

THOMAS W. CRAWFORD

Department of Geography
East Carolina University
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EMPLOYMENT

- Assistant Professor of Geography, East Carolina University** **August 2003 – present**
- *Specialties:* Geographic Information Science, Population-Environment, Landscape Analysis, Complexity Studies
- Assistant Professor of Environmental Studies and Geography, Gettysburg College** **August 2000 – 2003**

EDUCATION

- Department of Geography, University of North Carolina, Chapel Hill, NC**
- Ph.D., Geography** **August 2000**
- *Dissertation:* “Human-Environment Interactions and Regional Change in Northeast Thailand: Relationships Between Socio-Economic, Environmental, and Geographic Patterns.”
- M.A., Geography** **December 1994**
- *Thesis:* “Riding into America on the TransAmerica Bicycle Trail:
- Wake Forest University, Winston-Salem, NC**
- B.S., Mathematical Economics** **May 1988**

GRANTS AND FELLOWSHIPS

- **North Carolina Sea Grant College**, \$69,823, “Linking Demographic Patterns of Landscape Indicators of Coastal Development,” 2006-2008, principal investigator.
- **Faculty Senate Research and Creative Activity Grant**, research leave, “Spatial Analysis of Community-Based National Forest Planning in Southwest Colorado,” East Carolina University, 2006 (spring), principal investigator.
- **ECU Division of Research and Graduate Studies**, \$30,000, “Spatial, Environmental and Behavioral Determinants of Valuation of Coastal Erosion Risk,” East Carolina University, 2005-2006, co-investigator.
- **ECU Student Computing and Technology Innovative Project**, \$10,000, “Establishment and Enhancement of Distance Education in Geographic Information Science,” East Carolina University, 2005-2007, principal investigator.
- **Glenmary Research Center**, \$2,153, “Diocesan Mapping Project,” 2004, principal investigator.
- **National Science Foundation, Course Curriculum and Laboratory Improvement**, \$47,796, “Integrating Spatial Information Technologies into the Environmental Studies Curriculum,” NSF-0088403, 2000-2003, principal investigator.
- **Community-Based Collaboratives Research Consortium**, \$10,000, “A Longitudinal and Spatial Analysis of Intermediate Socio-Environmental Impacts of Community-Based Collaborative Planning in Southwest Colorado,” 2002-2003, co-investigator.

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- **Gettysburg College Presidential Research Fellowship**, \$10,000, “Spatial Analysis of Coupled Natural and Human Systems in Coastal Maine,” 2002-2003, co-investigator.
- **Pre-doctoral Fellowship, Carolina Population Center**, University of North Carolina-Chapel Hill, 1997-1999.
- **Smith Graduate Research Grant**, 1999. University of North Carolina-Chapel Hill, \$500.

AWARDS

- **Best Paper**, Ph.D. Student Honors Competition, 1999 Annual Meeting of the Association of American Geographers Southeastern Division, “Use of an Integrated GIS to Analyze the Impact of Population Change on Forest Biomass Change in Northeast Thailand,” \$200.
- **First Place Award**, Student Paper Competition of the GIS Specialty Group of the Association of American Geographers, 1999 Annual Meeting of the Association of American Geographers, “Spatial Modeling of Population-Environment Linkages and Biophysical Profiles in Northeast Thailand,” \$1,000.

TEACHING EXPERIENCE

Introduction to Geography (ECU and Gettysburg College)
World Regional Geography (UNC-Chapel Hill)
Introduction to Geographic Information Systems (Gettysburg College and UNC-Chapel Hill)
Geographic Information Systems I (ECU)
Geographic Information Systems II (ECU)
Environmental Applications of Geographical Information Systems (Gettysburg College)
Human Dimensions of Environmental Change, Senior Seminar (Gettysburg College)
Graduate Seminar on Geographic Information Science (ECU)

PUBLICATIONS IN PROGRESS

Curtis, S., **T.W. Crawford**, S.A. Lecce, (accepted). TRMM Estimation of Hurricane Floyd: a comparison to other basin-scale estimates during the 1999 Hurricane Floyd flood. *Natural Hazards*.

Crawford, T.W., (initial review, revisions in progress). Trajectories of residential development and coastal sprawl in North Carolina, 1971-2000: an analytical approach using parcel data and GIS techniques. *Landscape and Urban Planning*.

Wilson, R.K., and **T.W. Crawford**, (initial review, revisions in progress). Tracking collaborative forest planning and local socio-environmental relations in southwestern Colorado. *The Professional Geographer*.

Bin, O., **T.W. Crawford**, J. Kruse, and C. Landry, (initial review, revisions in progress). Flood prone with a view: coastal housing market response to risk and amenity. *Land Economics*.

Crawford, T.W., O. Bin, J. Kruse, and C. Landry, (submitted). Time-varying viewshed measures and impacts on hedonic pricing models: a case study of ocean view in beach communities. *International Journal of Geographical Information Science*.

PUBLICATIONS IN PRINT

Crawford, T.W., J.A. Commito, and A.M. Borowik, 2006. Fractal characterization of *Mytilus edulis* L. spatial structure in intertidal landscapes using GIS methods. *Landscape Ecology* 21: 1033-1044.

O'Sullivan, D, Manson, S.M., Messina, J.P., and **T.W. Crawford**, 2006. Space, place, and complexity science (guest editorial). *Environment and Planning A* 38: 611-617.

Crawford, T.W. 2006. Polygon-to-polygon spatial accessibility using different aggregation approaches: a case study of national forests in the US Mountain West region. *Transactions in GIS* 10(1): 121-140.

Crawford, T.W. 2005. Spatial fluctuations as signatures of self-organization: a complex systems approach to landscape dynamics in Rondonia, Brazil. *Environment and Planning B* 32: 857-875.

Crawford, T.W., Messina, J.P., Manson, D., and O'Sullivan, D., 2005. Complexity science, complex systems, and land use research (guest editorial). *Environment and Planning B* 32: 792-798.

Crawford, T.W., and R.K. Wilson, 2005. Multi-scale analysis of collaborative national forest planning contexts in the rural US Mountain West. *Population and Environment* 26: 397-426.

Crawford, T.W., 2005. Stability and change on the American religious landscape: a centographic analysis of major U.S. religious groups. *Journal of Cultural Geography* 22(2): 51-86.

Walsh, S.J., K. A. Crews-Meyer, **T.W. Crawford**, and W. F. Welsh, 2004. Population and environment interactions: spatial considerations in landscape characterization and modeling. In, *Scale and Geographic Inquiry: Nature, Society and Methods*, edited by R. McMaster and E. Sheppard. Blackwell Publishers, p. 41-65.

Wilson, R.K., and **T.W. Crawford**, 2003. A longitudinal and spatial analysis of intermediate socio-environmental impacts of community-based collaborative planning on the San Juan National Forest. *Proceedings of the Community-Based Collaboratives Research Consortium Conference*, Salt Lake City Utah, September 14-16, <http://www.cbrc.org/events.html>.

Crawford, T.W., 2002. Spatial modeling of village functional territories to support population-environment linkages in northeast Thailand. In, *Linking People, Place, and Policy: A GIScience Approach*, edited by S.J. Walsh and K.A. Crews-Meyer. Norwell, MA: Kluwer Academic Publishers, pp. 91-111.

Rindfuss, R.R., B.E. Entwisle, S.J. Walsh, P. Prasakurtl, Y. Sawangdee, **T.W. Crawford**, and J. Reade, 2002. Continuous and discrete: where they have met in Nang Rong, Thailand. In, *Linking People, Place, and Policy: A GIScience Approach*, edited by S.J. Walsh and K.A. Crews-Meyer. Norwell, MA: Kluwer Academic Publishers, pp. 7-37.

Walsh, S.J., **T.W. Crawford**, W.F. Welsh, and K.A. Crews-Meyer, 2001. A multi-scale analysis of LULC and NDVI variation in Nang Rong district, northeast Thailand. *Agriculture, Ecosystems, and Environment*, 85: 47-64.

Walsh, S.J., K.A. Crews-Meyer, **T.W. Crawford**, W.F. Welsh, and R.R. Rindfuss, 2001. Patterns of change in land use, land cover, and plant biomass: separating intra- and inter-annual signals in monsoon-driven northeast Thailand. In, *GIS and Remote Sensing and Applications in Biogeography and Ecology*, edited by A.C. Millington, S.J. Walsh, and P.E. Osborne, Boston: Kluwer Academic Publishers, pp. 91-108.

Crawford, T.W., K.A. Crews-Meyer, and S.J. Walsh, 1999. Instructional technologies and the Internet: Options and possibilities for geographic information science education. *Geocarto International*, 14(2): 75-82.

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Crawford, T.W., 1999. A comparison of region building methods used to examine human-environment interactions in Nang Rong District, Northeast Thailand. *Papers and Proceedings of the Applied Geography Conferences*, 22: 366-373.

Gesler, W. M., S. J. Walsh, **T.W. Crawford**, P. S. Wittie, and T. C. Ricketts, 1995. Analysis of hospital service areas in Charlotte-Mecklenburg region of North Carolina, USA through GIS approaches. *Proceedings, CREDES, Hospitals and the Geography of Health Care*, Paris, France, 85-99.

Walsh, S. J, W. M. Gesler, P. H. Page, and **T.W. Crawford**, 1995. Health care accessibility: Comparison of networks and indices of hospital service areas. *Proceedings, LIS/GIS '95*, Nashville, TN, 2: 994-1005.

Palka, E. J., and **T.W. Crawford**, 1994. North Carolina: Natural nidus for Rocky Mountain Spotted Fever. *The North Carolina Geographer*, 3(summer): 1-16.

SCHOLARLY PRESENTATIONS

Crawford, T.W., 2006. Inland coastal boom? random and systematic land cover transitions in the Inner Banks, 1992-2001. Annual Meeting of the Association of American Geographers Southeastern Division, Morgantown, WV.

Bin, O., **T.W. Crawford**, J. Kruse, and C. Landry, 2006. Valuing spatially integrated amenities and risk in coastal housing markets. The Third World Congress of Environment and Resource Economists, Kyoto, Japan.

Crawford, T.W., 2005. Time-space characterization of residential development in a coastal setting. Annual Meeting of the Association of American Geographers Southeastern Division, West Palm Beach, FL.

Bradley, D., and **T.W. Crawford**, 2005. Exploring the potential impacts of later-life migration in coastal regions: land use in New Hanover County, North Carolina. Annual Meeting of the Gerontological Society of America, Orlando, FL.

Bradley, D, and **T.W. Crawford**, 2005. Changing coastal demographic profiles and the creation of multiple use zones. Conference on Social Science Issues, Traditional Fishing Communities: Past, Present, and Future, Greenville, NC, March 18.

Crawford, T.W., 2005. Fractal characterization of suburban residential development in Montgomery County, Maryland, 1950-2000. Annual Meeting of the Association of American Geographers, Denver, CO.

Crawford, T.W., 2004. Coastal exposure estimation using viewshed analysis techniques. Poster presented at Annual Meeting of the Association of American Geographers Southeastern Division, Biloxi, MS.

Crawford, T.W., 2004. GIS and landscape approaches to coastal restoration. Coastal Ecosystem Restoration Workshop, Greenville, NC, September 18.

Crawford, T.W., and R.K. Wilson, 2004. County-level measures of spatial accessibility to national forests in the US Mountain West. Poster presented at Annual Meeting of the Association of American Geographers, Philadelphia, PA.

Wilson, R.K., and **T.W. Crawford**, 2004. Tracking collaboration: a longitudinal assessment of community-based planning on the San Juan National Forest, Colorado. Annual Meeting of the Association of American Geographers, Philadelphia, PA.

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Wilson, R. W., and **T.W. Crawford**, 2003. A longitudinal and spatial analysis of intermediate socio-environmental impacts of CBC planning in SW Colorado. Community-Based Collaboratives Research Consortium Conference, SnowBird Resort and Conference Center.

Crawford, T.W., 2003. Signatures of complexity: Spatio-temporal dynamics of land cover patterns for coupled natural-human systems. Annual Meeting of the Association of American Geographers, New Orleans, LA.

Borowik, A, and **T. W. Crawford**, 2003. Multi-scale characterization of mussel bed structure in coastal Maine: a GIS approach. Poster presented at 32nd Annual Benthic Ecology Meeting, Groton, CT.

Crawford, T.W., 2002. Spectral analysis of forest cover patterns in Rondonia, Brazil: Evidence for biocomplexity in a coupled natural-human system. Annual Meeting of the Association of American Geographers Southeastern Division, Richmond, VA.

Crawford, T.W., 2002. Conceptualizing and quantifying land use complexity. Annual Meeting of the Association of American Geographers, Los Angeles, CA.

Crawford, T.W., 2001. Spatial complexity, pattern metrics, and land use. Annual Meeting of the Association of American Geographers Southeastern Division, Lexington, KY.

Crawford, T.W., 2001. Spatially explicit indicators of landscape fragmentation. Poster presented at Annual Meeting of the Association of American Geographers, New York, NY.

Crawford, T.W., 2001. Teaching GIS, teaching with GIS, and bringing spatial data into the classroom. Instructional Technology Support Conference, Gettysburg College.

Crawford, T.W., 2000. Integration of demographic data with GIS and remotely sensed data to support a village-level analysis of Nang Rong District, Northeast Thailand. Annual Meeting of the Association of American Geographers, Pittsburgh, PA.

Walsh, S. J., **T.W. Crawford**, K.A. Crews-Meyer, and W.F. Welsh, 1999. Scale dependent relationships in northeast Thailand: NDVI variation as a function of biophysical, social, and geographical factors and their influence on landscape form and function. An International Workshop, "Current Progress in Quantifying Spatially-Explicit Causes and Effects of Land-Use/Cover Change: Examples From Different Parts of the World," Wageningen, The Netherlands.

Crawford, T.W., 1999. Use of an integrated GIS to analyze the impact of population change on forest biomass change in northeast Thailand. Annual Meeting of the Association of American Geographers Southeastern Division, Tampa, FL.

Crawford, T.W., 1999. A comparison of region building methods used to examine human-environment interactions in Nang Rong District, Northeast Thailand. Applied Geography Conference, Charlotte, NC.

Rindfuss, R.R., B. Entwisle, S. J. Walsh, **T.W. Crawford**, and Y. Sawangdee, 1999. A comparison of spatially explicit methods for relating household census data to field plots in rural Thailand. Third Open Meeting of Human Dimensions of Global Change Community, Shonan Village, Japan.

Crawford, T.W., 1999. Spatial modeling of population-environment linkages and biophysical profiles in northeast Thailand. Annual Meeting of the Association of American Geographers, Honolulu, HI.

Crawford, T.W. and S. J. Walsh, 1998. Social, spatial, and biophysical domains: village associations in northeast Thailand. Annual Meeting of the Association of American Geographers, Boston, MA.

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Walsh, S.J. and **T.W. Crawford**, 1997. The future of mapping. Conference on the Southeast in Early Maps, University of North Carolina, Chapel Hill, NC.

Crawford, T.W., 1997. The meaning of pilgrimage in the United States. Annual Meeting of the Association of American Geographers, Forth Worth, TX.

Crawford, T.W., 1996. Network analysis and hospital use indices: Approaches for assessing health care accessibility. North Carolina Geographic Information Systems Conference, Winston-Salem, NC.

Crawford, T.W., 1996. Social space and therapeutic places on the Internet: a Multiple Sclerosis listserver. Meeting of the Association of American Geographers Southeastern Division, Athens, GA.

Crawford, T.W., W. M. Gesler, S. J. Walsh, and P. H. Page, 1996. Approaches for assessing health care accessibility within a GIS environment. Annual Meeting of the Association of American Geographers, Charlotte, NC.

Gesler, W.M., S.J. Walsh, **T.W. Crawford**, P.S. Wittie, and T.C. Ricketts, 1995. Analysis of hospital service areas in the Charlotte-Mecklenburg region of North Carolina, USA through GIS approaches. CREDES, Hospitals and the Geography of Health Care, Paris, France.

Walsh, S.J., P. Wittie, **T.W. Crawford**, and P. Page, 1995. Health care planning and the spatial perspective within a GIS environment. Carolinas Medical Center, Charlotte, North Carolina.

Wittie, P.S., **T.W. Crawford**, S.J. Walsh, and W.M Gesler, 1995. Delineating health service areas using a geographic information system. Annual Meeting of the Association of American Geographers, Chicago, IL.

OTHER PRESENTATIONS, WORKSHOPS, AND INVITED LECTURES

Crawford, T.W., 2005. Geographic information science at East Carolina University's Department of Geography. Poster presented at NCGIS 2005 Conference, Winston-Salem, NC, March 3-4.

Crawford, T.W., 2004. Geographic approaches to coastal land use and cover change. For, CRM 6100: Introduction to Coastal Problems, East Carolina University, September 10.

Crawford, T.W., 2004. GIS workshop on computer applications in public administration. For, PADM 6260: Computer Applications in Public Administration, East Carolina University, April 13.

Crawford, T.W., 2004. GIS workshop. For, American Fisheries Society, East Carolina University Chapter, March 26.

Crawford, T.W., 2004. An overview of GIS. For, ECON 3323: Seminar in Regional Analysis, East Carolina University, February 13.

Crawford, T.W., 2004. An overview of geographic information systems. Presented to a Visiting Delegation from the Urals Academy of Public Administration (Yekaterinburg, Russia), Greenville, NC.

Crawford, T.W., 2003. The integrative power of GIS. Keynote speaker at GIS Day Celebration, East Carolina University, November 19.

Crawford, T.W., J. Commito, and R. Wilson, 2002. Geographic Information Systems and Environmental Studies at Gettysburg College. Fall Meeting of the Gettysburg College Board of Trustees.

Crawford, T.W., S. Italiano, and W. Hunter, 2002. Geographic Information Systems and the Gettysburg College Curriculum. Gettysburg College Science Advisory Committee Meeting.

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Crawford, T.W., 1999. Spatial linkage of social and environmental data to assess regional development patterns in Nang Rong District, Northeast Thailand. Invited talk at the Carolina Population Center, University of North Carolina, Chapel Hill, NC.

Crawford, T.W., 1998. Spatial linkage of rural households to farm plots: results from fieldwork in rural Thailand. Brown Bag Speaker Series of the Department of Geography, University of North Carolina, Chapel Hill, NC.

Crawford, T.W., 1998. Portraits of sacred landscapes: a comparison of Catholic pilgrimage shrines in Conyers, Georgia and Golden, Colorado. Brown Bag Speaker Series of the Department of Geography, University of North Carolina, Chapel Hill, NC.

DEPARTMENTAL AND UNIVERSITY SERVICE

Co-director, Center for Geographic Information Science, Fall 2006 - present, East Carolina University
Coordinator, Spatial Analysis Lab, Fall 2003 – present, Geography, East Carolina University
Coordinator, GIScience Certificate Program, Fall 2003 – present, Geography, East Carolina University
Member, Advisory Committee, Fall 2006 – Spring 2007, Geography, East Carolina University
Member, Graduate Committee, Fall 2006 - present, Geography, East Carolina University
Member, Curriculum Committee, Fall 2006 – present, Geography, East Carolina University
Chair, Search Committee, 2006 – GIScience position, East Carolina University
Member, Undergraduate Committee, Fall 2003 – Spring 2006, Geography, East Carolina University
Member, Social Committee, Fall 2003 – Spring 2006, Geography, East Carolina University
Member, Search Committee, 2005 - landscape ecologist position, East Carolina University
Director, Gettysburg College GIS Lab, 2000 – 2003, Gettysburg College
Acting Department Co-chair, Spring 2001, Dept. of Environmental Studies, Gettysburg College
Information Resources Advisory Committee, 2001 – 2003, Gettysburg College
Information Technology Liaison, 2001 – 2003, Dept. of Environmental Studies, Gettysburg College
Faculty Advisor, 2001-2002, Science Theme House, Gettysburg College
Colloquium Series Chairperson, 1996-1997, Department of Geography, UNC-Chapel Hill
Graduate Representative, 1994-1995, Department of Geography, UNC-Chapel Hill

JOURNAL AND PROPOSAL REVIEWS

National Science Foundation, proposal review, 2002, 2005.

Canadian Geographer

Environmental Management

Environment and Planning A

Environment and Planning B

Geocarto International

Journal of Geography

Land Degradation and Society

North Carolina Geographer

Photogrammetric Engineering & Remote Sensing

Plant Ecology

Population and Environment

Southeastern Geographer

OTHER SERVICE AND ACTIVITIES

Panelist, 'Unifying Themes and Issues in AAG Biogeography', Annual Meeting of the Association of American Geographers, Denver, CO, April, 2005.

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Session Co-organizer, 'Geographical Perspectives on Complex Systems II', Annual Meeting of the Association of American Geographers, Philadelphia, PA, March 2004.

Session Chair, 'Geographical Perspectives on Complex Systems I', Annual Meeting of the Association of American Geographers, Philadelphia, PA, March 2004.

Paper Discussant, Southeast Division of the Association of American Geographers Annual Meeting, Biloxi, MS, November 2004.

Faculty Judge, 2001 Student Poster Competition of the Remote Sensing Specialty Group (AAG).

GIS Election Mapping Analyst, 1993, Office of Chancellor, UNC-Chapel Hill.

UNDERGRADUATE AND GRADUATE ADVISING

B.A. (Environmental Studies, Gettysburg College)

Ann Borowik (advisor, honors thesis, 2003)
Wendy Dow (committee, honors thesis, 2003)
Ben Grupe (committee, honors thesis, 2003)

M.A. (Geography, East Carolina University)

Phil Sullivan (committee, non-thesis, 2004)
Brian Chambers (advisor, thesis, 2005)
Joseph Luchette (advisor, non-thesis, 2006)
Joe Mangum (committee, non-thesis, 2006)
Matt Mitchelson (committee, thesis, 2005)
Kate Straford (committee, thesis, current)
Faith Stuart (committee, thesis, current)
William Suvak (advisor, thesis, 2006)
Timothy Tresholavy (advisor, thesis, 2006)
Sallie Vaughan (advisor, thesis, current)

Ph.D. (Coastal Resources Management, East Carolina University)

Greg Meyer (committee, current)
Christopher Moore (committee, current)
Ahmed Salahuddin (committee, current)

Ph.D. (Brody School of Medicine, East Carolina University)

Jason Brown (committee, current)

MEMBERSHIPS

Association of American Geographers (AAG)
GIS Specialty Group of the AAG
Remote Sensing Speciality Group of the AAG
Population Geography Specialty Group of the AAG
Human Dimensions of Global Change Specialty Group of the AAG
Southeastern Division, Association of American Geographers
North Carolina Geographical Society

