

Graham R. Jeffries

Agricultural Data Scientist

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Education

- 2013- Ph.D. Candidate, Tufts University
Agriculture, Food, and Environment Program
NSF IGERT Fellowship in Water Diplomacy
My dissertation research focuses on the application of emerging methods in data science, agronomic modeling, and geoinformatics (remote sensing, GIS, and data visualization) to enhance decision-making in agriculture with improved crop status forecasting and web-based management tools.
- 2011-13 Master of Science, Tufts University
Agriculture, Food, and Environment Program
Graduate coursework included computational modeling, spatial statistics, resource economics, and agricultural science and policy.
- 2006-10 Bachelor of Arts, Hampshire College
Thesis: Facing the Future of Food: a spatial and economic analysis of local food systems in Massachusetts

Awards

- 2013- NSF IGERT Fellowship in Water Diplomacy
2012 Sustainability Innovation Student Challenge, Dow Chemical Company
2012 Graduate Student Research Fellowship, Tufts Institute of the Environment
2011- Academic Scholarships, Tufts University
2006-10 Academic Scholarships, Hampshire College

Experience

- 2013 - Founding Principal, Food System Analytics, LLC
FSA provides geoanalytical research and consulting for research institutes, agencies, and businesses across the food and agriculture sectors.
- 2015 Agricultural Systems Modeling Intern, The Climate Corporation
Working with the Agronomic Modeling and Climatology research teams, I developed a biophysical snow hydrology model to improve the company's agro-terrestrial models that support farm management recommendation services.

Research Assistantships, Tufts University

- 2013 Research for Dr. Christian Peters
Developed a flexible database system for estimating the land use requirements of different diets.
- 2011– Research for the project “Enhancing Food Security of Underserved Populations in the Northeast through Sustainable Regional Food Systems,” funded by the USDA Agriculture and Food Research Initiative – Global Food Security (AFRI-GFS) program. My responsibilities include spatial modeling US yield trends, assessing quality of remotely sensed agricultural land cover data, and modeling spatial clustering patterns in food supply chain firms.
- 2012 Research Intern, Urban Design Lab
The Earth Institute at Columbia University
Developed software for automated data scraping of agricultural statistics, and produced methodologies for quantifying the impact of peri-urban agricultural production.
- 2012 Research Intern, Crop Systems and Global Change Lab
USDA – Agricultural Research Service
Developed methods for high-resolution interpolation methods for meteorological variables used in process-level crop simulation models.
- 2012 Research Intern, Land for Good
Developed an automated farmland assessment tool which synthesizes and reports soil and landscape characteristics.
- 2010–11 Brewer, Katalyst Kombucha, LLC
Katalyst Kombucha produces and distributes a non-alcoholic fermented tea beverage across the Northeast. Responsibilities of the position included brewing, product testing, and supply chain logistics.

Presentations

2014

Jeffries, GR. “The path of the lazy scientist: technologies for improving scientific impact, rigor, and transparency.” Tufts University Friedman School Doctoral Seminar. Boston, MA, March 2014.

Jeffries, GR. “Spatial analysis with Python and Arcpy.” Workshop for the Water Diplomacy Group. Medford, MA, February 2014.

2013

Jeffries, GR. “Project Management for Data Analysis.” Invited talk in the course “Environmental Informatics,” Tufts University, November 2013.

Liss, A, M Koch, GR Jeffries, and EN Naumova. "Short-term Vulnerability or Long-term Adaptation: Quantifying Adverse Health Consequences of Extreme Weather Events with Spatial Regionalization." Oral presentation at the International Society for Photogrammetry and Remote Sensing Symposium on Advances in Geospatial Technologies for Health, Arlington, VA, August 2013.

Jeffries, GR, A Liss, EN Naumova. "Detection of Network-based Directional Spatial Associations Between High-density Animal Production and Gastrointestinal Hospitalizations Among the Elderly." Oral presentation at the The International Environmetrics Society Conference, Anchorage, AK, June 2013.

Jeffries, GR, JP Resop, DH Fleisher, and TG Griffin. "The Influence of Spatial Meteorology Data Resolution on Yield Estimates from a Process-level Crop Simulation Model." Oral presentation at the Spatial Statistics Conference: Revealing Intricacies in spatial and spatio-temporal data with statistics, Columbus, OH, June 2013.

Jeffries, GR. "Spatial Meteorology Data for Food System Scenario Modeling." Poster presentation at the Tufts Institute of the Environment Fellowship Meeting, Medford, MA, May 2013.

Jeffries, GR, A Liss, and EN Namova. "Spatial Correlation of High-density Animal Production and Gastrointestinal Hospitalizations Among the Elderly: An Exploratory Analysis." Poster presentation at the Water Systems, Science, and Society Conference - Feeding Ourselves Thirsty: The Future of Water and Food Production, Medford, MA, April 2013.

Jeffries, GR, TG Griffin, H Etemaadnia, and S Goetz. "Spatial Industry Clustering of U.S. Food Supply Chains: 1980-2010." Oral presentation at the The Future of Food and Nutrition: Graduate Student Research Conference, Boston, MA, April 2013.

2012

Jeffries, GR. "Comparative Foodshed Analysis of Potential Local-Regional Food Production Across the U.S." Oral presentation at the Northeast Arc Users Group Spring Conference, Northampton, MA, May 2012.

Technical Skills

Languages: Python, R, Latex, SQL, Javascript, HTML, CSS
Software: ArcGIS Desktop Suite, QGIS
Databases: PostgreSQL (PostGIS), MySQL
OS: Debian-based systems, Windows, OSX

Professional Organizations

2014- American Society of Agronomy
2013- International Environmetrics Society