

CURRICULUM VITÆ

Eric Daniel Fournier

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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 Campus Energy Profile with Performance Simulations for Various Facilities*

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

Research Interests

Methodological Development

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

Application Development

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

Teaching Experience

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 Positions

Post-Doctoral Researcher 2016-Present

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 energy (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.

Grant Funded Projects

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: *Climate Change in Los Angeles County: Heat and Grid Vulnerability*

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: *NCCLC: Network for Rapid Assessment of Chemical Life Cycle Impact*

California Energy Commission - GFO-11-01T 2013-2014

Principle Investigator: Dr. Roland Geyer
Project Title: *Potential Rooftop Photovoltaic Electricity for Sustainable Transportation in California*

National Science Foundation - 0932369 2010-2013

Principle Investigators: Dr. Roland Geyer, Dr. David Stoms, Dr. Frank Davis
Project Title: *Spatially-explicit Life Cycle Assessment Tools for Environmental Sustainability*

Peer Reviewed Journal Articles

- [1] **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 & Technology*, 50(4):2044–2053, Jan 2016.
- [2] **Eric D 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.
- [3] Arturo A Keller, **Eric D 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, June 2015.
- [4] 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.

Online Magazine Articles and Blog Posts

- [1] **Eric D Fournier**, Alex Ricklefs. As nuclear power plants close, states need to bet big on energy storage. *The Conversation*. Jul 2016. [Web Link](#).
- [2] **Eric D Fournier**. Cheap Solar is Great, but Don't Forget About Storage. *CCSC Research Blog*. Jun 2016. [Web Link](#).

Conference Posters and Presentations

- [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. Jun, 2017.

Recent Work in Preparation

- [1] **Eric D Fournier**, Felicia Federico, Erik Porse, Stephanie Pincetl. *How Growth in the Size of New Homes has Diminished Conservation Benefits from Improvements in Energy Efficiency*. In Preparation. Nov, 2017.
- [2] Daniel Burillo, Mikhail Chester, Janet Reyna, Stephanie Pincetl, **Eric D Fournier**. *Advancing Building Energy Models to forecast future Peak Demand Considering Extreme Heat, a case study of Los Angeles County to 2060*. In Preparation. Nov. 2017.