

CURRICULUM VITAE

BRADLEY C. RUNDQUIST

CONTACT INFORMATION

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EDUCATION

Ph.D. Geography, Kansas State University, Manhattan. 2000. Dissertation title: Fine-scale spatial and temporal variation in the relationship between spectral reflectance and a prairie vegetation canopy. Advisor: D.G. Goodin
M.A. Geography, Kansas State University, Manhattan. 1995. Thesis title: A reflection of its water: Agricultural land-use change in Finney County, Kansas, 1987-1992. Advisor: M.D. Nellis
B.J. News-Editorial, University of Nebraska, Lincoln. 1991. Completed minors in geography, biology, and Latin

EXPERIENCE

2004-Present **Associate Professor**, Department of Geography, University of North Dakota.
Adjunct Associate Professor, Department of Earth System Science and Policy.
Director, North Dakota View (AmericaView Consortium Associate Member).
 2002-Present **Director**, UND Geographic Information Science Graduate Certificate.
 2000-Present **Director**, Geographic Analysis and Remote Sensing Laboratory.
 2000-2004 **Assistant Professor**, Department of Geography, University of North Dakota.
 1998-2000 **Adjunct Instructor**, College of Technology and Aviation, Kansas State University at Salina.
 1997-2000 **Graduate Research Assistant**, Department of Geography, Kansas State University, Manhattan.
 1997-2000 **Manager**, Remote Sensing Research Laboratory, Department of Geography, Kansas State University, Manhattan.
 1995-1996 **Associate Scientist**, Lockheed Martin Engineering & Sciences Company, NASA Johnson Space Center, Houston, TX.
 1993-1995 **Graduate Teaching Assistant**, Department of Geography, Kansas State University, Manhattan.
 1991-1992 **Assistant City Editor**, *The Messenger* (Daily Newspaper) Fort Dodge, IA.

RESEARCH INTERESTS

- Spatial and temporal variation in vegetation dynamics;
- Vegetation response to climate change;
- Environmental remote sensing and modeling with geographic information systems; and
- Proximal sensing (field spectroscopy).

COURSES TAUGHT

- Global Physical Environment (GEOG 121 at UND)
- Environmental Remote Sensing and Air Photo Interpretation & Lab (GEOG 374/L at UND)
- Biogeography (GEOG 421 at UND)
- Introduction to Geographic Information Systems (GEOG 474 at UND)
- Digital Image Processing (GEOG 475 at UND)
- Advanced Techniques in Geographic Information Systems (GEOG 574 at UND)
- Graduate Seminar in Remote Sensing (GEOG 575 at UND)
- Field Methods in Geography (GEOG 576 at UND)

GRADUATE RESEARCH ADVISED AT UND

• **Completed:**

2004 David A. Brookman, M.S. “Remote Sensing and Predictive Modeling of Saltcedar (Tamarix) in the Northern Great Plains.” Thesis Committee Chair. (Image Analyst, National Geospatial-Intelligence Agency, Washington, D.C.).

2003 Paul R. Sethre, M.S. “Assessing Open Water Expansion from 1991-2002 in the Devils Lake Basin of North Dakota using Subpixel Classification of Remotely Sensed Data.” Thesis Committee Chair. (GIS Analyst, Natural Resources Engineering Company, Superior, WI).

Earl K. Davis, M.S. “Creating a Comprehensive Map of Roatan, Honduras, using GIS.” Independent Study Advisor.

Steven A. Moe, M.S. “Development of an Automated Method to Detect Change in Winter Wheat Acreage using Remotely Sensed Data and GIS.” Independent Study Advisor. (GIS Technician, Earth Tech, Minot, ND).

Casey J. Mutzenberger, M.S. “Application of GIS in the Surveying and Management of Piping Plover and Least Tern.” Independent Study Advisor. (Environmental Scientist II, North Dakota Department of Health, Bismarck, ND).

2002 Nathan F. Smith, M.S. “Imaging Spectrometry to Map Potential Wildfire Fuels in Theodore Roosevelt National Park, North Dakota.” Thesis Committee Chair. (GIS Data Technician, Titan Systems Corporation, Portland, OR).

2001 Heith M. Dokken, M.A. “Remote Sensing of Marijuana: A Preventative Form of Law Enforcement.” Thesis Committee Chair. (Research Engineer, Energy and Environment Research Center, University of North Dakota).

• **In Progress:**

- Charles Geraci, M.S. Geography, Thesis Committee Chair, 2005-present
- Kyle Glazewski, M.S. Geography, Thesis Committee Chair, 2003-present
- Kristena Johnson, M.S. Geography, Thesis Committee Chair, 2003-present
- Sarita Pachhai, M.S. Geography, Thesis Committee Chair, 2003-present
- Brandee Pang, M.S. Geography, Thesis Committee Chair, 2005-present

- Kristofor Parson, M.S. Geography, Thesis Committee Co-Chair (with J. Finley, USDA), 2005-present.
- Md. Shariar Pervez, M.S. Geography, Thesis Committee Co-Chair (with S. Seelan, Earth System Science and Policy Department), 2003-present
- Brent Pringle, M.S. Geography, Thesis Committee Chair, 2003-present

GRADUATE COMMITTEES AT UND

• **Completed:**

- 2004 Sara A. Milne, M.S. Biology.
Damon Grabow, M.S. Atmospheric Sciences.

• **In Progress:**

- Lane Cowger, M.S. Geography
- Anne Coyle, Ph.D. Biology
- Matthew Doeringsfeld, Ph.D. Biology
- Kenneth Gaffrey, M.E.M. Earth System Science and Policy
- John Leonhart, Ph.D. Biology
- James Maskey, Ph.D. Biology
- Bhanuben Patel, Ph.D. Chemical Engineering (appointed, member-at-large)
- Ganesh Pulicherla, M.S. Computer Science
- Eric Pulis, M.S. Biology
- Gary Votaw, M.S. Geography

UNDERGRADUATE RESEARCH ADVISED AND/OR FUNDED AT UND

- 2005 Paige Baker, Geography major, Using Airborne Hyperspectral Imagery to Map a Saltcedar Infestations near Lake Sakakawea, North Dakota, Ronald E. McNair Post-baccalaureate Achievement Program.
- 2004 Paige Baker, Geography major, GIS Analysis of the Spatial and Temporal Distribution of Mollusks in the Hell Creek Formation of Montana, Indians Into Geosciences (INGEOS) program (funded by J.H. Hartman).
- Emily Grewe, Geography major, A Test of Borehole Paleoclimatology, NSF Paleoclimate Program for Global Change (summer funding).
- Christopher Sanders, Geography major, NASA Native View Connections Program: Remote Sensing and GIS Training, North Dakota Space Training and Research (NDSTaR) program (summer funding).
- 2003 Torgrim Hoydahl, B.S. Geography/Peace Studies 2003, Project Advisor for UND Department of Interdisciplinary Studies Senior Project.
- Avram Slinger, Aviation Management major, Satellite Bioclimatology, North Dakota EPSCoR Advanced Undergraduate Research Award (summer funding).
- 2002 Mitchell Schull, B.S. Geography 2003, North Dakota Trauma System Assessment (semester funding).

Nicholas Ziegelmann, B.S. Geography 2002, North Dakota Trauma System Assessment (semester funding).

- 2001 Ben Ehreth, B.S. Geography 2001, Continued Development of GIS Data for the TEAM Leafy Spurge Project, Cooperative Ecosystem Studies Units Cooperative Agreement, United States Department of the Interior (academic year and summer funding).

GRANTS, CONTRACTS, AWARDS, AND FELLOWSHIPS

Total Dollars: \$635,984

- 2004 **North Dakota View, AmericaView Associate Membership**, U.S. Geological Survey and AmericaView Inc. (Director).

Changes in Vegetation Dynamics and Conversion of Agricultural Land in Bangladesh, 1973-2004, North Dakota NASA EPSCoR Faculty Seed Award (NASA Grant #NCC5-582), \$4,975 (PI).

Native View Connections: A Multi-Consortium Workforce Development Proposal, NASA Space Grant College and Fellowship Program, \$25,000 (6-state consortium, each with a PI; ND PI is S. de Silva; B. Rundquist is ND's Remote Sensing Specialist).

NASA Native View Connections Program: Remote Sensing and GIS Training, North Dakota Space Training and Research (NDSTaR), NASA Space Grant College and Fellowship Program, NASA WorkForce Development Initiative, \$4,000.

Computers to Support Instructional Needs in Geographic Information Sciences, Student Technology Fee Award, University of North Dakota, \$35,460.

Travel to Kansas City; October 21-24, 2004, Senate Scholarly Activities Committee Travel Award, University of North Dakota Office of Research and Program Development, \$227.

- 2003 **A Test of Borehole Paleoclimatology**, National Science Foundation, Paleoclimate Program for Global Change, University of North Dakota, \$385,768, 3 years (co-PI with W.D. Gosnold (project director), X. Dong, and P.E. Todhunter).

Detection and Prediction of Saltcedar Invasion in North Dakota, North Dakota NASA EPSCoR Faculty Seed and Student Research Awards (NASA Grant #NCC5-582), \$13,256 (PI).

Investigation of Saltcedar Invasion near Lake Sakakawea, North Dakota, Upper Midwest Aerospace Consortium, \$3,200 (PI).

Collection of Aerial Hyperspectral Image Data over Lake Sakakawea, North Dakota, University of North Dakota Office of Research and Program Development, \$5,925 (PI).

Characterization of Historical Land Use/Land Cover and Land Use/Land Cover Change for the Amphibian Study Site in Eastern Nelson County, North Dakota (continued), North Dakota NSF EPSCoR RNEST sub-project funded through the Department of Biology, University of North Dakota, \$6,000 (PI on sub-project).

Satellite Bioclimatology, North Dakota EPSCoR Advanced Undergraduate Research Award, \$2,500 (PI).

Travel to Manhattan, KS; October 2-4, 2003, Senate Scholarly Activities Committee Travel Award, University of North Dakota Office of Research and Program Development, \$441.

Geographic Information Sciences Course Software Fees, Student Technology Fee Award, University of North Dakota, \$12,574 (with P.E. Todhunter).

2002 **Characterization of Historical Land Use/Land Cover and Land Use/Land Cover Change for the Amphibian Study Site in Eastern Nelson County, North Dakota**, North Dakota NSF EPSCoR RNEST sub-project funded through the Department of Biology, University of North Dakota, \$21,030 (PI on sub-project).

Assessing Loss of Agricultural Lands to Wetland Expansion in the Devils Lake Basin of North Dakota using Satellite Remote Sensing, Faculty Research Seed Money Award, University of North Dakota, \$8,221 (co-PI with P.E. Todhunter).

Request for Equipment to Meet Geographic Information Systems Instructional Needs, Student Technology Fee Award, University of North Dakota, \$27,040 (with M. Hemmasi).

Installation of Network Connections, Student Technology Fee Award, University of North Dakota, \$3,200 (with M. Hemmasi).

Purchase of GPS Units for Instructional Purposes, Student Technology Fee Award, University of North Dakota, \$1,975 (with M. Hemmasi).

Travel to Binghamton, New York; October 26-28, 2002, Senate Scholarly Activities Committee Travel Award, University of North Dakota Office of Research and Program Development, \$381.

2001 **Development of an Automated Method to Detect Change in Winter Wheat Acreage using Remotely Sensed Data**, Ducks Unlimited Inc., \$6,500 (PI).

North Dakota Trauma System Assessment, U.S. Department of Health, Health Resources and Services Administration, Maternal and Child Health Bureau, \$45,000 (co-PI with D.A. Hansen and UND Center for Rural Health).

Continued Development of GIS Data for the TEAM Leafy Spurge Project, Cooperative Ecosystem Studies Units Cooperative Agreement, United States Department of the Interior, National Park Service, Theodore Roosevelt National Park, and the University of North Dakota, \$9,996 (PI).

Development of Web-Based Exercises for Geography 275: Remote Sensing of the Environment, Summer Instructional Development Professorship, University of North Dakota Office of Instructional Development, \$2,700 (PI).

Flood Damage Assessment and Survey of Mitigation Efforts at Stump Lake, North Dakota: A Case Study of a Closed-Basin Lake Flood, Quick Response Research Program, Natural Hazards Research and Applications Information Center, University of Colorado, Boulder, \$1,175 (co-PI with P.E. Todhunter).

2000 **Request to Purchase AVHRR Satellite Data**, UND Space Grant Proposal, \$2,820.

Travel to New York, New York; February 28-March 4, 2001, Senate Scholarly Activities Committee Travel Award, University of North Dakota Office of Research and Program Development, \$400.

Travel to New York, New York; February 28-March 4, 2001, Upper Midwest Aerospace Consortium Travel Grant, \$850.

1994 **Graduate School Fellowship**, Kansas State University, \$1,000.

1993 **Graduate School Fellowship**, Kansas State University, \$1,000.

REFEREED JOURNAL ARTICLES

2004 Todhunter, P.E., and **B.C. Rundquist**. The nine-year flood: Terminal lake flooding and wetland expansion in Nelson County, North Dakota (USA). *Physical Geography* 25(1):68-85.

2002 **Rundquist, B.C.** The influence of canopy vegetation fraction on spectral measurements over native tallgrass prairie. *Remote Sensing of Environment* 81(1):129-135.

Goodin, D.G., J.A. Harrington, Jr., and **B.C. Rundquist**. Land-cover change and associated trends in reflectivity and vegetation index in southwestern Kansas: 1972-1992. *Geocarto International* 17(1):43-50.

Wu, J., M.D. Ransom, M.D. Nellis, G.J. Kluitenberg, H.L. Seyler, and **B.C. Rundquist**. Using GIS to assess and manage the Conservation Reserve Program in Finney County, Kansas. *Photogrammetric Engineering & Remote Sensing* 68(7):735-744.

2000 **Rundquist, B.C.**, and J.A. Harrington, Jr. The effects of climatic factors on vegetation dynamics of tallgrass and shortgrass cover. *Geocarto International* 15(3):31-36.

Rundquist, B.C., J.A. Harrington, Jr., and D.G. Goodin. Mesoscale satellite bioclimatology. *The Professional Geographer* 52(2):331-344.

1999 Wu, J., M.D. Nellis, M.D. Ransom, H. Su, and **B.C. Rundquist**. Characterizing the relationships between land use and groundwater for Finney County, Kansas. *Geographical and Environmental Modeling* 3(2):203-215.

- 1997 Lulla, K.P., and **B.C. Rundquist**. Space shuttle photography for detecting changes in Hong Kong's land cover. In *Hong Kong and the Pearl River Delta as Seen from Space Images*, special publication of *Geocarto International*, 57-62.

PAPERS IN PREPARATION

Rundquist, B.C., Sethre, P.R., and P.E. Todhunter. Sub-Pixel Detection of Prairie Pothole Ponds in the Devils Lake Basin of North Dakota. *GIScience & Remote Sensing* (submitted in May 2004 to *Photogrammetric Engineering & Remote Sensing*, now in revision to be submitted to *GIScience & Remote Sensing*).

Rundquist, B.C., C.J. Henrie, and E.J. Grewe. Internet access to remotely sensed data: Satellite imaging made commonplace. *Journal of Map and Geography Libraries* (in review – submitted Oct. 2004).

Brookman, D.A., B.C. Rundquist, and R.S. Hanley. Saltcedar invasion into North Dakota: A predictive analysis using the Genetic Algorithm for Rule-Set Prediction (GARP). *Proceedings of the 2003 Meeting of the Canadian Association of Geographers, Prairie Division* (in review).

Todhunter, P.E., and B.C. Rundquist. Wetland expansion in Nelson County, North Dakota: The Quiet Flood Hazard. *Wetlands* (in preparation).

Rundquist, B.C., D.A. Brookman, D.C. Rundquist, and R.L. Perk. Remote sensing of Saltcedar (*Tamarix ramosissima*) in North Dakota using airborne hyperspectral imagery. *Weed Science* (in preparation).

PUBLISHED REPORTS

- 2003 Todhunter, P.E., and **B.C. Rundquist**. Flood damage assessment and survey of mitigation efforts at Stump Lake, North Dakota: A study of a closed-basin lake flood. *Quick Response Research Grant Report #164*. Boulder, CO: Natural Hazards Research and Applications Information Center, University of Colorado. URL: <http://www.colorado.edu/hazards/qr/qr164/qr164.html>.

CONFERENCE PROCEEDINGS PAPERS

- 2004 Brookman, D.A., B.P. Pang, B.E. Pringle, and **B.C. Rundquist**. Changes in Urbanization in Northern Illinois from 1988 to 2001 using Landsat and Census Data. *Papers and Proceedings of the Applied Geography Conferences* 27:223-230.
- 2003 Brookman, D.A., **B.C. Rundquist**, and R.S. Hanley. Prediction of Saltcedar (*Tamarix ramosissima*): A risk assessment using the Genetic Algorithm for Rule-Set Prediction (GARP) Model. *Papers and Proceedings of the Applied Geography Conferences* 26:462-470.

- 2002 Smith, N.F., **B.C. Rundquist**, R.R. Root, S.R. Hager, and B. Card. Imaging spectrometry to map potential wildfire fuels and Theodore Roosevelt National Park, North Dakota. *Papers and Proceedings of the Applied Geography Conferences* 25:276-284.
- 2000 **Rundquist, B.C.**, D.G. Goodin, and A.J. Smith. Relating biophysical processes to spatial patterns of spectral reflectance: A multiple-scale analysis of prairie vegetation canopies. *Papers and Proceedings of the Applied Geography Conferences* 23:190-198.
- 1999 Hutchinson, J.M.S., and **B.C. Rundquist**. Rural land-cover classification using multirate SAR imagery. *Papers and Proceedings of the Applied Geography Conferences* 22:332-340.
- 1998 **Rundquist, B.C.**, J.A. Harrington, Jr., D.G. Goodin, and Y. Tao. Regional and local NDVI response to climate variables in Kansas. *ASPRS-RTI Annual Convention and Exhibition Proceedings* 579-591.
- Rundquist, B.C.** The effects of climatic factors on vegetation dynamics across homogeneous land cover. *Papers and Proceedings of the Applied Geography Conferences* 21:424-431.
- Hutchinson, J.M.S., and **B.C. Rundquist**. Spatial modeling of net radiation over heterogeneous terrain. *Papers and Proceedings of the Applied Geography Conferences* 21:416-423.
- 1997 **Rundquist, B.C.** Spatial and temporal variation in NDVI response to climatic variables in Kansas. *Papers and Proceedings of the Applied Geography Conferences* 20:304-309.
- Tao, Y., Z. Chi, J.A. Harrington, Jr., and **B.C. Rundquist**. Analysis of the relationship between NDVI and rainfall in subhumid agricultural areas and the influence of environmental factors. *Papers and Proceedings of the Applied Geography Conferences* 20:310-317.
- 1996 Runco, S., K.P. Lulla, M.F. McKay, and **B.C. Rundquist**. The NASA space shuttle Earth observation photography database. *Eco-Infoma '96 Proceedings* 11:779-784.
- Miewald, T., S. Narumalani, **B.C. Rundquist**, and K.P. Lulla. Integration of space shuttle photography and SIR-C data for land-cover analysis. *ASPRS/ACSM Annual Convention and Exhibition Proceedings* 615-624.

GENERAL READERSHIP

- 1997 **Rundquist, B.C.** Astronaut photography: portraits of the planet. *Geographic Insights* 7(3):11-13.
- Rundquist, B.C.**, R. Bivens, K.P. Lulla, and M.D. Nellis. Kansas ... from above. *Kansas Wildlife and Parks* 54(2):24-27.
- 1996 **Rundquist, B.C.**, D. Frank, T. Miewald, K.P. Lulla, and D. McLaughlin. GIS for astronaut training: First step into a new frontier. *GIS World* 9(4):44-47.

Rundquist, B.C., and K.P. Lulla. Nebraska: Through the eyes of astronauts. *NEBRASKALand* 74(9):41-47.

Rundquist, B.C., M.D. Nellis, and K. Price. Groundwater level declines in southwestern Kansas. *Geographic Insights* 6(2):12-14.

1993 Kuzelka, R., and C. Flowerday (eds). *Flatwater: A History of Nebraska and Its Water*. Lincoln, NE: Conservation and Survey Division. (Several articles by **B.C. Rundquist**).

1991 **Rundquist, B.C.** Summary of 35th Annual Groundwater Conference. *Great Plains Research* 1(1):168-170.

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2003 **Rundquist, B.C.** and P.R. Sethre. *Environmental Remote Sensing and Air Photo Interpretation Laboratory Manual, Second Edition*. Grand Forks: University of North Dakota, Geography Department.

2001 **Rundquist, B.C.** *Environmental Remote Sensing and Air Photo Interpretation Laboratory Manual*. Grand Forks: University of North Dakota, Geography Department.

2000 **Rundquist, B.C.**, J.A. Harrington, Jr., and A.J. Smith. *Introduction to Remote Sensing Laboratory Manual, Eighth Edition*. Manhattan: Kansas State University, Geography Department.

1999 **Rundquist, B.C.**, and J.A. Harrington, Jr. *Introduction to Remote Sensing Laboratory Manual, Seventh Edition*. Manhattan: Kansas State University, Geography Department.

1996 Harrington, J.A., Jr., M.D. Nellis, and **B.C. Rundquist**. *Introduction to Remote Sensing Laboratory Manual, Sixth Edition*. Manhattan: Kansas State University Geography Department.

PAPERS PRESENTED AT PROFESSIONAL MEETINGS (ORAL)

2004 **Rundquist, B.C.** Remote sensing as a tool for investigating human-environment interactions. National Council for Geographic Education, Kansas City, MO.

Pervez, Md S., **B.C. Rundquist**, and S.K. Seelan. Mapping land cover change in northern Bangladesh (1973-1996) using multi-temporal Landsat MSS and TM imagery. Great Plains/Rocky Mountain Division of the Association of American Geographers, Sioux Falls, SD.

Rundquist, B.C., D.A. Brookman, D.C. Rundquist, and R.L. Perk. Hyperspectral remote sensing of invasive saltcedar near Lake Sakakawea, North Dakota. Association of American Geographers, Philadelphia, PA.

- P. Baker, J.H. Hartman, and **B.C. Rundquist**. GIS analysis of the spatial and temporal distribution of mollusks in the Hell Creek Formation of Montana. Indians into Geosciences (INGEOS) Conference, Grand Forks, ND.
- 2003 **Rundquist, B.C.**, and A.F. Slinger. The effects of land cover on climate-vegetation-sensor relationships in North Dakota. Great Plains/Rocky Mountain Division of the Association of American Geographers, Manhattan, KS.
- Brookman, D.A., **B.C. Rundquist**, and R.S. Hanley. Prediction of Saltcedar (Tamarix ramosissima): A risk assessment using the Genetic Algorithm for Rule-Set Prediction (GARP) model. Applied Geography Conference, Colorado Springs, CO.
- Todhunter, P.E. and **B.C. Rundquist**. Damage assessment of Stump Lake and wetland flooding in Nelson County, North Dakota. First Annual International Water Conference, Moorhead, MN.
- Todhunter, P.E., and **B.C. Rundquist**. Slow death by water: Ten years of flooding in Nelson County, North Dakota. Association of American Geographers, New Orleans, LA.
- 2002 Smith, N.F., **B.C. Rundquist**, R.R. Root, S.R. Hager, and B. Card. Imaging spectrometry to map potential wildfire fuels and Theodore Roosevelt National Park, North Dakota. Applied Geography Conference, Binghamton, NY.
- Rundquist, B.C.**, P.E. Todhunter, and P.R. Sethre. Assessing the loss of agricultural lands from a pervasive, closed-basin flooding event in the Devils Lake Basin of North Dakota. Applied Geography Conference, Binghamton, NY.
- 2001 **Rundquist, B.C.**, and P.E. Todhunter. Assessing potential damage from a pervasive, closed-basin flooding event at Stump Lake, North Dakota. Great Plains/Rocky Mountain Division of the Association of American Geographers, Omaha, NE.
- Rundquist, B.C.** *In situ* remote sensing of green vegetation fraction over tallgrass prairie cover. American Society for Photogrammetry and Remote Sensing, St. Louis, MO.
- Goodin, D.G., **B.C. Rundquist**, and A.J. Smith. Biophysical process and spatial-spectral response: a multi-scale analysis in tallgrass prairie. American Society for Photogrammetry and Remote Sensing, St. Louis, MO.
- Harrington, J.A., Jr., **B.C. Rundquist**, D.G. Goodin, and A.J. Smith. The influence of crop rotation on change detection in the High Plains. American Society for Photogrammetry and Remote Sensing, St. Louis, MO.
- Rundquist, B.C.** Close-range remote sensing for estimating vegetation fraction over a native tallgrass prairie canopy. Association of American Geographers, New York, NY.
- 2000 **Rundquist, B.C.**, D.G. Goodin, and A.J. Smith. Relating biophysical processes to spatial patterns of spectral reflectance: A multiple-scale analysis of prairie vegetation canopies. Applied Geography Conference, Tampa, FL.

- Rundquist, B.C.** Close-range remote sensing of canopy vegetation fraction over tallgrass prairie. Association of American Geographers, Pittsburgh, PA.
- 1999 **Rundquist, B.C.**, J.A. Harrington, Jr., and D.G. Goodin. Mapping long- and short-term land-cover dynamics in southwest Kansas through data fusion. American Society for Photogrammetry and Remote Sensing, Portland, OR.
- Hutchinson, J.M.S., **B.C. Rundquist**, and J.A. Harrington, Jr. Rural land-cover classification using multirate SAR imagery. American Society for Photogrammetry and Remote Sensing, Portland, OR.
- Goodin, D.G., J.A. Harrington, Jr., and **B.C. Rundquist**. Land-use change and associated trends in surface reflectivity in southwestern Kansas, 1972-1992. American Society for Photogrammetry and Remote Sensing, Portland, OR.
- Harrington, J.A., Jr., **B.C. Rundquist**, and D.G. Goodin. Mesoscale satellite bioclimatology. American Society for Photogrammetry and Remote Sensing, Portland, OR.
- Rundquist, B.C.** Variation in narrow-band spectral response across a water gradient on tallgrass prairie. Association of American Geographers, Honolulu, HI.
- Harrington, J.A., Jr., **B.C. Rundquist**, and D.G. Goodin. Mesoscale satellite bioclimatology. Association of American Geographers, Honolulu, HI.
- 1998 **Rundquist, B.C.** The effects of climatic factors on vegetation dynamics across homogeneous land cover. Applied Geography Conference, Louisville, KY.
- Rundquist, B.C.**, and J.A. Harrington, Jr. Regional and local NDVI response to climate variables in Kansas. American Society for Photogrammetry and Remote Sensing, Tampa, FL.
- 1997 **Rundquist, B.C.** NDVI response to climatic variation in Kansas. Applied Geography Conference, Albuquerque, NM.
- Rundquist, B.C.** Spatial and temporal variation in NDVI response to climatic variables in Kansas. Great Plains/Rocky Mountain Division of the Association of American Geographers, Bozeman, MT.
- 1996 **Rundquist, B.C.** New technologies for teaching Earth science to astronauts. American Institute of Aeronautics and Astronautics, Houston, TX.
- 1995 **Rundquist, B.C.** The use of GIS to train astronauts. East Texas GIS Forum, Texas Regional Institute for Environmental Studies, Huntsville, TX.

SEMINARS AND INVITED PRESENTATIONS

- 2004 **Geospatial Technology: A World of Opportunity**, North Dakota Department of Career and Technical Education, All Service Conference, Bismarck, ND.

- Field-Based and Aerial Remote Sensing of Invasive Saltcedar near Lake Sakakawea, North Dakota**, North Dakota Saltcedar Task Force, Riverdale, ND.
- 2003 **Ecological Remote Sensing at Multiple Spatial Scales**, Department of Biology Forum, University of North Dakota.
- The Use of Hyperspectral Remote Sensing for Vegetation Detection and Mapping**, Presentation to Space Studies 535: Satellite Information Processing, University of North Dakota.
- GIS Applications in Health Geography**, College of Nursing Research Seminar, University of North Dakota.
- Development of an Automated Method to Detect Change in Winter Wheat Acreage using Remotely Sensed Data and GIS**, Ducks Unlimited, Bismarck, ND (with S. Moe).
- The Quiet Flood: Terminal Lake Flooding and Wetland Expansion in Nelson County, North Dakota**, Sigma Xi, University of North Dakota Chapter, 2002-2003 Seminar Series (with P. Todhunter).
- Setting the Stage for Ecological Interactions: Documenting Historical Patterns of Landscape Change**, North Dakota EPSCoR RNEST Working Group, Biocomplexity Cluster Workshop, University of North Dakota.
- 2002 **Applications of Remote Sensing in the Geosciences**. Presentation to Indians Into Geosciences (INGEOS), Department of Geology and Geological Engineering, University of North Dakota.
- 2001 **From Plot to Planet: Remote Sensing of Vegetation on Multiple Scales**. Presentation to Space Studies 535: Satellite Information Processing, University of North Dakota.
- 2000 **Close-Range Remote Sensing of Vegetation Dynamics over Tallgrass Prairie**. Presentation to Department of Geography, Texas A&M University, College Station, TX.
- Close-Range Remote Sensing of Vegetation Dynamics over Tallgrass Prairie**. Presentation to Department of Geography, University of Missouri, Columbia, MO.
- 1999 **Biophysical Remote Sensing of Vegetation Dynamics: Monitoring Global Environmental Change from the Ground, Up**. Presentation to Department of Geography and Earth Science, George Mason University, Fairfax, VA.
- 1996 **GIS in Space**. Presentation to Department of Geography, Kansas State University, Manhattan, KS.

PAPERS PRESENTED AT PROFESSIONAL MEETINGS (POSTER)

- 2004 Pachhai, S., W.D. Peck, and **B.C. Rundquist**. Comparison of temporary flood water storage volume estimations using 1-m LIDAR and 30-m NED DEM in the Red River

Basin. Great Plains/Rocky Mountain Division of the Association of American Geographers, Sioux Falls, SD.

Rundquist, B.C., and S.Laducer. North Dakota NativeConnections: Geospatial technology goals for Turtle Mountain Community College. NASA Space Grant Meeting, Western Region, Houston, TX.

Sanders, C.R., and **B.C Rundquist**. NASA Native View Connections program: Remote sensing and GIS training. NASA Space Grant Meeting, Western Region, Houston, TX.

Rundquist, B.C., S. de Silva, and S. Laducer. The NativeConnections program in North Dakota: Enhancing geospatial technology education and use on tribal lands. Space on the Prairie Conference, Grand Forks, ND.

Pervez, S., **B.C. Rundquist**, and S.K. Seelan. Changes in vegetation dynamics and conversion of agricultural land in Bangladesh, 1973-2003. Space on the Prairie Conference, Grand Forks, ND.

Gosnold, Jr. W., P. Todhunter, X. Dong, **B. Rundquist**, J. Majorowicz, and D. Blackwell. A multidisciplinary approach to assessing the causal components of climate change. American Geophysical Union 2004 Joint Assembly, Montreal, Canada.

Rundquist, B.C., D.C. Munski, and D.A. Hansen. One-hundred and twenty years of geography on the northern plains: Department of Geography, University of North Dakota. Association of American Geographers, Philadelphia, PA.

Eggleston, S.M., and **B.C Rundquist**. University of North Dakota safety study. UND Graduate School Faculty Forum, Grand Forks, ND.

Gosnold, Jr., W., P. Todhunter, X. Dong, **B. Rundquist**, J. Majorowicz and D. Blackwell. Multidisciplinary approach to assessing the causal components of climate change. UND Graduate School Faculty Forum, Grand Forks, ND.

Karki, S., and **B.C. Rundquist**. Wind power suitability classification in North Dakota. UND Graduate School Faculty Forum, Grand Forks, ND.

Milne, S., R. Sweitzer, and **B. Rundquist**. Habitat suitability modeling as a tool for managing prairie dogs in western North Dakota. UND Graduate School Faculty Forum, Grand Forks, ND.

Pachhai, S., **B.C. Rundquist**, and W.D. Peck. Identification of potential areas for temporary flood water storage in the Red River Basin. UND Graduate School Faculty Forum, Grand Forks, ND.

2003 **Rundquist, B.C.** and P.E. Todhunter. Determining the extent of terminal lake and wetland flooding in Nelson County, North Dakota: 1991-2001. Space on the Prairie Conference, Grand Forks, ND.

- Slanger, A.F., and **B.C. Rundquist**. Statistical Characterization of Climate-Vegetation-Satellite Sensor Relationships in North Dakota: 1994-2002. 4th Biennial North Dakota/South Dakota Joint EPSCoR Conference, Fargo, ND.
- Brookman, D.A., **B.C. Rundquist**, and R.S. Hanley. Saltcedar invasion into North Dakota: A predictive analysis using the Genetic Algorithm for Rule-Set Prediction (GARP). 27th Annual Meeting of the Prairie Division of the Canadian Association of Geographers, Gimli, MB.
- Moe, S.A., **B.C. Rundquist**, D.C. Munski, D.B. Pool, and D.N. Morgando. Development of an automated method to detect change in winter wheat acreage using remotely sensed data. Great Plains/Rocky Mountain Division of the Association of American Geographers, Manhattan, KS.
- Sethre, P.R., and **B.C. Rundquist**. Characterization of Historical Land Use/Land Cover Change in Eastern Nelson County, North Dakota. Great Plains/Rocky Mountain Division of the Association of American Geographers, Manhattan, KS.
- Brookman, D.A., and **B.C. Rundquist**. Proximal Remote Sensing of Saltcedar (Tamarix ramosissima) near Lake Sakakawea, North Dakota. Mississippi Gulf Coast Geospatial Conference, Biloxi, MS.
- 2002 Schull, M., N. Ziegelmann, **B. Rundquist**, and D. Hansen. Geographic Information Systems for improved management of emergency medical services in North Dakota. Upper Great Plains Technology Conference, Fargo, ND.
- Rundquist, B.C.**, D.A. Hansen, M. Schull, and N. Ziegelmann. Creating a better rural emergency ambulance service using GIS. North Dakota EPSCoR Science, Engineering and Mathematics 10th Annual Poster Session, Grand Forks, ND.
- 2001 **Rundquist, B.C.** Close-range remote sensing for estimating vegetation fraction over a native tallgrass prairie canopy. Association of American Geographers 97th Annual Meeting, New York, NY.
- 1999 Hutchinson, J.M.S., and **B.C. Rundquist**. Spatial modeling of net radiation over heterogeneous terrain. Association of American Geographers 95th Annual Meeting, Honolulu, HI.
- Rundquist, B.C.**, J.A. Harrington, Jr., D.G. Goodin, and H. Fang. Mapping long- and short-term land-cover change in southwest Kansas. Kansas Statewide EPSCoR Conference, Topeka, KS.
- Harrington, J.A., Jr., **B.C. Rundquist**, and D.G. Goodin. Mesoscale satellite bioclimatology. Kansas Statewide EPSCoR Conference, Topeka, KS.
- 1998 Goodin, D.G., J.A. Harrington, Jr., and **B.C. Rundquist**. Agricultural land use and irrigation expansion in southwestern Kansas, 1972-1992. Association of American Geographers 94th Annual Meeting, Boston, MA.

Goodin, D.G., J.A. Harrington, Jr., and **B.C. Rundquist**. Agricultural land use and irrigation expansion in southwestern Kansas, 1972-1992. Water and the Future of Kansas 15th Annual Conference, Manhattan, KS.

PROFESSIONAL SERVICE

• **Manuscripts Reviewed:**

- *Remote Sensing of Environment* (x2)
- *International Journal of Remote Sensing* (x1)
- *Photogrammetric Engineering and Remote Sensing* (x3)
- *Journal of Geoscience Education* (x1)
- *Papers and Proceedings of the Applied Geography Conferences* (x1)
- *Proceedings of the 18th North American Prairie Conference* (x1)
- *Prairie Perspectives: Proceedings of the Canadian Association of Geographers, Prairie Division Annual Meeting, 2000* (x4).
- *Wetlands* (x1)

• **Book Chapters Reviewed:**

- The Vegetations of Saskatchewan, In: *The Geography of Saskatchewan*. University of Regina: Department of Geography, 2003.

• **Textbooks/Lab Manuals Reviewed:**

- Marsh, William. 2001. *Introduction to Physical Geography*, New York, NY: W.H. Freeman and Company.
- Christopherson, R.W., and G.L. Hobbs. 2000. *Applied Physical Geography: Geosystems in the Lab*, Upper Saddle River, NJ: Prentice-Hall, Inc.

• **Research Proposals Reviewed:**

- NASA Earth System Science Fellowship Graduate Student Program
- NSF Faculty Early Career Development (CAREER) Program
- NSF Geography and Regional Science Program (x2)
- USDA Small Business Innovation Research (SBIR) Program Phase I (x4)
- USDA Small Business Innovation Research (SBIR) Program Phase II
- Canadian Foundation for Climate and Atmospheric Sciences (CFCAS)
- Azerbaijan-U.S. Bilateral Grants Program of the U.S. Civilian Research and Development Foundation (CRDF)
- North Dakota NASA EPSCoR Seed Money Program (x3)

• **Professional Meeting Service:**

- Judge, Remote Sensing Specialty Group Student Paper Competition, Association of American Geographers, Philadelphia, PA, 2004.
- Environmental Assessment Session Chair, Great Plains/Rocky Mountain Division of the Association of American Geographers, Manhattan, KS, 2003.
- Remote Sensing and Climate Change Session Chair, Great Plains/Rocky Mountain Division of the Association of American Geographers, Omaha, NE, 2001.
- Environmental Assessment and Analysis Session Chair, Applied Geography Conference, Tampa, FL, 2000.
- Physical Geography II Session Chair, Prairie Division of the Canadian Association of Geographers, Devils Lake, ND, 2000.

- Remote Sensing Specialty Group Student Paper Competition Organizer, Association of American Geographers, Honolulu, HI, 1999.
- Remote Sensing Specialty Group Student Poster Competition Organizer. Association of American Geographers, Honolulu, HI, 1999.
- **Offices in Professional Associations/Honor Societies:**
 - Student Director, Remote Sensing Specialty Group, Association of American Geographers, 1997-1998 and 1994-1995.
 - President, Gamma Theta Upsilon, Beta Psi Chapter, Kansas State University, 1994-1995.

UNIVERSITY SERVICE

- College of Arts and Sciences Budget Committee, University of North Dakota, 2004-
- University Senate Student Policy Committee, University of North Dakota, 2002-
- Environmental Science Undergraduate Major Planning Committee, University of North Dakota, 2002-
- Faculty Research Seed Money Physical Sciences Committee, University of North Dakota, 2001-
- Environmental Systems Research Institute (ESRI) Virtual Campus Subscription Manager for UND, 2001-
- Undergraduate Program Evaluation for Anthropology, University of North Dakota, 2001-2002.
- Earth System Science Program Planning Committee, University of North Dakota, 2000-2002.

DEPARTMENTAL SERVICE

- Member, UND Geography Department Building Committee, 2004.
- Chair, Environmental Geographer Search Committee, 2003-2004.
- Director, Graduate Geographic Information Science Graduate Certificate Program, Department of Geography, University of North Dakota, 2002-present.
- Director, Geographic Analysis and Remote Sensing Lab, Department of Geography, University of North Dakota, Grand Forks, 2000-present.
- Department Head Search Committee, Graduate Student Member, Geography Department, Kansas State University, 1997 and 1998.
- Department of Geography "Brown Bag" Lecture Series, Director, Kansas State University, 1994-1995 and 1996-1999.

COMMUNITY SERVICE

- Coordinated a 2-week-long investigative research site for the Dakota Science Center's Science in the Circle of Life Program (for Native American and other rural North Dakota 7th and 8th graders), 2003.
- Facilitated the development of media coverage maps for the Ralph Engelstad Arena, 2003.

- Facilitated the development of U.S. Potato Harvest Seasons and Potato Production maps for the Northern Great Plains Potato Growers Association, 2003.
- Assisted in the development of ground visibility maps for the Federal Aviation Administration, Grand Forks Regional Airport Control Tower (received letter of commendation), 2002.

AWARDS, HONORS, AND HONOR SOCIETIES

- First Place, Student Poster Competition, Annual Meeting of the Association of American Geographers, Remote Sensing/GIS Specialty Groups, Honolulu, HI, 1999 (with J.M.S. Hutchinson).
- First Place, Student Paper Competition, Applied Geography Conference, Louisville, KY, 1998.
- National Outstanding Graduate Student Scholarship (Robert G. Buzzard award), Gamma Theta Upsilon International Geographical Honor Society, 1997.
- Best Paper of Session, American Institute of Aeronautics and Astronautics (AIAA) Houston chapter annual meeting, 1996.
- Outstanding Graduate Teaching Assistant, Department of Geography, Kansas State University, 1994-95 academic year.
- Phi Kappa Phi, Kansas State University chapter, 1995.
- Gamma Theta Upsilon, Kansas State University chapter, 1994.

PROFESSIONAL MEMBERSHIPS

- American Society of Photogrammetry and Remote Sensing (ASPRS), 1996-present.
- Association of American Geographers (AAG), 1993-present.
- IEEE Geoscience and Remote Sensing, 2002-present.
- National Council for Geographic Education (NCGE), 2004-present.
- Sigma Xi, 2000-present.