. Poster presentation delivered at the AGU Fall Meeting, New Orleans, LA, December 2017.

SYMPOSIUM PRESENTATIONS

R Fofrich. Decarbonizing contemporary society, UCI Ridge to Reef & Newport Bay Conservancy, Oral presentation delivered at Climate Solutions Conference, Costa Mesa, CA, February 2020

R Fofrich, et al. Early retirement of power plants in climate mitigation scenarios. University of California Office of the President - Global Climate Leadership Council, Global Climate Leadership Council Annual Meeting, Irvine, CA, May 2019

R Fofrich. Ecosystem climate migrations in the Anthropocene. Decolonizing Ecology and Indigenous Land Co-Management, Irvine, CA, May 2019

R Fofrich. What community college can do for you. Creative Edge – West Los Angeles College, Culver City, CA, May 2018

R Fofrich, et al. Infrastructural inertia in energy-emission scenarios. Carnegie Institution for Science –Stanford Department of Global Ecology. Energy symposium, Stanford, CA, July 2018

R Fofrich, et al. Infrastructural inertia in energy-emission scenarios. UCI Dept. Earth System Science and Dept. of Ecology & Evolutionary Biology. Environmental research symposium, Irvine, CA, December 2018

R Fofrich, M Laffin, S Bell, M Tosca. A global database of smoke injection heights from landscape fires: an analysis of 2009-2010, Jet Propulsion Laboratory Summer Undergraduate Research Fellowship Symposium, Oral presentation delivered at the NASA-JPL SURF Symposium, Pasadena, CA, September 2015

TEACHING EXPERIENCE

University of California, Irvine

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| Teaching Assistant, Earth System Science, Intro to cryosphere | Irvine, CA Spring 2020 |
| Teaching Assistant, Earth System Science, Sustainable Energy Systems | Winter 2020 |
| Teaching Assistant, Earth System Science, Sustainable Food and Water Systems | Fall 2019 |
| Teaching Assistant, Earth System Science, Fundamentals of Geographic Information Systems | Fall 2017 |
| Teaching Assistant, Earth System Science, Introduction to Earth System Science | Summer 2016 |

American Red Cross of Greater Los Angeles
Health & Safety Instructor

Los Angeles, CA
2010 - 2012

DIVERSITY, INCLUSION, & OUTREACH

Department of Earth System Science

Mentor (3 PhD students)
Invited speaker series search committee member
Graduate Student Representative

Irvine, CA
2018-current
2019-current
2019-2020

Ridge to Reef – NSF (NRT)

Mentor (2 PhD students)

Irvine, CA
2017-current

Climate solutions annual conference

Science educator, community engagement

Irvine, CA
2017-2019

The Orange County Chapter of the Society for Conservation Biology

Conservation Chair

Irvine, CA
2019-2020

American Chemical Society (West Los Angeles Chapter)

Cofounder and vice president

Culver City, CA
2012-2014

FELLOWSHIPS, GRANTS, AND AWARDS

Rose Hills Foundation Science & Engineering Fellowship

University of California, Irvine

2020

Outstanding Contributions to the Department Award

Department of Earth System Science, University of California, Irvine

2020

Ridge to Reef Fellowship

National Science Foundation Research Traineeship, University of California, Irvine

2017 - 2018

Long Institute Graduate Student Grant

Long US-China Institute, University of California, Irvine

2017

Reward Opportunity Advancing Distinguished Students (ROADS) Scholarship

University of California, Irvine

2016

Dr. Juan Francisco Lara Endowed Scholarship

University of California, Irvine

2015

Ecological Preserve Restoration Grant

Green Initiative Fund, University of California, Irvine

2015

Jet Propulsion Laboratory Undergraduate Scholar

NASA Jet Propulsion Laboratory, Pasadena

2014

AFT 1521 Foundation Scholarship

Los Angeles Community College Guild, Los Angeles

2014

Irving R. Tannenbaum Memorial Award,

West Los Angeles College, Culver City

2014

Morris J. Heldman Chemistry Award,

West Los Angeles College, Culver City

2013

Academic Senate Scholarship,

West Los Angeles College, Culver City

2013

David Rodriguez Memorial Scholarship

West Los Angeles College, Culver City

2013

Riding the Roadmap to Transfer

2012 - 2014

National Science Foundation - West Los Angeles College, Culver City

Dean's honor list

2012 - 2014

West Los Angeles College, Culver City

COMPUTER SKILLS

MATLAB, Python, GIS, MS Office, Adobe Creative Cloud (Illustrator, Lightroom, and Photoshop)

PROFESSIONAL ASSOCIATIONS

American Geophysical Union (AGU)

European Geosciences Union (EGU)

Society for Conservation Biology

American Association for the Advancement of Science (AAAS)

Society for the Advancement of Chicanos/Hispanics and Native Americans in Science (SACNAS)

HONOR ASSOCIATIONS

Society for Leadership and Success, University of California, Irvine

Phi Beta Kappa, University of California, Irvine

Phi Theta Kappa, West Los Angeles College, Culver City

REFERENCES

Steven J. Davis, Ph.D.

Professor

Department of Earth System
Science & Department of Civil and
Environmental Engineering
University of California, Irvine
sjdavis@uci.edu

Nathan D. Mueller, Ph.D.

Associate Professor

Department of Ecosystem Science
and Sustainability &
the Department of Soil and Crop
Sciences
nathan.mueller@rams.colostate.edu

James Randerson, Ph.D.

Professor

Department of Earth System
Science
jranders@uci.edu

