Curriculum Vitae

Tim G. Frazier, Ph.D.

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Education

Doctor of Philosophy in Geography, *August 2009*

The Pennsylvania State University: University Park, PA

Dissertation: Mitigating Inter- and Intra-Community Geospatially Dependant Vulnerability through the Enhancement of Network Resilience: A Case Study of Sarasota County, Florida Advisors: Brent Yarnal (Committee Chair), Alan MacEachren, John Kelmelis, and Vinky Shakar

Master of Science in Geography, May 2005

The Pennsylvania State University: University Park, PA

Thesis: No Way Out: Assessing Evacuation Potential of Subdivisions along the South Carolina Coast

Bachelor of Arts in Geography, History Minor, May 2002

University of Tennessee: Knoxville, TN

Academic Positions

Assistant Professor, University of Idaho, Department of Geography, August 2009 – Present

Assistant Professor, University of Idaho, Building Sustainable Communities Initiative, August 2009 - Present

Research Assistant, The Pennsylvania State University, Department of Geography, January 2004 - August 2009

Instructor, The Pennsylvania State University, Department of Geography, January - June 2007

Teaching Assistant, The Pennsylvania State University, Department of Geography, August - December 2003 & August - December 2005

Teaching

The University of Idaho

GEOG 385 **GIS**. Introduction to basic concepts and applications of geographic information systems (GIS). *Fall 2009*, *Fall 2010*

GEOG 165 **Introduction to Human Geography**. Introduction to geographical dimension in human behavior and how this is evident in population distribution, rural and urban land use, and social, economic and political attributes of societies. *Spring 2010*

GEOG 411 **Natural Hazards and Society**. Introduction to natural hazards and the social science principles and methodologies involved in addressing critical questions relating to mitigation, resilience, and adaptation to natural hazards. *Fall 2010*

GEOG 504 **Human Dimensions of Natural Hazards**. Graduate level course that applies various GIS analysis techniques to hazard and climate change mitigation and adaptation issues at county and regional scales. *Fall 2010*

BIOP 522 **Planning Methods**. Introduction to basic statistical analysis and planning methods including quantitative, qualitative, spatial analysis, and spatial statistical techniques. *Fall 2010*

GEOG 455 **Societal Resilience and Adaptation to Climate Change**. Consequences of human causes, mitigation and adaptations, community resilience strategies, and policy implications to human impacts of global climate change. Concentration on social science issues including opportunities and constraints for resilience and adaptation to global climate change. *Spring 2011*

BIOP 560 **Bioregional Planning Studio**. Introduction to the practice of planning in a real-world setting. Focuses on vulnerability assessment, and planning for resilience enhancement. *Spring 2011*

GEOG 330 **Urban Geography**. Theory and models of the functions, origin, development, structure, and distribution of cities; land-use classification; geographic aspects of city planning. *Fall 2011*

The Pennsylvania State University

Instructor

GEOG 030 **Geographic Perspectives on Sustainability and Human-Environment Systems**. Introduction to theory, methods, history and contemporary issues in global and regional relationships between human activity and the physical environment. *Summer 2007*

GEOG 333 **Human Dimensions of Natural Hazards**. An introduction to social science principles and methodologies to address critical questions relating to managing the risks of natural hazards. *Spring 2007*

Teaching Assistant

GEOG 010 **Introduction to Physical Geography**. Survey and synthesis of processes creating geographical patterns of natural resources, with application of basic environmental processes in resource management. *Fall 2005*

GEOG 020 **Human Geography**. Spatial perspective on human societies in a modernizing world; regional examples; use of space and environmental resources; elements of geographic planning. *Fall 2003*

Research

The University of Idaho

Principal Investigator

Eastern Florida Climate Change and Sea Level Rise Project. Focus of project is to develop sea level rise scenarios for to purpose of evaluating socioeconomic exposure and mitigation opportunities for enhancing community resilience. Project is partially funded through a grant with the National Science Foundation EPSCoR.

Hazardous Materials Emergency Preparedness Planning Grant for Local Emergency Planning Committees/Tribes. Research is developing a GIS based methodology to estimate risk of and impacts to exposure from hazardous materials flowing through specific geographic regions by way of road and rail networks. Project is funded through the Department of Homeland Security.

Economic Requirements for Post Disaster Response in Sarasota County, Florida. Project is developing a GIS based spatial econometric model to estimate funding required for post disaster response and short term redevelopment for post disaster community economic stability. Project is partially funded through a grant with the National Science Foundation EPSCoR.

Hazard Mitigation and Comprehensive Planning. Focus of project is to determine the appropriateness of "copy and paste" county hazard mitigation plans for disaster mitigation. Project is partially funded through a grant with the National Science Foundation EPSCoR.

Critical Infrastructure, Storm Surge, and Sea Level Rise Project. Research has as a focus the development of GIS storm surge depth estimation methodology to determine the vulnerability of critical infrastructure in coastal communities. Project is funded by the National Science Foundation EPSCoR

Co-Principal Investigator

USDI-NPS Socioeconomic Atlases. This research seeks to develop geo-visual techniques aimed at supplementing the scientific knowledge of park managers with information on socioeconomic conditions in the regions surrounding national park units. Project is funded by the National Park Service Social Science Program.

The utility of Lidar versus DEM. Project examines the effect of Light Detection and Ranging (LiDAR) data on the accuracy of SLR estimates in coastal locations in the United States. Project is partially funded by NOAA and National Science Foundation EPSCoR.

The Pennsylvania State University

Project Manager

Center for Integrated Regional Assessment, Department of Geography. Focuses on hazards and climate change research specifically studying the potential impact of sea level rise-enhanced hurricane storm surge inundation on Sarasota County, Florida and is funded through a grant with the National Oceanic and Atmospheric Administration (NOAA). *May 2007 - August 2009*

Center for Integrated Regional Assessment, Department of Geography. Funded through a collaborative agreement with the United States Geological Survey (USGS) and required the completion a tsunami inundation zone analysis for the state of Hawai'i. *January* 2006 - May 2007

Co-Principal Investigator

Multiple Applied Perspectives in Geography (MAPG), Department of Geography. Graduate student led collaboration which seeks to integrate graduate and undergraduate students in an exploration of redevelopment discourses in Biloxi, Mississippi post hurricane Katrina. Funded by a grant from the Department of Geography at The Pennsylvania State University. *January* 2007 – May 2009

Research Assistant

GeoVISTA Center, Department of Geography, Geocollaborative Crisis Management (GCCM) research project. NSF funded study that had the goal to remedy current deficiencies in geospatial information technologies that fail to support group work and have typically been designed without scientific understanding of how groups (or groups of groups) work in crisis management to collect, process, and use geospatial information. *August 2004 - December 2005*

GeoVISTA Center, Department of Geography, Dialogue-Assisted Visual Environment for Geoinformation (DAVE_G) research project. Developed principles for, implementation, and assess of natural, multi-modal, multi-user dialogue-enabled interfaces to geographic information systems (GIS) that make use of large-screen displays and virtual environment technology to assist in collaborative work environments. *January* 2004 – *December* 2004

Publications

- **Frazier**, T., N. Wood, B. Yarnal, D.H. Bauer. 2010. Influence of potential sea level rise on societal vulnerability to hurricane storm-surge hazards: Sarasota County, Florida. *Applied Geography*, *Vol.30.4*, pp. 490-505, December 2010
- **Frazier**, T., N. Wood, B. Yarnal. 2010. Stakeholder perspectives on land-use strategies for adapting to climate-change-enhanced coastal hazards: Sarasota County, Florida. *Applied Geography*, *Vol.30.4*, pp. 506-517, December 2010
- Solis, P., **T., Frazier**, and others. 2010. Climate Change and Hazards in the Americas: International Interdisciplinary Research Directions and Opportunities. National Science Foundation and the Association of American Geographers Technical Report
- **Frazier, T.**, N. Wood, and B. Yarnal. 2009. Utilizing GIS to identify vulnerability to coastal inundation hazards: A case study from Sarasota County, Florida. In Spatial Planning as a Strategy for the Mitigation of Risk from Natural Hazards. Elsevier
- Koua, E. L., A. MacEachren, I. Turton, S. Pezanowski, B. Tomaszewski, & **T. Frazier**. forthcoming. Conceptualizing a User-Support Task Structure for Geocollaborative Disaster Management Environments. In B. V. d. Walle & R. Hiltz & M. Turoff (Eds.), Information Systems for Emergency Management, Advances in Management Information Systems monograph series. Armonk NY: M.E. Sharpe
- **Frazier**, T., N. Wood, B. Yarnal. 2008. Current and Future Vulnerability of Sarasota County, Florida, to Hurricane Storm Surge and Sea Level Rise. *Proceedings of the Solutions to Coastal Disasters Conference*, Turtle Bay, HI.
- **Frazier**, **T**., review of, Economics & Land Use Planning. *Regional Studies*, *Vol. 42.2*, pp. 295-303, March 2008
- Wood, N., A. Church, T. Frazier, B. Yarnal. 2007. Variations in Community Exposure and

Sensitivity to Tsunami Hazards in the State of Hawai`i. United States Geological Survey technical report

Frazier, **T**. 2006. The Floyd fiasco: Lessons learned in hurricane evacuation preparedness. *The Pennsylvania Geographer*, 43, 2, pp 22-42

Brewer, I., M. McNeese, **T. Frazier**, S. Fuhrmann, I. Terrell. 2005. Expanding team knowledge through procedural, temporal, and strategic elements. *Proceedings of the Human Factors and Ergonomics Society 49th Annual Meeting*, Orlando, FL

Publications in Preparation

Frazier, T., in preparation for *Natural Hazards*, The concept of geospatially dependent vulnerability: Reevaluating the selection of scale in vulnerability assessments

Frazier, **T**., in preparation for *Global Environmental Change*, Climate Change Enhanced Sea Level Rise and its Effects on the Storm-Surge Future Land-falling Hurricanes

Frazier, **T**., in preparation for IJGIS," Visualization of Slowing Developing Hazards: Influencing Perceptions and Behaviors to Facilitate Adaptation Planning

Grants and Awards

Pending

National Science Foundation and United States Department of Agriculture, "Increasing Community Resilience to Contemporary and Future Hazards: Collaborative Decision Support in the Intermountain West", 2011

Awarded

Department of Homeland Security, "Hazardous Materials Emergency Preparedness Planning Grant for Local Emergency Planning Committees/Tribes", 2010

United States Department of the Interior Nation Park Service, "USDI-NPS Socioeconomic Atlases", 2010

National Science Foundation Pan-American Advanced Studies Institutes Program (PASI) Grant, "Integrating Research on Climate Change and Hazards in the Americas", 2010

National Science Foundation REU Grant, "A GIS Analysis of Climate Change Enhanced Storm Surge Inundation to Predict the Contemporary & Future Vulnerability of Infrastructure Assets through a Case Study of Sarasota County Florida", *2010*

Department of Geography Alumni Scholars Award, Department of Geography, The Pennsylvania State University, 2008-2009

National Science Foundation Doctoral Dissertation Research Improvement Grant, "Mitigating Inter- and Intra- Community Geospatially Dependent Vulnerability through the Enhancement of Network Resilience: A Case Study of Sarasota County, Florida," 2007-2009

National Oceanic and Atmospheric Administration Sectoral Applications Research Program (SARP), "Increasing Community Resilience to Future Hurricane Storm Surge: Collaborative Decision Support in Sarasota, Florida," *August 2007-August 2009*

The Pennsylvania State University Department of Geography Research Grant, "Discourses of (re) Development: Imagining Alternatives for East Biloxi Post-Katrina." *Fall 2006-Fall 2007*

United States Geological Survey Geographic Analysis and Monitoring (GAM) Program Grant, "Assessing Societal Vulnerability to Natural Hazards," Fall 2006-Summer 2007.

Ruby Miller Travel Grant, Department of Geography, The Pennsylvania State University, graduate student fieldwork expenses, *Fall 2005*

Not Awarded

National Science Foundation (CNH), "The Sarasota Coupled Natural and Human Systems Project", 2010

Oceanic and Atmospheric Research (OAR) and National Oceanic and Atmospheric Administration, "Developing Tools that Provide Actionable Information for Decision Makers on the Effects of Sea Level Rise (SLR) on Coastal Inundation", 2010

Oceanic and Atmospheric Research (OAR) and National Oceanic and Atmospheric Administration, "Evaluating Public Policies to Adapt to Sea Level Rise in the Chesapeake Bay: The Role and Value of Climate Information Products", 2010

Other Awards

Gilbert F. White Dissertation Award Presented by the Hazards Specialty Group of the Association of American Geographers, 2010-2011

Presentations

Frazier, T., N. Wood, B. Yarnal, "Influence of potential sea level rise on contemporary and future hurricane storm-surge hazard zones and societal vulnerability in Sarasota County, Florida", Presentation at the Association of American Geographers Annual Meeting, Seattle, Washington, April 12, 2011

Butsick, D., **T. Frazier**, "Interaction between post-disaster short-term response and long-term redevelopment in Sarasota County, Florida", Presentation at the Association of American Geographers Annual Meeting, Seattle, Washington, April 13, 2011

Thompson, C., **T. Frazier**, M. Walker, S. Fricke, "Incorporating social vulnerability into traditional U.S. hazard mitigation plans: A case study of Shoshone County, Idaho", Presentation at the Association of American Geographers Annual Meeting, Seattle, Washington, April 13, 2011

Tate, C., **T. Frazier**, "A sea level rise enhanced storm surge methodology for determining potential critical infrastructure failure in Sarasota County, Florida", Presentation at the

- Association of American Geographers Annual Meeting, Seattle, Washington, April 15, 2011 Walker, M., **T. Frazier**, "A methodology for evaluating cut-and-paste hazard mitigation plans: A case study of 19 counties in Western Washington", Presentation at the Association of American Geographers Annual Meeting, Seattle, Washington, April 13, 2011
- **Frazier, T.**, N. Wood, B. Yarnal, "Influence of sea level rise on societal vulnerability to hurricane storm-surge hazards: Sarasota County, Florida", Presentation at the Storm Surges Congress: Risk and management of current and future storm surges, Hamburg Germany, September 16, 2010
- Tate, C., **T. Frazier**, "A sea level rise enhanced storm surge methodology for determining potential electrical substation failure in Sarasota County, Florida", Presentation at the Association of Pacific Coasts Geographers, Coeur d'Alene, Idaho, September 17, 2010
- **Frazier, T**. Invited Speaker: NOBLIS "Conducting societal vulnerability assessments along the U.S. coasts", Falls Church, VA, April 17, 2010
- **Frazier, T.**, N. Wood, B. Yarnal, "Influence of sea level rise on societal vulnerability to hurricane storm-surge hazards: Sarasota County, Florida" Presentation to the Association of American Geographers Annual Meeting, Washington D.C., April 15, 2010
- **Frazier, T.**, N. Wood, B. Yarnal, P. Howe, invited speakers: "Building community resilience to hurricane storm surge & sea level rise in Sarasota County," Public presentation to disseminate research results to stakeholder in Sarasota County at Mote Marine Laboratory, Sarasota Florida, February 8, 2010.
- **Frazier, T.**, invited speaker: "The affect of climate change on hurricane hazards in Sarasota County, Florida," Presentation at the Mote MPI Sea Level Rise Conference, Sarasota Florida, October 12, 2009
- **Frazier, T.**, N. Wood, B. Yarnal, invited speakers: "A methodology to inject sea level rise enhanced storm-surge modeling into the long-range comprehensive plans of coastal communities," Presentation at East Carolina Hurricane Floyd Symposium, Greenville North Carolina, September 18, 2009
- **Frazier, T.**, N. Wood, B. Yarnal, "The affect of climate change on hurricane storm surge in Sarasota County," Presentation to Sarasota County and Municipal Officials, Sarasota Florida, July 12, 2009
- **Frazier, T.**, N. Wood, B. Yarnal, "A Methodology to Inject Sea Level Rise Enhanced Stormsurge Modeling into the Long-Range Comprehensive Plans of Coastal Communities," Presentation to the Association of American Geographers Annual Meeting, Las Vegas, Nevada, March 26, 2009
- Yarnal, B., **T. Frazier**, N. Wood, "Current and Future Hurricane Storm Surge Vulnerability of Sarasota County Florida," Presentation to the Association of American Geographers Annual Meeting, Las Vegas, Nevada, March 26, 2009
- **Frazier, T.**, invited speaker: "A GIS Assessment of the Contemporary and Dynamic Vulnerability of Sarasota County to Sea Level Rise Enhanced Hurricane Storm Surge," Presentation at the Post Disaster Recovery Plan Workshop in Sarasota Florida, February 4, 2009

- **Frazier**, **T**., N. Wood, B. Yarnal, "Current & Future Vulnerability of Sarasota County, Florida, to Hurricane Storm Surge & Sea Level Rise," Presentation at the American Society of Civil Engineers' Solutions to Coastal Disasters Conference in Turtle Bay HI, April 13-16, 2008
- **Frazier**, T., J. Conley, J. Hayes-Conroy, V. Sebestyen, "Surviving Graduate School" Panel Discussion at the No Boundaries Graduate Student Conference at The Pennsylvania State University, March 29, 2008
- **Frazier**, **T**., N. Wood, "GIS-based Assessment of Community Exposure and Sensitivity to Tsunami Hazards along the Hawaiian Coast," Presentation at the annual meeting of the Association of American Geographers in San Francisco, CA. April 17-21, 2007
- **Frazier**, **T**., B. Yarnal, "Vulnerability Assessments of the Future-The Case of Hurricane Storm Surge," Presentation at the annual meeting of the Association of American Geographers in San Francisco, CA. April 17-21, 2007
- Derickson, K., T. Frazier, E. Knighton, M. Rios, "Discourses of (re) Development: Imagining Alternatives for East Biloxi Post-Katrina." Presentation at the annual meeting of the Association of American Geographers in San Francisco, CA. April 17-21, 2007
- **Frazier**, **T**. Guest Lecture: "Geography's Role in Shaping Europe and Europe's Role in Shaping Geography," Geog 40, World Regional Geography, Department of Geography, The Pennsylvania State University, Fall 2006
- **Frazier**, **T**. Keynote Speaker: "From the Southeast Conference to the Big Ten: The Professionalization of a Geographer," Gamma Theta Upsilon Induction Ceremony, The Pennsylvania State University, Spring 2006
- **Frazier**, **T**. "No way out: Assessing evacuation potential of subdivisions along the South Carolina Coast," Poster presentation at the annual meeting of the Association of American Geographers in Chicago, IL. March 6-11, 2006
- **Frazier**, **T**. "The Floyd Fiasco: Lessons Learned in Hurricane Evacuation Preparedness," Presentation at the No Boundaries Graduate Student Conference at The Pennsylvania State University, February 25, 2006
- **Frazier**, **T**. "Hurricane Evacuation Preparedness: The Grand Strand," Poster presentation at the Graduate Exhibition, The Pennsylvania State University, Spring 2006.
- **Frazier**, **T**. Guest Lecture: "Safety Issues in Hurricane Evacuations," IE 419 Safety Systems Engineering, Department of Industrial and Manufacturing Engineering, The Pennsylvania State University, Fall 2005
- **Frazier**, **T**. Guest Lecture: "The Field of Nature-Society Interaction," Geog 20, Introduction to Human Geography, Department of Geography, The Pennsylvania State University, Summer 2005
- **Frazier**, T. "No way out: Assessing evacuation potential of subdivisions along the South Carolina Coast," Presentation at the annual meeting of the Association of American Geographers in Denver, CO. April 5-9, 2005
- Frazier, T. "When speed really matters: Assessing evacuation potential of subdivisions along the

South Carolina Coast," Middle States Division of the Association of the American Geographers at Villanova University, November 2004

Professional Service

External Service

Reviewer for U.S. Department of State, 2011-Present

Reviewer for Journal of Environmental Management, 2011-Present

Reviewer for Oregon Sea Grant, 2011-Present

Reviewer for New York Sea Grant, 2011-Present

Reviewer for Virginia Sea Grant, 2011-Present

Reviewer for Florida Sea Grant, 2011-Present

Reviewer for Washington Sea Grant, 2011-Present

Reviewer for Journal of Landscape Ecology, 2011-Present

Sea Level Rise Climate Engagement Consultant, Oregon Sea Grant, 2010-Present

Reviewer for Professional Geographer, 2010-Present

Reviewer for Natural Hazards, 2010-Present

Reviewer for Weather, Climate, and Society, 2010-Present

Reviewer for the ISET Journal of Earthquake Technology, 2010-Present

Reviewer for Pearson Education, 2010-Present

Reviewer for the International Journal of Geographic Information Science (IJGIS), 2007-Present

Graduate Student Representative to the Graduate School's Graduate Council at the Pennsylvania State University, 2008-2009

Graduate Student Representative to the Graduate School's Graduate Council Committee on

Graduate Student and Faculty Issues Committee at the Pennsylvania State University 2008-2009

Judge for the Graduate School Exhibition, The Pennsylvania State University, 2008

Graduate Student Association Representative to the Faculty Senate, The Pennsylvania State University, 2007-2008

Graduate Student Association Representative to the University Planning Committee, The Pennsylvania State University, 2007-2008

Graduate Student Representative to the Graduate Student Association, The Pennsylvania State University, 2005-2008

Graduate Student Association Representative to the Student Life Committee, The Pennsylvania State University, 2006-2007

Graduate Student Representative to the John W. White Graduate Fellowship selection committee, The Pennsylvania State University, 2006-2007

Judge for the Pennsylvania Junior Academy of Science State Meeting, 2005-2006

Departmental and University Service

Campus Planning Advisory Committee, University of Idaho, 2011-Present

College of Science Strategic Planning Committee, University of Idaho, 2011-Present

New Hire Faculty Search Committee, Department of Geography, University of Idaho, 2010-Present

Academic Work Group of the Advisory Group on Information Technology, The University of Idaho, 2009-Present

Admissions Committee, Department of Geography, The University of Idaho, 2009-Present

GIS Program Curriculum Committee, Department of Geography, The University of Idaho, 2009-Present

Program Committee, Bioregional Planning Program, The University of Idaho, 2009-Present

Curriculum Committee, Bioregional Planning Program, The University of Idaho, 2009-2010

Undergraduate Geography Club Faculty Sponsor, The Department of Geography, The University of Idaho, 2009-Present

Graduate Student Representative for the Graduate Program Committee, the Department of Geography, The Pennsylvania State University, 2008-2009

Graduate Student Representative to the Department of Geography, The Pennsylvania State University, 2008

Graduate Student Mentor Committee Member for the Department of Geography, The Pennsylvania State University, 2007

Graduate Student Representative for the Graduate Program Committee, the Department of Geography, The Pennsylvania State University, 2006-2007

Department of Geography Representative to the Earth and Mineral Science Graduate Student Advisory Committee, The Pennsylvania State University, 2005-2007

Graduate Student Mentor Committee Member for the Department of Geography, The Pennsylvania State University, 2006

Graduate Student Representative to the Department of Geography, The Pennsylvania State University, 2005-2006

Graduate Student Representative for the Coffee Hour Committee, the Department of Geography, The Pennsylvania State University, 2005-2006

Graduate Student Representative for the Curriculum Committee, the Department of Geography, The Pennsylvania State University, 2004-2005

Current Graduate Student Advisees

Joy Campbell MS Kyle Parker MS Courtney Thompson MS

Michele Vachon PhD Aparna Kumari PhD

Graduated Student Advisees

Danielle Butsick MS Monica Walker MS

Service as Committee Member

Kevin Kingsbury MS Jalal Jahir MS Daniel Callister MS

Professional Associations

Association of American Geographers

- Coastal and Marine Specialty Group
- Geographic Information Science and Systems Specialty Group
- Hazards Specialty Group
- Human Dimensions of Global Change Specialty Group
- Transportation Specialty Group
- Urban Geography Specialty Group

European Geosciences Union