ERIC DANIEL FOURNIER *CURRICULUM VITÆ*

Address | 4290 Motor Avenue, Culver City, CA, 90232
Mobile | 310-746-6925
Email | me@ericdfournier.com
Website | www.ericdfournier.com
Github | https://github.com/ericdfournier

EDUCATION

Doctor of Philosophy in Environmental Informatics — 2010 - 2015
University of California at Santa Barbara, Bren School of Environmental Science & Management

- Dissertation Title | *The Life-Cycle Energy-Water Usage Efficiency of Municipal Wastewater Reuse Via Artificial Groundwater Recharge*
- Dissertation Committee | Dr. Arturo A. Keller [Chair], Dr. Roland Geyer, Dr. James Frew

Master of Arts in Geographic Information Science — 2013 - 2015
University of California at Santa Barbara, Geography Department

- Master's Degree Earned by Examination
- Master's Committee | Dr. James Frew [Chair], Dr. Keith Clarke, Dr. Phaedon Kyriakidis

Master of Environmental Science — 2008 - 2010
Yale University, School of Forestry & Environmental Studies

- Masters Thesis Title | *LEED® for New Laboratory Development: Using Green Chemistry to Overcome the Hurdles to Sustainable Laboratory Design*
- Master's Committee | Dr. Paul T. Anastas [Chair], Dr. Julie B. Zimmerman

Field Research Program in Coastal Ecology — 2007 - 2008
School for International Training, Zanzibar Program Office

- Independent Study Project Title | *Biomass Combustion and ARI in Kiwengwa, Unguja, Zanzibar*
- Independent Study Project Advisor | Mr. Benjamin Miller

Bachelor of Science in Environmental Science — 2004 - 2008
Bucknell University, Environmental Science Department

- Honors Thesis Title | *A Comprehensive Assessment of Bucknell University's Energy Profile with Performance Simulations for Various Campus Facilities*
- Honors Thesis Committee | Dr. Molly McGuire [Chair], Dr. Peter Stryker, Mr. James Knight

WORK

Graduate Student Researcher — 2011 - 2014
15 hours/week, 8 months/year

- UCSB Earth Resource Institute, Santa Barbara, CA

Graduate Student Researcher — 2009 - 2010
15 hours/week, 8 months/year

- Yale Center for Green Chemistry and Green Engineering, New Haven, CT

Sustainable Laboratory Design Consultant
40 hours/week, 3 months/year

2008 - 2009

- Perkins + Will Architecture and Design, Atlanta, GA

Laboratory Assistant
35 hours/week, 4 months/year

2005 - 2006

- Specialty Laboratories Inc. Esoteric Clinical Testing, Valencia, CA

TEACHING

Teaching Assistant | ESM 263 | Geographic Information Systems
University of California at Santa Barbara, Bren School of Environmental Science & Management
Professor James Frew

2014 - 2015

- 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.

Teaching Assistant | ESM 215 | Landscape Ecology
University of California at Santa Barbara, Bren School of Environmental Science & Management
Professor Frank W. Davis

2013 - 2014

- 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.

Teaching Assistant | ESM 202 | Environmental Biogeochemistry
University of California at Santa Barbara, Bren School of Environmental Science & Management
Professors Arturo A. Keller, Patricia Holden, & John Melack

2010 - 2012

- 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.

Teaching Assistant | F&ES 756a | Modeling Geographic Objects
Yale University, School of Forestry & Environmental Studies
Professor Charles Dana Tomlin

2009 - 2010

- This course offers a broad and practical introduction to the nature and use of drawing-based [vector] geographic information systems [GIS] for the preparation, interpretation, and presentation of digital cartographic data.

Teaching Assistant | F&ES 756b | Modeling Geographic Space
Yale University, School of Forestry & Environmental Studies
Professor Charles Dana Tomlin

2009 - 2010

- An introduction to the conventions and capabilities of image-based [raster] geographic information systems [GIS] for the analysis and synthesis of spatial patterns and processes.

FELLOWSHIPS & AWARDS

Doctoral
University of California at Santa Barbara, Bren School of Environmental Science & Management

- Walton Family Foundation Sustainable Water Markets Fellow
- Toyota Motor Company Fellow

Postgraduate
Yale University, School of Forestry & Environmental Studies

- Yale University School of Forestry & Environmental Studies Endowed Scholarship

Undergraduate
Bucknell University

- Magna Cum Laude
- Phi Beta Kappa Society
- Alpha Lambda Delta Society
- Bucknell University Prize in Environmental Studies
- President's Award for Distinguished Academic Achievement
- McKenna Foundation Undergraduate Research Fellow

SPECIALIZATION AREAS

- Environmental Quality Monitoring & Modeling
- Genetic & Evolutionary Algorithms
- Corridor Location Planning
- Combinatoric Optimization
- Numerical Analysis
- Multivariate Geostatistics
- Machine Learning & Statistical Inference
- Passive & Active Remote Sensing
- Geographic Information Systems
- Interactive Web Mapping & Cartography
- Cloud Based Scientific Computing
- Ecosystem Service Valuation & Portfolio Optimization
- Spatially Explicit Life Cycle Assessment
- Pollutant Fate Transport Modeling
- Green Chemistry & Green Engineering
- Systems Dynamics Modeling
- Global Biogeochemical Cycling

LANGUAGE PROFICIENCIES

Human

- English [Native], French, Swahili, Spanish [Basic]

Machine

- C, C++, Go, MATLAB, Python, Linux/Unix Shell [Advanced] R, SPSS [Intermediate]

Web

- HTML, CSS [Advanced] JavaScript, Adobe ActionScript [Intermediate]

Data

- MS Access, PostgreSQL/PostGIS, Git [Advanced], XML/KML, JSON/GeoJSON, GeoHash [Intermediate]

Cloud

- Google App Engine, Google Compute Engine, Docker [Intermediate] Amazon Elastic Compute Cloud [Basic]

SOFTWARE DEVELOPMENT

Library | corridor

- Role | Lead Developer
- Language | Go
- Repository | https://github.com/ericdfournier/corridor
- Description | *corridor* is library containing Go language functions for the implementation of a concurrent genetic algorithm for the multi-objective corridor location problem. This problem involves finding the least cost connected pathway through a discrete search domain in which each location is characterized by one or more measures of cost.

SELECTED PUBLICATIONS

- **Fournier, E.D.**; Keller, A.A.; Geyer, R.; Frew, J. *Investigating the Energy-Water Usage Efficiency of the Reuse of Treated Municipal Wastewater for Artificial Groundwater Recharge.* Environmental Science & Technology, 50, 4, 2044-2053 [2016] *doi:10.1021/acs.est.5b04465*

- **Fournier, E.D.** *MOGADOR revisited: Improving a genetic approach to multi-objective corridor search.* Environment and Planning B: Planning and Design. [2015] *doi:10.1177/0265813515618562*

- Keller, A.A.; **Fournier, E.D.**; Fox, J. *Minimizing impacts of land use change on ecosystem services using multi-criteria heuristic analysis.* Journal of Environmental Management. 156, 23-30, [2015] *doi:10.1016/j.jenvman.2015.03.017*

- **Fournier, E.D.** *The Life-Cycle Energy-Water Usage Efficiency of Municipal Wastewater Reuse Via Artificial Groundwater Recharge*. Doctoral Dissertation. University of California at Santa Barbara, Bren School of Environmental Science & Management. [2015] *http://gradworks.umi.com/37/33/3733521.html*

- **Fournier, E.D.** *LEED® for New Laboratory Development: Using Green Chemistry to Overcome the Hurdles to Sustainable Laboratory Design.* Master's Thesis. Yale University School of Forestry and Environmental Studies. New Haven, CT. [2010]

- **Fournier, E.D.** *A Comprehensive Assessment of Bucknell University's Energy Profile with Performance Simulations for Various Campus Facilities*. Honors Thesis. Bucknell University. Lewisburg, PA. [2008]

- **Fournier, E.D.**; Poepping, *N. Biomass Combustion and ARI in Kiwengwa, Unguja*. Tanzania-Zanzibar: Coastal Ecology and Natural Resource Management. School for International Training. Battleboro, VT. [2007] *http://digitalcollections.sit.edu/isp_collection/187*

- Merola, R.B.; **Fournier, E.D.**; McGuire, M.M. *Spectroscopic investigations of complexation of Fe^{2+} on Nontronite clay*. Langmuir. 23-3, 1223 [2007] *doi:10.1021/la062467e*

NEW RESEARCH

- **Fournier, E.D.**; Geyer, R.; Keller, A.A.; Davis, F.W. *Towards Spatially Explicit Life Cycle Assessment: The Example of Human Health Impacts from the Air Emissions in the U.S. Toxic Release Inventory.*

- **Fournier, E.D.**; Geyer, R.; Stoms D. *Potential Rooftop Photovoltaic Electricity for Electric Transportation in California.*