

CURRICULUM VITÆ

Eric Daniel Fournier

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Contact

Mail UCLA Institute of the Environment and Sustainability
619 Charles E. Young Drive East
LaKretz Hall, Suite 300, Los Angeles, CA 90095, USA

Email efournier@ioes.ucla.edu
efournier@ucla.edu

Web <https://www.ioes.ucla.edu/person/eric-fournier/>

GitHub <https://www.github.com/ericdfournier>

Phone +1 310 825 7653

Education

Doctor of Philosophy 2010-2015

Bren School of Environmental Science & Management, UCSB

Dissertation Title: *The Life-Cycle Energy-Water Usage Efficiency of the Reuse of Treated Wastewater for Artificial Groundwater Recharge*

Dissertation Committee: Dr. Arturo A. Keller (Chair), Dr. James Frew, Dr. Roland Geyer

Master of Arts 2013-2015

Geography Department, UCSB

Masters Examination Topics: Multivariate Geostatistical Analysis, Spatial Data Structures, Geographic Information Science

Masters Examination Committee: Dr. James Frew (Chair), Dr. Keith Clarke, Dr. Phaedon Kyriakidis

Master of Environmental Science 2008-2010

School of Forestry & Environmental Science, Yale University

Masters Thesis Title: *LEED® for New Laboratory Development: Using Green Chemistry to Overcome Hurdles to Sustainable Laboratory Design*

Masters Thesis Committee: Dr. Paul T. Anastas, Dr. Julie B. Zimmerman

Field Research Training Program in Coastal Ecology 2007-2008

Zanzibar, Tanzania Program Office, School for International Training

Independent Study Project Title: *Biomass Combustion and Acute Respiratory Illness in Kiwengwa, Unguja, Zanzibar*

Independent Study Program Advisor: Mr. Benjamin Miller

Bachelor of Science, Magna Cum Laude, Phi Beta Kappa 2004-2008

Environmental Science Department, Bucknell University

Honors Thesis Title: *A Comprehensive Assessment of Bucknell University's Energy Profile with Performance Simulations for Campus Facilities*

Honors Thesis Committee: Dr. Molly McGuire (Chair), Dr. Peter Stryker, Mr. James Knight

*Interests***Applications**

Landscape Ecology and Planning, Global Biogeochemical Cycling, Sustainable Watershed Management, Life Cycle Assessment Modeling, Energy Systems Analysis and Planning, Web Mapping and Publishing

Methods

Geographic Information Systems, Distributed and High Performance Scientific Computing, Pattern Recognition and Machine Learning, Geostatistical Modeling and Simulation, Numerical Analysis and Combinatoric Optimization, Genetic and Evolutionary Algorithms

*Teaching***ESM 263 - Geographic Information Systems**

2014-2015

Bren School of Environmental Science & Management, UCSB

Responsibilities: Teaching Assistant to Professor James Frew
 Course Description: Advanced introduction to GIS theory and technology, emphasizing spatial analysis and cartographic presentation. Typical algorithms and data structures. Role of GIS in environmental information management. Integration of GIS with other analytical tools.

ESM 215 - Landscape Ecology

2012-2013

Bren School of Environmental Science & Management, UCSB

Responsibilities: Teaching Assistant to Lecturer Stephanie Moret
 Course Description: This course explores emergent patterns in landscape structure (physical, biological, and cultural) and linkages to ecological processes. The role of ecosystem pattern, for both landscapes and seascapes, will be explored via mass and energy transfers, disturbance regimes, species' persistence, applications of remote sensing, and GIS for landscape characterization and modeling.

ESM 202 - Environmental Biogeochemistry

2010-2012

Bren School of Environmental Science & Management, UCSB

Responsibilities: Teaching Assistant to Professors Arturo A. Keller, Patricia Holden, & John Melack
 Course Description: This course investigates biogeochemical processes as applied to the Earth's atmosphere, oceans, land, and inland waters, and applications to environmental issues such as eutrophication, toxic pollution, carbon sequestration, and acidification.

F&ES 756a - Modeling Geographic Objects

2009-2010

School of Forestry & Environmental Studies, Yale University

Responsibilities: Teaching Assistant to Professor Charles Dana Tomlin
 Course Description: This course introduces the nature and use of drawing-based (vector) geographic information systems (GIS) for the preparation, interpretation, and presentation of digital cartographic data.

Research

Research Director 2018-Present

California Center for Sustainable Communities, UCLA

Responsibilities: Lead the development of new research grant proposals and mentor the center's research staff. Coordinate the technical approach to various research projects including the development and expansion of the UCLA Energy Atlas, the UCLA Solar Prioritization Tool, etc.

Post-Doctoral Researcher 2016-2018

Institute for the Environment & Sustainability, UCLA

Responsibilities: Functioned as the lead data scientist on a two year California Energy Commission (CEC) grant funded planning project to develop a net zero electricity (NZE) advanced energy community (AEC) within a disadvantaged portion of Unincorporated Los Angeles County.

Graduate Student Researcher 2013-2015

Earth Research Institute, UCSB

Responsibilities: Worked as researcher on a National Science Foundation (NSF) funded grant project to develop a robust computational framework capable of supporting large scale, spatially explicit, life cycle inventory and impact assessment models.

Graduate Student Researcher 2008-2009

Center for Green Chemistry & Green Engineering, Yale University

Responsibilities: Consulted with designers from the architectural firm Perkins + Will on ways in which the development of new Green Chemistry academic course curricula could potentially help to mitigate the need for energy intensive risk management infrastructure within chemistry laboratory facilities.

Grants

California Governor's Office's Sustainable Growth Council 2018-2021

Principle Investigator: Dr. Stephanie Pincetl
Project Title: *Disadvantaged Community Energy System Transitions*

California Energy Commission - GFO-16-311 2018-2021

Principle Investigator: Dr. Stephanie Pincetl
Project Title: *Using Big Data to Holistically Assess Benefits from Building Energy System Transition Pathways in Disadvantaged Communities*

Los Angeles Department of Water & Power 2017-2018

Principle Investigator: Dr. Stephanie Pincetl
Project Title: *Mapping Historical Account Level Electricity and Water Consumption Data Using the Energy Atlas Data Platform*

California Energy Commission - GFO-15-312 2016-2018

Principle Investigator: Dr. Stephanie Pincetl
Project Title: *The EPIC Challenge: Accelerating the Deployment of Advanced Energy Communities*

California Energy Commission - GFO-15-303	2015-2018
Principle Investigators: Dr. Stephanie Pincetl, Dr. Alex Hall, Dr. Mikhail Chester	
Project Title: <i>Climate Change in Los Angeles County: Heat and Grid Vulnerability</i>	
US Environmental Protection Agency - RD835579	2014-2018
Principle Investigators: Dr. Sangwon Suh, Dr. David H Austin, Dr. Michael Doherty, Dr. Arturo A Keller, Dr. Susannah Scott, Dr. Ram Seshadri	
Project Title: <i>NCCLC: Network for Rapid Assessment of Chemical Life Cycle Impact</i>	
California Energy Commission - GFO-11-01T	2013-2014
Principle Investigator: Dr. Roland Geyer	
Project Title: <i>Potential Rooftop Photovoltaic Electricity for Sustainable Transportation in California</i>	
National Science Foundation - 0932369	2010-2013
Principle Investigators: Dr. Roland Geyer, Dr. David Stoms, Dr. Frank Davis	
Project Title: <i>Spatially-explicit Life Cycle Assessment Tools for Environmental Sustainability</i>	

Publications

- [1] Eric Daniel Fournier, Robert Cudd, Felicia Federico, and Stephanie Pincetl. On energy sufficiency and the need for new policies to combat growing inequities in the residential energy sector. *Elem Sci Anth*, 8(1):24, 2020.
- [2] Erik Porse, Eric Fournier, Dan Cheng, Claire Hirashiki, Hannah Gustafson, Felicia Federico, and Stephanie Pincetl. Net solar generation potential from urban rooftops in Los Angeles. *Energy Policy*, 142(August 2018):111461, 2020.
- [3] Erik Porse, Kathryn B Mika, Alvar Escriva-Bou, Eric D Fournier, Kelly T Sanders, Edward Spang, Jennifer Stokes-Draut, Felicia Federico, Mark Gold, and Stephanie Pincetl. Energy use for urban water management by utilities and households in Los Angeles. *Environmental Research Communications*, 2(1):015003, jan 2020.
- [4] Eric D. Fournier, Felicia Federico, Erik Porse, and Stephanie Pincetl. Effects of building size growth on residential energy efficiency and conservation in California. *Applied Energy*, 240(June 2018):446–452, 2019.
- [5] Eric D. Fournier, Arturo A. Keller, Roland Geyer, and James Frew. Investigating the Energy-Water Usage Efficiency of the Reuse of Treated Municipal Wastewater for Artificial Groundwater Recharge. *Environmental Science and Technology*, 50(4):2044–2053, 2016.
- [6] Daniel Burillo, Mikhail V. Chester, Stephanie Pincetl, and Eric Fournier. Electricity infrastructure vulnerabilities due to long-term growth and extreme heat from climate change in Los Angeles County. *Energy Policy*, 128(December 2018):943–953, 2019.
- [7] Daniel Burillo, Mikhail V. Chester, Stephanie Pincetl, Eric D. Fournier, and Janet Reyna. Forecasting peak electricity demand for Los Angeles considering higher air temperatures due to climate change. *Applied Energy*, 236(November 2018):1–9, 2019.
- [8] Eric Daniel Fournier. MOGADOR revisited: Improving a genetic approach to multi-objective corridor search. *Environment and Planning B: Planning and Design*, 43(4):663–680, dec 2015.
- [9] Arturo A Keller, Eric Fournier, and Jessica Fox. Minimizing impacts of land use change on ecosystem services using multi-criteria heuristic analysis. *Journal of Environmental Management*, 156(0):23–30, 2015.

- [10] Rose B Merola, Eric D Fournier, and Molly M McGuire. Spectroscopic investigations of Fe²⁺ complexation on nontronite clay. *Langmuir*, 23(3):1223–1226, jan 2007.

Reports

- [1] Eric D. Fournier, Felicia Federico, Stephanie Pincetl. 2020. *Correlations Between Residential Natural Gas Use and Indoor Air Quality*. California Energy Commission. Publication Number: CEC-XXX-2020-XXX.
- [2] Eric D. Fournier, Felicia Federico, Stephanie Pincetl. 2019. *Forecasting Residential Energy System Transitions within Disadvantaged Communities*. California Energy Commission. Publication Number: CEC-XXX-2019-XXX.
- [3] Felicia Federico, Stephanie Pincetl, Eric D. Fournier, Erik Porse, Yating Chuang, Magali Delmas, Rhianna Williams, Craig Perkins, Mark Costa, David Diaz. 2018. *Accelerating AEC Deployment around Existing Buildings in Disadvantaged Communities through Unprecedented Data Analysis and Comprehensive Community Engagement*. California Energy Commission. Publication Number: CEC-500-2019-010.
- [4] Daniel Burillo, Mikhail Chester, Stephanie Pincetl, Eric D. Fournier, Daniel Walton, Fengpeng Sun, Marla Schwartz, Katharine Reich, Alex Hall. 2018. *Climate Change in Los Angeles County: Grid Vulnerability to Extreme Heat*. California Energy Commission. Publication Number: CCCA4-CEC-2018-013.
- [5] Alex Hall, Neil Berg, Katharine Reich. Contributing Author: Eric D. Fournier. University of California, Los Angeles. 2018. Los Angeles Summary Report. California's Fourth Climate Change Assessment. Publication number: SUM-CCCA4-2018-007.

Books

- [1] Stephanie Pincetl, Felicia Federico, Eric Daniel Fournier, Robert Cudd, Hannah Gustafson, Erik Porse. *Energy Use in Cities: A Roadmap for Urban Transitions*. Palgrave. In Press. 2020.

Media

- [1] A Martinez, Emily Guerin, Eric D. Fournier. Take Two: The Future of Our Electric Grid. *National Public Radio - KPCC 89.3*. July 2018. [Web Link](#).
- [2] Eric D. Fournier, Alex Ricklefs. As nuclear power plants close, states need to bet big on energy storage. *The Conversation*. July 2016. [Web Link](#).
- [3] Eric D. Fournier. Cheap Solar is Great, but Don't Forget About Storage. *CCSC Research Blog*. June 2016. [Web Link](#).

Talks

- [1] Eric D. Fournier. Planning an Advanced Energy Community in Unincorporated Los Angeles County: How CCAs, DERs, and Energy Storage are Poised to Transform the Energy System. ACI's 4th Annual Grid-Scale Storage Conference. San Francisco, CA. Jun 2018. [Web Link](#).
- [2] Eric D. Fournier. Competition Between Efficiency and Growth in the Pursuit of Residential Energy Conservation. Sustainable LA Grand Challenge Research Symposium. Los Angeles, CA. Mar 2018. [Web Link](#).

Posters

- [1] Eric D. Fournier. Using Big Data to Uncover Indirect Energy Rebound Effects in the Los Angeles County Residential Sector. Poster Session. Meeting of the International Society of Industrial Ecology. Chicago, IL. Jun 2017.

- [2] Felicia Federico, Stephanie Pincetl, Eric D. Fournier. Planning an Advanced Energy Community (AEC) Around Existing Buildings in a Disadvantaged Community (DAC) within Los Angeles County. Poster Session. CEC EPIC Symposium. Sacramento, CA. Feb 2017.
- [3] Felicia Federico, Stephanie Pincetl, Eric D. Fournier. Using Big Data to Holistically Assess Benefits From Building Energy System Transition Pathways in Disadvantaged Communities. Poster Session. CEC EPIC Symposium. Sacramento, CA. Feb 2018.

Recent

- [1] Eric D. Fournier, Robert Cudd, Felicia Federico, Stephanie Pincetl. Implications of the Timing of Residential Natural Gas Use for Appliance Electrification Efforts. *Environmental Research Letters*. Accepted. June 2020.
- [2] Benjamin L. Ruddell, Caryn Massey, Richard Rushforth, Eric D. Fournier, Dan Cheng, Hannah Gustafson, Stephanie Pincetl *Reforming the Rule of 15 for Public Utility Data Release*. Utilities. Under Review. Jan 2020.
- [3] Eric D. Fournier, Robert Cudd, Lauren Strug, Felicia Federico, Stephanie Pincetl. Using Simulated Historical Forecasts to Quantify the Effects of Active Management Interventions in Coupled Human-Environmental Systems. *Environmental Software and Modeling*. In Development. June 2020.