

Dr. Gregory M. Rowangould

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EDUCATION

PhD

University of California, Davis
Civil and Environmental Engineering: concentration in Transportation, 2010

Dissertation title: A Spatially Detailed Locomotive Emission Model and Goods Movement Data Constraints on Public Policy and Planning.

MS

University of Maine, Orono
Resource Economics and Policy: concentration in Environmental Economics and Policy, 2006

Thesis title: A spatial analysis of passenger vehicle attributes, environmental impact and policy.

BS

University of Maine, Orono
Chemical Engineering, 2003

PROFESSIONAL EXPERIENCE

University of New Mexico, Albuquerque, NM (8/2012 – current)
Assistant Professor, Department of Civil Engineering

- Sustainable transportation systems
- Mobile source emission modeling
- Goods movement modeling

Natural Resources Defense Council, Santa Monica, CA (7/2010 – 7/2012)
Transportation and Air Quality Science Fellow

- Created a spatially detailed, national GIS-based model that quantifies and maps disparities in income and racial composition of people living near high volume roads. This research is important for quantifying potential health risks from exposure to air pollutants, identifying environmental justice concerns, and siting a more robust air quality monitoring network.
- Researching disparities in particulate matter exposure from highway vehicle emissions in Los Angeles, CA using the region's travel demand model, emission factor modeling, and fine grained air dispersion modeling. The research will identify how different regional transportation plans affect local air quality hot spots, identify environmental justice concerns, and provide more accurate emission exposure data for epidemiology research.
- Created a multimodal freight model for the Chicago region to study regional transportation, air quality, and economic effects from proposed measures to prevent the spread of Asian Carp from the Mississippi River system to the Great Lakes.
- Research how regional transportation planning agencies use travel demand and land-use models, and the limitations of those models, for developing more sustainable transportation plans that reduce VMT and improve air quality.
- Provide technical modeling assistance to environmental justice organizations, environmental non-profit organizations, and community groups. Help these groups develop advocacy that is supported by objective scientific research.

- Mentor a Ph.D. student science intern and project assistants.

University of California, Davis, CA (9/2006 – 7/2010)
Research Assistant, Department of Civil & Environmental Engineering

- Created a new GIS-based locomotive emission model for the California Air Resources Board.
- Created and administered a household energy use survey to investigate technical and behavioral methods of energy conservation.
- Researched the role and limitation of goods movement data and models in California's Trade Corridor's Improvement Fund program, which disbursed \$3 billion for goods movement infrastructure projects including private freight rail infrastructure.
- Created a cellular automaton-based traffic simulation model for bicycle traffic and validated it with field data .
- Mentored undergraduate research assistants.

Pew Center on Global Climate Change, Washington, D.C. (12/2008 – 8/2009)
Consultant

- Co-authored a report on greenhouse gas emissions from domestic and international aviation and marine transportation.
- My primary contribution was researching and writing the marine transportation sections, quantifying the potential to reduce GHG emissions from domestic and international shipping through technology and operations and identifying policies to achieve those reductions.

University of Maine, Orono, ME (9/2004 – 8/2006)
Research Assistant, Department of Resource Economics & Policy and the Margaret Chase Smith Policy Center

- Created a GIS-based model to identify spatial patterns in vehicle ownership. The model was used to evaluate the equity of fuel economy and gas tax policies by comparing how consumer costs and benefits vary across communities.
- Assisted in researching and modeling tradable passenger vehicle fuel economy permit systems.
- Co-authored a report for the Maine Department of Transportation on alternative transportation funding options.

OTHER WORK EXPERIENCE

National Semiconductor, South Portland, ME (3/2004-8/04, 5/2001-8/01, 5/2000-9/00)
Process Engineer, Cooperative work experience

Fairchild Semiconductor, South Portland, ME (5/2002 – 1/2003)
Process Engineer, Cooperative work experience

COMMUNITY SERVICE

Land-Use Transportation Intergration Committee, Mid-Regions Council of Governments, Albuquerque, NM (12/2012 – current)
 • Committee Member

The Ride for Roswell, Buffalo, NY (4/2011 – 6/2011)
 • Assessed the capacity of a course for a large organized bicycle ride for a non-profit foundation using my previous experience in bicycle traffic modeling. Advised the organizers on a plan to collect data that could help ensure an enjoyable and safe event in the future.

PEER REVIEWED PUBLICATIONS

Gould, G. and D. Niemeier (2011). Assignment of Emissions Using a New Locomotive Emissions Model. *Environmental Science and Technology*. 45(13): 5846-5852.

Gould, G. and A. Karner (2009). Modeling Bicycle Facility Operation: a Cellular Automaton Approach. *Transportation Research Record: Journal of the Transportation Research Board*. 2140: 157-164.

McCollum, D., **G. Gould**, and D. Greene (2009). Greenhouse Gas Emissions from Aviation and Marine Transportation: Mitigation Potential and Policies. Report prepared for the Pew Center on Global Climate Change, Washington D.C.

Gould, G. and D. Niemeier (2009). Review of Regional Locomotive Emission Modeling and the Constraints Posed by Activity Data. *Transportation Research Record: Journal of the Transportation Research Board*. 2117: 24-32.

Niemeier, D., **G. Gould**, A. Karner, M. Hixson, B. Bachmann, C. Okma, Z. Lang and D. Heres Del Valle (2008). Rethinking downstream regulation: California's opportunity to engage households in reducing greenhouse gases. *Energy Policy*, 36(9)

OTHER PUBLICATIONS

Gould, G. Physical Separation of the Chicago Area Waterway System: The Economic and Environmental Impact of Barge Traffic Disruption. *NRDC Working Paper*.

Gould, G. and D. Niemeier. (2010). Report on the Development of a GIS Enabled Locomotive Emission Model for California. Research report prepared for the California Air Resources Board, Sacramento, CA.

Gould, G. and A. Karner. (2009). Modeling Bicycle Facility Operation: a Cellular Automaton Approach. Institute of Transportation Studies, University of California, Davis, Research Report UCD-ITS-RR-09-10.

C. Noblet, **G. Gould**, J. Rubin, D. Innis, and C. Morris (2006). Sustainable Transportation Funding for Maine's Future. Report prepared for the Maine Department of Transportation, Augusta, ME.

PRESENTATIONS

Gould, G. and S. Contreras (January 15, 2013). *Regional Scale Dispersion Modeling and Analysis of Directly Emitted Fine Particulate Matter from Highway Vehicles Using AERMOD*. Poster presented at the Transportation Research Board 92nd Annual Meeting, Washington, D.C.

Gould, G. (January 15, 2013). *A Census of the U.S. Near Roadway Population: Particulate Matter Exposure, Environmental Justice, and Coverage of the Air Quality Monitoring Network*. Presented at the Transportation Research Board 92nd Annual Meeting, Washington, D.C.

Gould, G. (October 25, 2011). *Income, Race, and the Odds of Living Along Busy Roadways: Using Census Data to Consider Equity and Environmental Justice in Regional Transportation Planning*. Presented at the Transportation Research Board Using Census Data for Transportation conference, Beckman Center of the National Academies, Irvine, CA.

Gould, G. (May 7, 2010). *A Spatially Detailed Locomotive Emission Model and Goods Movement Data Constraints on Public Policy and Planning*. Presented at the Institute of Transportation Studies, University of California, Davis, CA.

Gould, G. and D. Niemeier (January 12, 2010). *A Geographically Detailed Locomotive Emission Model*. Poster presented at the Transportation Research Board 89th Annual Meeting, Washington, D.C.

Gould, G. (October 9, 2009). *Considering Goods Movement: Air Quality and Climate Change Issues in Planning and Policy*. Invited seminar at the School of

Economics, University of Maine, Orono, ME.

Gould, G. and A. Karner (January 14, 2009). *Modeling Bicycle Facility Operation: a Cellular Automaton Approach*. Presented at the Transportation Research Board 88th Annual Meeting, Washington, D.C.

Gould, G. and D. Niemeier (January 12, 2009). *Review of Regional Locomotive Emission Modeling and the Constraints Posed by Activity Data*. Presented at the Transportation Research Board 88th Annual Meeting, Washington, D.C.

Gould, G., D. Niemeier, and A.V. Goodchild (March 17, 2008). *A Cart Before the Horse: Disaggregate Locomotive Models and Data Constraints*. Poster presented at the Transportation Research Board Data for Goods Movement Impact on Air Quality Conference, Irvine, CA.

Gould, G. (March 17, 2006). *A spatial analysis of passenger vehicle attributes, environmental impact and policy*. Presented at Laval-UMaine Student Research Conference, Department of Agricultural Economics, Laval University, Quebec, Canada.

Gould, G. (December 6, 2005). *A spatial analysis of passenger vehicle attributes, environmental impact and policy*. Seminar talk at the Cambridge Center for Climate Change Research, University of Cambridge, Cambridge, UK.

**JOURNAL
REFEREE**

Environmental Science and Technology
Journal of Zhejiang University Science C
Physics Letters A
Transportation Research Part A: Policy and Practice
Transportation Research Record, Journal of the Transportation Research Board

AFFILIATIONS

American Association for the Advancement of Science
American Chemical Society
American Economic Association
Association of Environmental and Resource Economists
ITS New Mexico
Transportation Research Board