Dan Hammer

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Education

Ph.D. Candidate, Resource Economics, University of California, Berkeley.

M.P.S. (*finalizing*), Geospatial Information Science, University of Maryland (GPA: 4.0/4.0)

B.A. Mathematics and Economics, Swarthmore College, 2007, *High Honors*.

Grants and Awards

Presidential Innovation Fellowship (2014)

Automated Insights "50 Data Scientists Gurus You Must Follow on Twitter" (2014)

Notable Mention, Amazon Web Services EC2 Spotathon (2012)

Graduate Student Research appointment, UC Berkeley (2011)

Honorable mention, National Science Foundation Graduate Research Fellowship (2011)

Innovation Fund grant (P126175, $94,500), The World Bank (2011)

Environmental Systems Research Institute (ESRI) student assistantship (2010)

First place, University of Maryland, graduate research in the field of earth/ocean science (2010)

Amazon Web Services project grant (2010, renewed)

Technical Expert, Scientific and Technical Advisory Panel, Global Environment Facility (2010)

Thomas J. Watson Fellowship (2007 - 2008)

Centennial Conference Academic Honor Role (2007)

Lang Opportunity Scholarship (2003) and Fellowship (2006); support for graduate studies

Research Experience

SpaceKnow, Co-founder

Led technical development of derived analytics from satellite imagery. Built a RESTful API for on-demand change detection from commercial imagery.

NASA, Presidential Innovation Fellow

Worked with NASA CTO office at headquarters to implement open data and open innovation innovations. Worked with the newly formed 18F organization as the Federal Government's in-house digital delivery team.

World Resources Institute, Chief Data Scientist and Research Fellow

Founded and currently directs the operations of the Data Lab at the World Resources Institute. Released Global Forest Watch to monitor global deforestation. Developed algorithms to detect and classify structural change in the spectral time series for each 500m pixel in the tropics. GFW received 250,000 visitors from 171 countries in the first week, and featured in articles from the BBC, The Atlantic, Slate, and NBC, among many others.

Hylozoic, Data Scientist

Developed software in Clojure and Python for large-scale simulations and network analysis. Built a scalable recommendation engine using Cascalog to run on Hadoop.

The World Bank, Short Term Consultant

Developed a mobile application to *groundtruth* deforestation, supported by an Innovation Fund grant; also supported by an internal grant to assess the economic determinants of deforestation in Indonesia.

Resources for the Future, Affiliated Expert, Research Analyst

Affiliated Expert in the Center for Climate and Electricity Policy. Developed the second release of the Forest Carbon Index (**FCI**), a public tool to analyze the global distribution of forest carbon resources; constructed the FCI workflow on Amazon.com's cloud computation platform.

Center for Global Development, Consultant and Research Assistant

Supported the research of David Wheeler, Nancy Birdsall, and Arvind Subramanian on multiple projects, including the development of a system to track deforestation in real-time at 1km spatial resolution using NASA satellite imagery (news coverage **here** and **here**); the system was also featured in a TEDx **talk**.

RescueCorps, Project Coordinator

Core staff member for RescueCorps, a nonprofit that provides training to local firefighters in Bolivia and Thailand; personal responsibilities ranged from grant writing and curriculum development to on-site training and emergency response in Santa Cruz, Bolivia, as a nationally certified firefighter.

Academic Positions

Graduate Student Instructor, University of California, Berkeley

ARE212: Multiple Equation estimation. Graduate-level econometrics to upper-division students in Economics, Public Policy, Biostatistics, among other departments. Course materials online.

IAS106: Undergraduate microeconomics.

Instructor, San Quentin State Prison

Taught introductory statistics, intermediate algebra, and trigonometry to a group of upper-level inmates seeking an associate's degree as part of the Prison University Project.

Research Assistant, Agricultural and Resource Economics Department, UC Berkeley

Basic data cleaning and analysis for Prof. Max Auffhammer

Teaching Assistant, Economics Department, Swarthmore College

Intermediate Microeconomics, Prof. Larry Westphal

Intermediate Macroeconomics, Prof. Mark Kuperberg

Research Assistant, Economics Department, Swarthmore College

Supported the research and curriculum work of Prof. Stephen O'Connell, Prof. Stephen Golub, and Prof. Rob Hollister; data cleaning, copy editing, basic research.

Writing Associate, Swarthmore College

Course-specific writing tutor for introductory economics (Prof. Stephen Golub), political science first-year seminar (Prof. Kenneth Sharpe), and introduction to academic writing (Prof. Rona Buchalter)

Peer-Reviewed Publications

Dasgupta, S., **D. Hammer**, R. Kraft, D. Wheeler. 2014. "A Resource Allocation Model for Tiger Habitat Protection." *Journal of Management and Sustainability*, Vol **4**(3).

Hammer, D., G. Judge, A. Plastino. 2013. "Information Recovery in Nonlinear Dynamic Time Series Models." *Quantitative Economics, Submitted.*

Hammer, D., D. Wheeler, R. Kraft. 2013. "Near real-time forest cover change detection in the humid tropics using MODIS data." *International Journal of Applied Earth Observation and Geoinformation*, Vol. **33**, pp. 1-9.

Wheeler, D., **D. Hammer**, R. Kraft, S. Dasgupta, B. Blankespoor. 2013. "Economic dynamics and forest clearing: A spatial econometric analysis for Indonesia." *Ecological Economics*, Vol. **85**, pp. 85-96.

Dasgupta, S., **D. Hammer**, R. Kraft, D. Wheeler. 2012. "Vyaghranomics in Space and Time: Estimating Habitat Threat for Bengal, Indochinese, Malayan and Sumatran Tigers." *Journal of Policy Modeling, Accepted, available online.*

Forrest, J., **D. Hammer**, R. Kraft, *et al.* 2011. "Single-species conservation in a multiple-use landscape: current protection of the tiger range." *Animal Conservation*, Vol. **14**.

Working Papers

Birdsall, N., **D. Hammer**, A. Subramanian, K. Ummel. 2009. "Energy Needs and Efficiency, Not Emissions: Re-framing the Climate Change Narrative." CGD Working Paper 187.

Birdsall, N., **D. Hammer**, A. Subramanian. 2009. "Identifying a fair deal on climate change." VOX EU Editor's Pick, 14 December 2009. Available **online**.

Dasgupta, S., **D. Hammer**, R. Kraft, D. Wheeler. 2012. "Vyaghranomics in Space and Time: Estimating Habitat Threat for Bengal, Indochinese, Malayan and Sumatran Tigers." World Bank Policy Research Working Paper, WP6212.

Hammer, D., R. Kraft, D. Wheeler. 2009. "Rapid Identification of Deforestation From Moderate-Resolution Remotely Sensed Data." CGD Working Paper 192.

Wheeler, D., **D. Hammer**. 2010. "The Economics of Population Policy for Carbon Emissions Reduction in Developing Countries." CGD Working Paper 229.

Wheeler, D., **D. Hammer**. R. Kraft, S. Dasgupta, B. Blankespoor. 2011. "Economic Dynamics and Forest Clearing: A Spatial Econometric Analysis for Indonesia." CGD Working Paper 280. Accepted for presentation at the *19th Annual Conference of the European Association of Environmental and Resource Economists.*

Wheeler, D., **D. Hammer**. R. Kraft. 2011. "From REDD to Green: A Global Incentive System to Stop Tropical Forest Clearing." CGD Working Paper 282.

Wheeler, D., **D. Hammer**. R. Kraft. 2011. "Forest Clearing in the Pantropics: December 2005-August 2011." CGD Working Paper 283.

Works in Progress

The rank-size distribution of deforestation clusters (with D. Wheeler and R. Kraft) CGD Working Paper.

Open-source distributed tools for large-scale spatial data analysis (with R. Kraft, S. Ritchie, and A. Steele)

Conference and Seminar Presentations

Large-scale spatial analysis in empirical economics and conservation policy

Yale University, November 1, 2013 *scheduled*.

Clojure/West, March 19, 2013.

UC Davis, November 2, 2012.

Bay Area Tropical Forest Network, Goldman School of Public Policy, November 17, 2011.

UC Berkeley, Geospatial Innovation Facility, October 20, 2011.

Princeton University, Woodrow Wilson School, STEP program, April 6, 2011.

Swarthmore College, Economics Department, February 10, 2011.

Real-time identification of forest clearing using NASA satellite imagery

World Resources Institute, 2013.

Google I/O, May 15, 2013.

Cosmogia Satellites, March 23, 2013.

Climate.com, March 17, 2013.

Stanford University, US Rio+2.0, invited Tech Group, February 4, 2012.

Association of American Geographers Annual Meeting, April 12, 2011.

The Nature Conservancy, January 6, 2011.

ESRI User Conference, July 14, 2010.

Google, April 12, 2010.

University of Maryland, GRID competition, April 6, 2010.

Global Environment Facility, 2009.

Inter-American Development Bank, 2009.

The World Bank, 2009.

World Wildlife Fund, 2009.

World Resources Institute, 2009.

Center for Global Development, 2009.

Spatial modeling and monitoring of forest carbon credit supply

Resources for the Future, February 2, 2011.

UN Climate Conference, Cancún, IETA side event, December 7, 2010.

World Bank Annual Meetings, Istanbul, October 5, 2009.

Skills

Programming: Python, HTML/CSS, Clojure, JavaScript (basic)

Statistics: Stata, Mata, R, GRASS (basic), Matlab (basic)

Other: ArcGIS, LaTeX, ENVI, Emacs, Amazon.com EC2/S3/SQS, CartoDB, Earth Engine, D3

Service

Board Member, Bay Area Tropical Forest Network

Co-organizer of the EcoHack conference (sponsored by Google and the San Francisco Mayor's office)

Swarthmore Borough volunteer firefighter (2002 - 2005); First Responder

Miscellaneous

Team USA, Dragonboat World Championships; world-record holder, 500m Open

Tour du Teche 2010 winner; Key to the City of Breaux Bridge, Louisiana

Texas Water Safari, 262-mile "World's Toughest Canoe Race" overall win 2011

Speedcuber (fast-solving Rubik's cubes, PR: 27 seconds)

NOLS graduate, semester in Patagonia; Wilderness First Responder

Last updated: August 21, 2014