

Ryan W. Kirk

Assistant Professor
Elon University

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EDUCATION

- Ph.D. 2009 University of Minnesota, Natural Resources Science and Management**
Dissertation: Land-use and carbon in the Southern Appalachian Mountains, 1850-2030: a historical reconstruction and synthesis study.
- M.S. 2005 University of Minnesota, Forestry**
Thesis: Applying regional-scale ecosystem process models in northeastern Minnesota.
- B.S. 1996 William Jewell College, Management Information Systems & Business Administration**

PROFESSIONAL EXPERIENCE

- 2009 – Present *Assistant Professor* **Elon University, Elon, NC**
Joint appointment: Department of History and Geography, Department of Environmental Studies.
Courses taught: World Regional Geography, Geography of North America, Environmental History, Introduction to GIS, GIS and Government Applications, Water Resource Management, Strategies for Environmental Inquiry.
Average student evaluation rating across all sections: 5.57/6.0
- 2008 – 2009 *Instructor* **Elon University, Elon, NC**
- 2006 – 2007 *Adjunct Instructor* **Gustavus Adolphus College, St. Peter, MN**
Taught Introduction to GIS and Applied GIS courses in the Geography Department.
- 2000 – 2008 *Graduate Assistant* **Department of Forest Resources, University of Minnesota**
Teaching assistant for the following courses: Problem Solving in Natural Resources using GIS (Fall semesters, 2003-2007), Introduction to GIS in Natural Resources (Fall semesters, 2000-2002), Measuring Forest Resources (Summers, 2001-2003), Forest Assessment and Modeling (Spring semester, 2001)
- Research assistant for projects using GIS for forest ecology and resource management. Two primary projects were 1) analyzing land use change in the Southern Appalachian Mountains as part of NSF-funded Coweeta LTER program grant and a NASA LCLUC program grant, and 2) developing GIS databases in collaboration with U.S. Fish and Wildlife Service to aid long-term conservation planning for National Wildlife Refuges.
- 1996 – 1999 *Senior Programmer/Analyst* **Decision Systems, Inc., Minneapolis, MN**
Programmed accounting software in the finance industry. Job required regular interaction with local and international customers to determine and implement software needs.

PUBLICATIONS

- 2013 Kapfer, Joshua M., David J. Munoz, John D. Groves, and Ryan W. Kirk. Home range and habitat selection of the Eastern Box Turtle (*Terrapene Carolina*) in the Piedmont of North Carolina. *Herpetology Notes*. 6: 251-260.
- 2012 Kapfer, Joshua M. and Ryan W. Kirk. Camera Trap Observations of Gray Foxes (*Urocyon cinereoargenteus*) in a Suburban Landscape in the Piedmont Region of North Carolina (USA). *Southeastern Naturalist*. 11(3): 507-516.
- 2012 Kirk, Ryan W., Paul V. Bolstad, and Steven M. Manson. Spatio-temporal trend analysis of long-term development patterns (1900-2030) in a Southern Appalachian County. *Landscape and Urban Planning*.

- 2011 Kirk, Ryan W. Book Review of *Managing the Mountains: Land Use Planning, the New Deal, and the Creation of a Federal Landscape in Appalachia* by Sara M. Gregg. *Virginia Magazine of History and Biography*. Vol. 119:3.
- 2011 Ryan W. Kirk, John Hendrickson, Taylor Jones, Joseph "Will" Misko, Roger Black, Michael Nachajski, Kate Crissman and Sam Shoge. A Geospatial User Study of Visitors to Parks in Alamance County, NC. Commissioned by the Alamance County Recreation and Parks Department.
- 2010 Jordan Lerew, Jared Balavender, Vince Barrett, Alison Brooks, Louis Tambellini, Michael Warren, Zachary Widdoss, Robert Cavaliere, Avery Goldman, and Ryan Kirk. A stakeholder analysis for water quality improvements in the Little Alamance Creek watershed. Technical report contributed to the Piedmont Triad Council of Governments 2009 NC Division of Water Quality 205(j) grant entitled: Little Alamance Restoration Alliance.
- 2009 Tanner, Dawn, and Ryan Kirk. Matrix to Mosaic: Habitat fragmentation from 1982-1999 in Sabah, Malaysian Borneo. *Borneo Research Bulletin*. 39: 255-268.
- 2009 Ryan W. Kirk and Sam T. Shoge. Mapping the Annexation History of the City of Burlington, NC, 1866-2008. Commissioned by the City of Burlington Planning Department.
- 2004 Kirk, Ryan W., and Thomas E. Burk. Regional-Scale forest production modeling using process-based models and GIS. In: SoFor GIS 2004: Proceedings of the 4th Southern Forest and Natural Resources Geographic Information Systems Conference. Athens, GA.
- 2001 Mack, Timothy J., Chad W. Skally, Ryan W. Kirk, and Thomas E. Burk. Testing variable radius forest plot sampling methods using a stochastic simulation model. Minnesota Agricultural Experiment Station report no. 994420149. St. Paul, MN.
- 2000 Kirk, Ryan W., Thomas E. Burk, Paul V. Bolstad, and John H. Schomaker. Construction of a Geographic Information System for Wildlife Planning: Swan Lake National Wildlife Refuge. Minnesota Agricultural Experiment Station report no. 994420137. St. Paul, MN.

PRESENTATIONS & POSTERS

- 2013 Ma, Patrick T. and Ryan W. Kirk. Effects of parcelization on land cover in Alamance County, North Carolina. Annual Meeting of the Ecological Society of America. Minneapolis, MN.
- 2013 Conroy, Kristen M. and Ryan W. Kirk. Sensitivity analysis and field validation of the Jordan Lake Stormwater Nutrient Load Accounting Tool in a Piedmont Watershed. Water Resources Research Institute Annual Conference. Raleigh, NC.
- 2011 Kirk, Ryan W. Agricultural site suitability as a biophysical driver of land use change in the Southern Appalachian Mountains. Annual Meeting of the Southeastern Division of the Association of American Geographers (SEDAAG). Savannah, GA.
- 2011 Kirk, Ryan W. Deliverance from Cold Mountain: where ethics meets geography in explaining the historic development of Southern Appalachia. Elon University Emersonian Society.
- 2010 Kirk, Ryan W. New opportunities for geographic research in NC using current and historic parcels data. North Carolina Property Mappers Association. Greensboro, NC.
- 2009 Kirk, Ryan W. and Paul V. Bolstad. Land use and terrestrial carbon accrual in Western North Carolina, 1850-2030. Southern Appalachian Biosphere and Man Conference, Asheville, NC.
- 2009 Kirk, Ryan W. Opening the Appalachians: 200 years of transportation changes in Western North Carolina. North Carolina GIS Conference, Raleigh, NC.
- 2007 Kirk, Ryan W., and Paul V. Bolstad. Land-use change and natural disturbance effects on carbon budgets in the Southern Appalachian Mountains. 2007. Annual Meeting of the American Association of Geographers. San Francisco, CA.
- 2006 Kirk, Ryan W., and Paul V. Bolstad. (Poster) Mapping forest disturbance history in the Southern Appalachian Mountains using multi-scale remote sensing and terrain models. LTER All Scientists Meeting. Estes Park, CO.

- 2006 Kirk, Ryan W. Modeling decadal land use patterns in Macon County, NC, from 1885-2035. University Consortium of Geographic Information Science Summer Assembly. Vancouver, WA.
* *Best Student Presentation Award*
- 2005 Kirk, Ryan W., and Paul V. Bolstad. (Poster) Quantifying land use change trajectories in Macon County, NC, since 1900. Coweeta Annual Meeting and Mid-Cycle Review, Franklin, NC.
- 2004 Kirk, Ryan W., Paul V. Bolstad, Andrew C. Jenks, Ling Teng, and Mark S. Riedel. (Poster) A century of land use change in the southern Appalachian Mountains. SoFor GIS conference, Athens, GA.
- 2003 Kirk, Ryan W., and Paul V. Bolstad. Errors and error propagation associated with land use/land cover data in GIS analyses. 13th annual Minnesota GIS/LIS Consortium conference, St. Paul, MN.
- 2003 Kirk, Ryan W., and Paul V. Bolstad. (Poster) Land use and Water in the Uplands of Southeastern North America. NASA Land Cover Land Use Change (LCLUC) Program Science Team Meeting. Baltimore, MD.
- 2002 Kirk, Ryan W., and Paul V. Bolstad. Quantifying the effects of spatial scale and aggregation on GIS representation of forest landscape patterns. 12th annual Minnesota GIS/LIS Consortium conference, Duluth, MN.
- 2001 Kirk, Ryan W., and Thomas E. Burk. Regional-scale forest growth modeling using GIS and remote sensing technologies. 11th annual Minnesota GIS/LIS Consortium conference, Duluth, MN.

CARTOGRAPHIC PRODUCTS IN SUPPORT OF RESEARCH AND OUTREACH

- 2012 Reference map of the Gold Coast Colony, Africa. *Primary reference map for the journal article: Johnson, Amy. 2012. Slavery on the Gold Coast and African Resistance to Slavery in Jamaica during the Early Colonial Period. Limina: A Journal of Historical and Cultural Studies. 18: 1-15.*
- 2011 Map of historic sites in the Southeastern U.S. *Support map for the conference presentation: Troxler, Carole. Cornwallis's Complaints and the Historical Memory of Loyalist Response in the Southern Backcountry Presentation to the annual meeting of the Canadian Historical Association, Congress Canada, May 2011, Fredericton, New Brunswick.*
- 2010 Map of State Population Below Poverty Line, 2004-5. *Primary reference map for the book: Kirk, Jason A. 2010. India and the World Bank. Anthem Press: London. 304 p.*
- 2009 Annexation History of Burlington, NC, 1885-2009. *Wall map on display in Burlington City Hall and used in multiple planning-department meetings. Created with student Sam Shoge ('11).*
- 2001 Minnesota Section of the North Country National Scenic Trail. *Wall map used for multiple educational, fundraising and advocacy meetings for the North Star Chapter of the North Country Trail Association.*
- 2000 Damage map of the 1999 Blowdown in the Boundary Waters Canoe Area Wilderness. *Wall map displayed at the Bloomington, MN, REI store and various educational events following major storm damage over 600 square miles of the National Wilderness Area.*
- 2000 Sioux-Hustler Hiking Trail brochure map, Boundary Waters Canoe Area Wilderness. *Map used in tri-fold brochure. Over 3,000 copies printed and distributed.*

UNDERGRADUATE MENTORING PRODUCTS

- 2013 **Lauren Hoerr** ('13): Technical Report provided to the Alamance County GIS Manager and the Healthy Alamance Partnership titled: "Inventory and Analysis of Sidewalks in Alamance County."
- 2013 **Alley Morris** ('13): Technical Report provided to park managers titled: A geospatial user study of visitors to Rock Creek Park and the Meadowbrook Stables, MD.

- 2013 **Kristen Conroy** ('13): Honors Thesis titled: Nutrient Retention Monitoring and Modeling of a Suburban Stormwater Detention Basin, Burlington, North Carolina. SURF Presentation. NCUR Presentation. WRII Conference Presentation.
- 2012 **Lauren Remenick** ('12): Vision's magazine article titled: The Dust Bowl Down Under: Southeastern Australia's Water Crisis.
- 2012 **Patrick Ma** ('12): 1) (Co-mentored with David Vandermast): SURF presentation titled: "A Comprehensive Analysis and Baseline Study of the Plants in Elon Forest." 2) 2013 Ecological Society of America Annual Conference Poster titled: Effects of parcelization on land cover in Alamance County, North Carolina.
- 2011 **David Munoz** ('11) (Co-mentored with Josh Kapfer): Mentored GIS analysis portion of a manuscript accepted to peer-review journal: "Home range and habitat selection of the Eastern Box Turtle (*Terrapene Carolina*) in the Piedmont of North Carolina."
- 2011 **Sam Shoge** ('11): 1) Annexation History Map for City of Burlington; 2) SURF and NC GIS Conference (Herb Stout Student Award Winner) presentations entitled "The impacts of impervious surface changes on water quality in Alamance County, 1984-2010"
- 2010 **John Hendrickson** ('12), **Taylor Jones** ('11), **Joseph "Will" Misko** ('12), **Roger Black** ('11), **Michael Nachajski** ('11), **Kate Crissman** ('11) and **Sam Shoge** ('11). Technical Report for Alamance County Recreation and Parks Department entitled: "A Geospatial User Study of Visitors to Parks in Alamance County, NC."
- 2010 **Jordan Lerew** ('10), **Jared Balavender** ('11), **Vince Barrett** ('11), **Alison Brooks** ('10), **Louis Tambellini** ('11), **Michael Warren** ('11), **Zachary Widdoss** ('11), **Robert Cavaliere** ('12), and **Avery Goldman** ('10). Technical report for the Piedmont Triad Council of Governments Water Quality Group entitled: "A stakeholder analysis for water quality improvements in the Little Alamance Creek watershed."
- 2009 **Katrina Folsom** ('09): Honors Fellow. 1) Visions Magazine article entitled "Water Use and Conservation in North Carolina. 2) NCUR and SURF presentations entitled "Residential water use and conservation in North Carolina: Patterns and Policies."
- 2008 **John Koenigs**, University of Minnesota. MGIS annual poster session. Land use and biophysical characteristics of watersheds in the Southern Appalachian Mountain region.
- 2007 **William "Kyle" Chester**, Gustavus Adolphus College. MN GIS/LIS Conference poster presentation entitled: "Evaluating vegetation buffers along drainage ditches in the Middle Minnesota River Watershed"
- 2006 **Christopher Pinahs, Brett Haukedahl, and Julia Anderson**. Gustavus Adolphus College. Report and geospatial data set provided to non-profit group entitled: Developing a GIS for the Ney Environmental Learning Center, Henderson, MN.

GRANTS

- 2013 CATL Development Grant (\$1,848): Hydrologic monitoring in the Elon University Forest as a field-based learning framework
- 2012 Elon College Fund for Excellence Grant (\$1,650): Elon's Eco-Hub: interdisciplinary teaching and research on the Loy property
- 2011 Elon Summer Faculty Fellowship (\$8,000): Reconstructing historic agriculture patterns in the Southern Appalachian Mountains
- 2011 Elon Associate Provost Grant for Faculty Development (\$10,724): Establish infrastructure and baseline vegetation surveys in the Elon University Forest
- 2010 CATL Development Grant (\$5,200): Creating a new cross-course learning project between Intro GIS and Wildlife Ecology courses
- 2010 Community Partnership Initiative Grant (\$295): Materials to support a user survey of Alamance County Parks in collaboration with the Parks and Recreation Department.
- 2009 Hultquist New Faculty Grant (\$1,300): Parcelization history of Alamance and Macon Counties, NC
- 2006 University Consortium of Geographic Information (UCGA) summer assembly travel grant (\$800): Modeling decadal land use patterns in Macon County, NC, from 1885-2035.

ACADEMIC & PROFESSIONAL AFFILIATIONS

Coweeta Long-Term Ecological Research Site
American Association of Geographers

SERVICE ACTIVITIES

UNIVERSITY

- 2011-present GIS Interdisciplinary Program Coordinator
- Initiated curriculum revision for the GIS minor
 - Expanded program marketing efforts across campus
- 2010-present Elon University Forest Advisory Committee
- Assist with development of the Forest management plan
 - Coordinate all research and teaching projects within the forest
- 2010-2011 Elon University Environmental Fall Forum Planning Committee
- Researched and recruited national speakers
- 2009-present Undergraduate Research Advisory Committee
- Review various scholarship, Spring Undergraduate Research Forum and Summer Undergraduate Research Experience applications
 - Provide feedback as needed to the Undergraduate Research Program Director
- 2009-present Faculty advisor for Gamma Theta Upsilon, the Geography Honor Society
- Assist with coordination of annual initiation dinners
 - Work with national organization for membership updates
- 2009-2010 Service-Learning Faculty Scholar Program
- Attended monthly meetings to learn about and discuss best practices for service-learning projects.
 - Developed a plan for enhancing service-learning in my own courses.
- 2009-2010 Sustainability Faculty Scholar Program
- Participated in a series of discussions and exercises with other faculty to explore aspects of sustainability.
 - Developed plan for incorporating sustainability themes in my own courses.
- 2009 Center for the Advancement and Teaching of Learning
- Co-organized a workshop entitled: "What is Engaged Learning?"
- 2008-2009 Environmental Studies Program Advisory Committee
- Helped prepare the ENS program during its transition from a program to a department.
- 2006-2007 Technology Advisory Committee, College of Natural Resources, University of Minnesota
- Graduate student representative on committee that oversaw technology-related changes in the college.
 - Sought feedback from peer graduate students and summarized opinions.

PROFESSIONAL ORGANIZATIONS

- 2011 NC GIS Conference, Program Committee Member
- Attended 6 meetings for brainstorming and developing conference program
 - Helped identify and recruit conference speakers
- 2006-2008 MN GIS/LIS Consortium, Workshop Instructor
- Designed and delivered 6 introductory and advanced workshops on the Python programming language
- 2006 MN GIS/LIS Conference, Planning Committee Member

- Attended monthly meetings to coordinate conference logistics
- 2005 Open Source Geospatial Conference, A/V Coordinator & Planning Committee Member
- Attended monthly meetings to coordinate conference logistics
 - Organized all A/V equipment and worked with site technical staff during conference
- 2004 American Society of Photogrammetry and Remote Sensing Fall Conference Student Volunteer
- Assisted with various office tasks in running the conference.
- 2003 MapServer User Meeting Conference Organization Committee
- Prepared computer labs for conference workshop
 - Moderated sessions

COMMUNITY

- 2011-present Planning and Zoning Citizen Advisory Board, City of Burlington NC
- Attend monthly meetings to review zoning change requests and vote on them to advise City Commissioners
 - Provide feedback to city planning department on planning initiatives
- 2011-present Alamance County Park Advisory Board
- Attend monthly meetings to provide feedback on county Parks and Recreation Department programs
 - Aid in data collection and research related to Department initiatives
- 1997-2008 Minnesota Parks & Trails Council, Volunteer GIS mapping and trail maintenance
- Led annual trail clearing trips on hiking trails in a national wilderness area
 - Completed annual survey trips to scout damage to hiking trails
 - Helped develop trail brochures and guides
- 1999-2002 North Country National Scenic Trail Association, Volunteer GIS mapping and trail construction
- Member of annual trips to construct new trails
 - GPS collection of new trail lines
 - Made multiple maps for outreach and education mission