

## JEFFREY ADAM VANLOOY

Department of Earth System Science and Policy  
University of North Dakota  
Stop 9011  
Grand Forks, ND 58202  
Department Phone: (701) 777-4755  
E-mail: jvanlooy@aero.und.edu

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### ACADEMIC CREDENTIALS

**Ph.D., Geography**, August 2007

University of Utah; Salt Lake City, UT 84112

Dissertation Title: "Measuring the Mass Balance and Contribution of North American Glaciers to Sea Level Rise Using Remote Sensing Techniques"

**Master of Arts, Geography**, May 2002

Kansas State University; Manhattan, KS 66506

Thesis Title: "Changes in Channel Morphology along the Cimarron River in Southwest Kansas: 1953 – 2001"

**Bachelor of Science, Geography**, May 2000

University of Idaho; Moscow, ID 83844

**Bachelor of Science, Cartography**, May 2000

University of Idaho; Moscow, ID 83844

### RESEARCH INTERESTS

Topical: Geomorphology (Glacial, Fluvial); Glacial Hydrology; Present Climate Change (Using Glacial Indicators); Landscape Change; Natural Hazards (primarily flood related)

Methodological: Field-based: GPS, GPR, stream flow; Remote Sensing (Satellite and Aerial Photography); GIS

Regional: North American Mountains (currently Wyoming); North American Plains (currently Sheyenne National Grassland, North Dakota)

### UNIVERSITY EMPLOYMENT

**Associate Professor** (Fall 2017 – Present)

Department of Earth System Science and Policy;  
University of North Dakota; Grand Forks, ND

**Assistant Professor** (Summer 2010 – Summer 2017)

Department of Earth System Science and Policy;  
University of North Dakota; Grand Forks, ND

**Assistant Professor** (Fall 2007 – Summer 2010)

Department of Geography; Radford University; Radford, VA

**Graduate Research Fellow** (Fall 2006 – Spring 2007)  
Graduate School; University of Utah; Salt Lake City, UT

**Associate Instructor** (Fall 2005 – Summer 2006)  
Department of Geography; University of Utah; Salt Lake City, UT

**Undergraduate Academic Advisor** (Fall 2005 – Summer 2006)  
Department of Geography; University of Utah; Salt Lake City, UT

**GIS Technician** (Fall 2005 – Spring 2006)  
Digitally Integrated Geographic Information Technologies (DIGIT) Lab;  
University of Utah; Salt Lake City, UT

**Teaching Assistant** (Fall 2002 – Spring 2005)  
Department of Geography; University of Utah; Salt Lake City, UT

**Research Assistant** (Summer 2001)  
Department of Geography; Kansas State University; Manhattan, KS

**Teaching Assistant** (Fall 2000 – Spring 2002)  
Department of Geography; Kansas State University; Manhattan, KS

**PUBLICATIONS: Published, In Press, or Accepted**

\*\*Graduate Student Advisee; \*Graduate Student

**Peer Reviewed**

Molodtsova, Tatiana\*, Sergey Molodtsov\*, Andrei Kirilenko, Xiaodong Zhang, and **Jeffrey VanLooy**. 2016. Evaluating flood potential with GRACE in the United States. *Natural Hazards and Earth System Sciences*. 16:1011-1018. Impact Factor: 1.74

Vandeberg, Gregory S., and **Jeffrey A. VanLooy**. 2016. Continental Glacier meltwater contributions to late summer stream flow and water quality in the northern Wind River Range, Wyoming, USA. *Environmental Earth Sciences*. 75:1-14. Impact Factor: 1.77

Knudson, Michael D.\*\*, **Jeffrey A. VanLooy**, and Michael J. Hill. 2015. A habitat suitability index (HSI) for the western prairie fringed orchid (*Platanthera praeclara*) on the Sheyenne National Grassland, North Dakota, U.S.A. *Ecological Indicators*. 57:536-545. Impact Factor: 3.23

Paul, Frank, Tobias Bolch, Andreas Käab, Thomas Nagler, Christopher Nuth, Killian Scharrer, Andrew Shepherd, Tazio Strozzi, Francesca Ticconi, Rakesh Bhambri, Etienne Berthier, Torborg Heid, Seongsu Jeong, Matthias Kunz, Adrian Luckman, Alan Muir, Geir Moholdt, **Jeffrey VanLooy**, and Thomas Van Niel. 2015. The Glaciers Climate Change Initiative: Methods for creating glacier area, elevation change and velocity products. *Remote Sensing of Environment*. 162:408-426. Impact Factor: 6.39

**VanLooy, Jeffrey A.**, Clement Miede\*, Gregory S. Vandeberg, and Richard R. Forster. 2014. Ice-volume estimation inferred from ice-thickness and surface measurements for Continental Glacier, Wind River Range, Wyoming, U.S.A. *Journal of Glaciology*. 60:478-488. Impact Factor: 3.24

Proulx, Rob A.\*, Michael Knudson\*\*, Andrei Kirilenko, **Jeffrey A. VanLooy**, and Xiaodong Zhang. 2013. Characterizing the Terrestrial Water Budget in the Prairie Coteau Using GRACE, NOAA, Landsat, and Groundwater Well Data. *Water Resources Research*. 49:5756-5764. Impact Factor: 3.71

**VanLooy, Jeffrey A.**, Richard Forster, David Barta\*, and James Turrin\*. 2013. Spatially variable surface elevation changes and estimated melt water contribution of Continental Glacier in the Wind River Range, Wyoming, USA: 1966 - 2011. *Geocarto International*. 28:98-113. Impact Factor: 0.90

**VanLooy, Jeffrey A.** and Richard R. Forster. 2011. Use of historical elevation data to calculate surface-elevation and volume changes of Ha-Iltzuk Icefield, southwest British Columbia, Canada, 1970 to mid-1980s. *Annals of Glaciology*. 52:109-115. Impact Factor: 1.80

**VanLooy, Jeffrey A.** 2011. Analysis of elevation changes in relation to surface characteristics for six glaciers in Northern Labrador, Canada using ASTER imagery. *Geocarto International*. 26:167-181. Impact Factor: 0.58

**VanLooy, Jeffrey A.** and Richard R. Forster. 2008. Glacial changes of five southwest British Columbia icefields, Canada, mid-1980s to 1999. *Journal of Glaciology*. 54:469-478. Impact Factor: 1.50

**VanLooy, Jeffrey A.** and Thomas J. Cova. 2007. GIS-based indices for comparing airline flight-path vulnerability to volcanoes. *The Professional Geographer*. 59:74-86. Impact Factor: 1.71

**VanLooy, Jeffrey A.**, Richard R. Forster, and Andrew L. Ford. 2006. Accelerating thinning of Kenai Peninsula glaciers, Alaska. *Geophysical Research Letters*. 33:L21307. Impact Factor: 2.60

**VanLooy, Jeffrey A.** and Charles W. Martin. 2005. Channel and vegetation change on the Cimarron River, Southwestern Kansas, 1953-2001. *Annals of the Association of American Geographers*. 95:727-739. Impact Factor: 2.71

#### **Peer Reviewed Book Chapters**

**VanLooy, Jeffrey**, Richard Forster, and Andrew Ford, "Accelerating thinning of Kenai Peninsula glaciers, Alaska", in *State of the Cryosphere: Glaciers and Ice Sheets*, ed. Hamish Pritchard, Special Publications Volume 60, SP0607314, ISBN: 978-0-87590-731-4.

#### **Non-Peer Reviewed**

**VanLooy, Jeffrey A.**, and Roberta MacDonald. 2014. Analyzing changes and differences in glacial melt rates across the southern Greater Yellowstone Ecosystem. In *Program and Abstracts, Crossing Boundaries: Science, management, and conservation in the Greater Yellowstone*, pp. 46-47. Yellowstone National Park, WY: The 12<sup>th</sup> biennial scientific conference on the Greater Yellowstone Ecosystem.

Forster, Richard R., **Jeff VanLooy**, Dorothy Hall, and Ryo Michishita. 2008. Alaskan glaciology from space. *Proceedings in IEEE International Geoscience and Remote Sensing Symposium*.

## PUBLICATIONS PENDING

**VanLooy, Jeffrey A.** and Gregory S. Vandeberg. (under review) Late summer glacial meltwater contributions to Bull Lake Creek, Wind River Range, Wyoming, USA based on field measurements and stable isotopes. *Water Resources Research*.

**VanLooy, Jeffrey A.** Recent increased glacial melt rates in the Wind River Range, Wyoming, USA. *Environmental Earth Sciences*.

## GRANTS, FELLOWSHIPS, AND CONTRACTS

### Research and Consulting

- 2017 \$11,000: Greater Yellowstone Coordinating Committee and Shoshone National Forest; Title: Analysis of glacial locations for proposed benchmark glaciers in the Greater Yellowstone Ecosystem. Dates: 10/1/2016 – 9/30/2018. Project Number: UND0021620. PI: **Jeffrey A. VanLooy**, ESSP, University of North Dakota; Co-PI: Gregory Vandeberg Department of Geography and GISc., University of North Dakota.
- 2015 \$11,616: Greater Yellowstone Coordinating Committee and Shoshone National Forest; Title: Using glacial indicators for assessment of water and air quality, as well as glacial melt water quantity in the Greater Yellowstone Area: A case study in the Wind River Range, WY. Dates: 3/1/2015 – 3/1/2016. Project number: UND0020201. PI: **Jeffrey A. VanLooy**, ESSP, University of North Dakota.
- 2014 \$7,000: Summer Graduate Research Professorship, School of Graduate Studies, University of North Dakota; Title: Creation of Digital Elevation Models (DEMs) from International Space Station Agricultural Camera (ISSAC) Imagery for World-wide Glacial Research. Dates: 5/16/2014 – 7/31/2014. PI: **Jeffrey A. VanLooy**, ESSP, University of North Dakota.
- 2012 \$6,500: Collaborative contract work with BBI International (Ethanol Producer Magazine) for five biofuel plant location maps. Dates: 3/20/2012 – 12/31/2012 Proposal Number: 40800-2225-UND0017720. PI: **Jeffrey A. VanLooy**, ESSP, University of North Dakota.
- 2012 \$19,052: Faculty Research Seed Money, University of North Dakota; Title: Measurement of glacial changes in the Wind River Mountains, Wyoming, and their contributions to regional water resources. Dates: 3/5/2012 – 9/5/2013 Award Number: 21418-4010-01925. PI: **Jeffrey A. VanLooy**, ESSP, University of North Dakota.
- 2011 \$5,000: Contract work with BBI International (Ethanol Producer Magazine) for five biofuel plant location maps. Dates: 3/19/2011 – 12/31/2011 Proposal Number: UND0016879. PI: **Jeffrey A. VanLooy**, ESSP, University of North Dakota.
- 2011 \$3,619.59: Senate Scholarly Activities Committee, New Faculty Scholar Award, University of North Dakota; Title: Land cover change caused by climate changes in the Shyenenne National Grassland, North Dakota between 1930 and 2010. Dates: 3/15/2011 – 3/15/2013 Award Number: 21422-4010-01865. PI: **Jeffrey A. VanLooy**, ESSP, University of North Dakota.

- 2010 \$3,000,000: NASA Grant; Title: Northern Great Plains Center for People and the Environment. Dates: 10/1/2010 – 5/31/2013 Award Number: NNX10AH20G. Co-I: **Jeffrey A. VanLooy**, ESSP, University of North Dakota.
- 2006 \$12,000: Graduate Research Fellowship; University of Utah Graduate School; awarded for one year, used to complete dissertation research. Dates: 8/15/2006 – 5/15/2007. PI: **Jeffrey A. VanLooy**, Department of Geography, University of Utah.

### **Technology, Software, and Data**

- 2012 \$5,250: NASA ASF (Alaska Satellite Facility) research proposal to gain access to PALSAR satellite data to conduct research on increasing wetlands in the Sheyenne National Grassland, North Dakota. Proposal Number: 641.
- 2007 \$10,600: Intergraph Educational and Student License for Geomedia awarded for two years for Radford University, VA. Renewed in 2009.

### **Travel**

- 2016 \$438.86: University of North Dakota Senate Scholarly Activities Committee award for assistance in travel to attend the national meeting of the Association of American Geographers in San Francisco, CA; March 29 – April 2, 2016.
- 2015 \$178.86: University of North Dakota Senate Scholarly Activities Committee award for assistance in travel to attend the national meeting of the Association of American Geographers in Chicago, IL; April 20 – 25, 2015.
- 2014 \$253.24: University of North Dakota Senate Scholarly Activities Committee award for assistance in travel to attend the national meeting of the Association of American Geographers in Tampa, FL; April 8 – 12, 2014.
- 2013 \$391.93: University of North Dakota Senate Scholarly Activities Committee award for assistance in travel to attend the national meeting of the Association of American Geographers in Los Angeles, CA; April 9 – 13, 2013.
- 2012 \$328.34: University of North Dakota Senate Scholarly Activities Committee award for assistance in travel to attend the national meeting of the Association of American Geographers in New York, NY; February 23 – 27, 2012.

### **Unfunded**

- 2016 \$455,149: NSF; REU Site: The Environmental Impacts of the Changing Cryosphere on Water Resources of the Wind River Basin and Northern Plains: 1/1/2017 – 12/31/2019. PI: Gregory Vandenberg, Department of Geography and GISc., University of North Dakota; Co-PI: **Jeffrey A. VanLooy**, ESSP University of North Dakota.
- 2014 \$119,335: Great Northern Landscape Conservation Cooperative; Title: Measuring glacial melt rates and influences on hydrologic systems in the Rocky Mountain region of the Great Northern Landscape Conservation Cooperative. P.I.: **Jeffrey A. VanLooy**, ESSP, University of North Dakota.

- 2014 \$511,473: NASA Land Cover/Land Use Change: Multisource Land Imaging Science; Title: Multisource Imaging Toolbox for Earth Resources (MITER): Integrating multisource imaging data and algorithms into an application toolbox for assessing temporal and spatial changes in global land-use and land-cover. P.I.: **Jeffrey A. VanLooy**, ESSP University of North Dakota, Co-I: Soizik Laguette, ESSP University of North Dakota, Co-I: James Goodman, HySpeed Computing, Miami, FL.
- 2013 \$99,569: United States Department of State; Title: The U.S.-Russia Peer-To-Peer Dialogue Program. PI: Andrei Kirilenko, ESSP, University of North Dakota; Co-I: **Jeffrey VanLooy**, ESSP, University of North Dakota.
- 2013 \$474,558: NSF, CAREER; Title: Influence of spatially variable surface elevation change rates of small mountain glaciers in estimating the remaining time of glacier existence. PI: **Jeffrey A. VanLooy**, ESSP, University of North Dakota.
- 2013 \$679,566: NASA, Terrestrial Ecology; Title: Multiple-use land management and conservation of protected areas: Sheyenne National Grassland as a scalable "model" of functional challenges. PI: Michael Hill, ESSP, University of North Dakota; Co-I: **Jeffrey A. VanLooy**, ESSP, University of North Dakota.
- 2013 \$7,500: ND EPSCoR: Advanced Undergraduate Research Award (AURA); Title: Assessment of surface water resources in the Northern Great Plains and Rocky Mountains. PI: Gregory S. Vandenberg, Geography, University of North Dakota; Co-I: **Jeffrey A. VanLooy**, ESSP, University of North Dakota.
- 2012 \$9,227.54: ND EPSCoR: UND Equipment Grant Initiative; Title: Measurements of glacial changes in the Wind River Mountains, Wyoming, and their contributions to regional water resources. PI: **Jeffrey A. VanLooy**, ESSP, University of North Dakota.

## **INSTRUCTED CLASSES**

### **Full Instructor Duties**

#### **Sustainability Science: ESSP 200**

Department of Earth System Science and Policy:  
University of North Dakota; Grand Forks, ND

-Lectured undergraduate students in an introductory class on sustainability science, including topics on definitions, principles, history, indicators, and scientific methods and research on environmental and human sustainability issues.

#### **Land and Water Sustainability: ESSP 320**

Department of Earth System Science and Policy:  
University of North Dakota; Grand Forks, ND

-Lectured undergraduate students on advanced topics of sustainable use of land and water resources from a systems-oriented approach. Topics included discussing geomorphological and hydrological processes related to mineral and water resources, extraction and processing of resources, economic impacts due to resource use, and pioneering methods in sustainable resources use and alternative sources of mineral characteristics used in technology.

**Earth System Science and Policy II: Geosphere Block: ESSP 502**

Department of Earth System Science and Policy;  
University of North Dakota; Grand Forks, ND

-Lectured graduate students on topics of geomorphology, climatology, and use of remote sensing and GIS in Earth observation. Class topics focused on case studies of the geosphere and human interactions. Classes consisted of lectures, discussions, student run discussion topics, final group projects, and labs.

**Advanced Topics in Geospatial Technology: ESSP 540**

Department of Earth System Science and Policy;  
University of North Dakota; Grand Forks, ND

-Lectured graduate students on the use and integration of geospatial technology and data for enhanced analysis of geospatial problems. Class involved both lecture and lab with hands-on experience in integrating geospatial software (e.g GIS and remote sensing) and data (various vector and raster data sets). Data collection technology and techniques were also explored through the use of GPS, laser range finders, and an ASD.

**Directed Study: ESSP 594**

Department of Earth System Science and Policy;  
University of North Dakota; Grand Forks, ND

-Mentored students one-on-one regarding specific studies related to their research interests. Course work involved literature reviews and research papers with weekly meetings to discuss the students' findings and to ask and answer questions related to the research. Objectives of the directed studies typically focused on providing students an avenue to focus on ideas for their thesis topics.

**Physical Geography: Geography 130**

Department of Geography; Radford University; Radford, VA

-Lectured on topics of physical geography, including earth/sun relationships, meteorology, climatology, and geomorphology, as well as human-environment interactions.

**Introduction to GIS: Geography 250**

Department of Geography; Radford University; Radford, VA

-Lectured on the theory and application of Geographic Information Systems. Included a lab component for students instruction on the use of ESRI's ArcGIS program, as well as Geomedia from Intergraph.

**Fundamentals of Cartography: Geography 270**

Department of Geography; Radford University; Radford, VA

-Lectured on topics of the scientific and artistic principles of cartography, including map projections, scale and coordinate systems, map reading, map design, as well as cartographic technology such as remote sensing and GIS.

**Biogeography: Geography 335**

Department of Geography; Radford University; Radford, VA

-Lectured on topics of the spatial relationship between flora and fauna, and the physical environment. Focused on how different environmental gradients affect life on Earth.

**Geomorphology: Geography 350/Geology 360**

Department of Geography; Radford University; Radford, VA

-Lectured on topics of geomorphology including weathering, mass wasting, fluvial processes, glacial processes, karst topography, and coastal processes. Course included a lab manual in which weekly assignments were conducted.

**Environmental Analysis Through Remote Sensing:** Geography 5110/6110  
Department of Geography; University of Utah; Salt Lake City, UT  
-Lectured on topics of remote sensing theory and application, including electromagnetic energy properties, preprocessing, geometric correction, and image analysis.

**Geography of North America:** Geography 3620  
Department of Geography; University of Utah; Salt Lake City, UT  
-Lectured to a large Regional Geography class on the physical and human geography of North America with an emphasis on cultural diversity.

**World Regional Geography:** Geography 1300  
Department of Geography; University of Utah; Salt Lake City, UT  
-Lectured to large World Regional Geography classes on the interaction between physical and human geography for many realms and regions of the world.

### Teaching Assistant Duties

**Environmental Analysis Through Remote Sensing, Lab:** Geography 5110/6110  
Department of Geography; University of Utah; Salt Lake City, UT  
-Instructed in lab on topics of remote sensing while using ENVI.

**Principles of Cartography, Lab:** Geography 3040  
Department of Geography; University of Utah; Salt Lake City, UT  
-Instructed in lab on topics of cartographic design while using ArcGIS.

**Environmental Geography I and II, Labs:** Geography 221 and 321  
Department of Geography; Kansas State University; Manhattan, KS  
-Instructed in lab on topics of physical geography including meteorology, climatology, and geomorphology.

### CONFERENCE PRESENTATIONS

#### First Author and Presenter

- 2017 **“Long-term Monitoring of Ice in one of the World’s Most Iconic Wildernesses: Potential Benchmark Glaciers in the Greater Yellowstone Ecosystem,”** paper presented at the American Association of Geographers national annual meeting; Boston, MA
- 2016 **“Monitoring Changing Glacial Conditions and Contributions to Streamflow Across the Southern Greater Yellowstone Ecosystem,”** paper presented at the 13<sup>th</sup> Biennial Scientific Conference on the Greater Yellowstone Ecosystem; Jackson Lake Lodge, Grand Teton National Park, WY
- 2016 **“Estimations of recent glacier surface elevations changes in the Wind River Range, Wyoming,”** paper presented at the *Association of American Geographers* national annual meeting; San Francisco, CA
- 2015 **“Continental Glacier meltwater dynamics in the Northern Wind River Range, Wyoming,”** paper presented at the *Association of American Geographers* national annual meeting; Chicago, IL



- 2015 **“Creating Digital Elevation Models (DEMs) from International Space Station Agricultural Camera (ISSAC) images: Lessons learned,”** poster presented at the annual *Scholarly Forum* sponsored by the University of North Dakota, School of Graduate Studies; Grand Forks, ND
- 2014 **“Analyzing changes and differences in glacial melt rates across the Southern Greater Yellowstone Ecosystem,”** paper presented at the *12<sup>th</sup> Biennial Scientific Conference on the Greater Yellowstone Ecosystem*; Mammoth Hot Springs, WY
- 2014 **“ISS Agricultural Camera: Land cover research using a three band camera,”** paper presented at the *3<sup>rd</sup> Annual ISS Research and Development Conference*; Chicago, IL
- 2014 **“The International Space Station Agricultural Camera: A description of inventory from a unique space borne sensor,”** paper presented at the *Association of American Geographers* national annual meeting; Tampa, FL
- 2013 **“Calculating ice volume and estimating remaining “life span” of Continental Glacier, Wyoming using ice penetrating radar and surface elevation data,”** paper presented at the *Association of American Geographers* national annual meeting; Los Angeles, CA
- 2012 **“Mapping surface and volume changes of Continental Glacier in the Wind River Range, WY: 1966 – 2011,”** paper presented at the *Association of American Geographers* national annual meeting; New York, NY
- 2011 **“Continued thinning of Ha-Iltzuk Icefield, Southwest British Columbia, 2004 – 2010,”** paper presented at the *Association of American Geographers* national annual meeting; Seattle, WA
- 2010 **“Use of historical elevation data to calculate surface elevation and volume changes of Ha-Iltzuk Icefield in southwest British Columbia, 1970 – mid1980,”** paper presented at the *International Glaciological Society: International Symposium on Earth’s Disappearing Ice: Drivers, Responses, and Impacts*; Ohio State University, Columbus, OH
- 2010 **“Multidecadal surface elevation and volume change rates of a British Columbian Icefield,”** poster presented at the *Association of American Geographers* national annual meeting; Washington, DC
- 2009 **“The Situation with Geographic Education in the United States,”** panel discussion with Johnny Coomansingh, Ph.D. (Minot State University), Greg Vandeberg, Ph.D. (University of North Dakota), and Dave Lanegran, Ph.D. (Macalester College) at the *West Lakes Division of the Association of American Geographers* annual meeting; St. Paul, MN
- 2009 **“Estimation of agricultural land and revenue loss due to catastrophic flooding,”** paper presented at the *West Lakes Division of the Association of American Geographers* annual meeting; St. Paul, MN
- 2009 **“Determining agricultural land use change due to river channel changes caused by flooding,”** poster presented at the *American Society for Photogrammetry and Remote Sensing* national annual meeting; Baltimore, MD

- 2008 **“Comparison of two techniques for calculating surface elevation changes of mountain glaciers,”** paper presented at the *Association of American Geographers* national annual meeting; Boston, MA
- 2007 **“Determining recent melt rates and potential sea level rise contribution of five southwest British Columbia icefields,”** paper presented at the *Association of American Geographers* national annual meeting; San Francisco, CA
- 2006 **“Rapid thinning of the Harding Icefield and surrounding glaciers, Alaska, 1950 – 1999,”** poster presented at the *Great Plains/Rocky Mountains and West Lakes Divisions of the Association of American Geographers* joint annual meeting; Lincoln, NE
- 2006 **“Accelerating melting of Harding Icefield, Alaska”**, paper presented at the *Northwest Glaciology* annual meeting; Fairbanks, AK
- 2006 **“Comparison of Glacial Changes between the Harding and Juneau Icefields, Alaska 1950 – 2000, using Remote Sensing Techniques”**, paper presented at the *Association of American Geographers* national annual meeting; Chicago, IL
- 2005 **“Monitoring Glacial Changes on the Harding Icefield, Alaska using Remote Sensing Techniques”**, paper presented at the *Association of American Geographers* national annual meeting; Denver, CO
- 2004 **“A GIS-based Index of Flight Path Vulnerability to Volcanic Eruptions”**, paper presented at the *Great Plains/Rocky Mountain Division of the Association of American Geographers* annual meeting; Sioux Falls, SD
- 2004 **“Historical Channel Change along the Cimarron River Southwestern Kansas 1953-2001”**, paper presented at the *Association of American Geographers* national annual meeting; Philadelphia, PA
- 2003 **“Using Synthetic Aperture Radar to Observe Changes in Alaskan Glaciers Related to Climate Change”**, paper presented at the *Great Plains/Rocky Mountain Division of the Association of American Geographers* annual meeting; Manhattan, KS
- 2001 **“Climate Change in the central Great Plains from the Holocene to the Present”**, paper presented at the *Great Plains/Rocky Mountain Division of the Association of American Geographers* annual meeting; Omaha, NE

#### **Co-Authored Presentations (Non-presenter)**

- 2015 **“Continental Glacier meltwater contributions to late summer stream flow and stream nutrient levels in the northern Wind River Range, Wyoming,”** Gregory Vandeberg and **Jeffrey VanLooy**; paper presented at the *Prairie Division of the Canadian Association of Geographers* annual meeting; Kenora, ON
- 2015 **“Geochemistry of Continental Glacier meltwater in the northern Wind River Range, Wyoming,”** Gregory Vandeberg and **Jeffrey VanLooy**; paper presented at the *Association of American Geographers* national annual meeting; Chicago, IL

- 2014 **“Ice volume estimation inferred from ice thickness and surface measurements for Continental Glacier, Wind River Range, Wyoming,”** Gregory Vandeberg, **Jeffrey VanLooy**, Clement Miede, and Richard Forster, paper presented at the *Geographic Research Seminar*, Department of Geography and Environmental Studies, University of Regina; Regina, SK
- 2013 **“Glacial melt water dynamics in the northern Wind River Range, Wyoming,”** Gregory Vandeberg, **Jeffrey VanLooy**, Clement Miede, and David Butz, paper presented at the *Association of American Geographers* annual meeting; Los Angeles, CA

#### INVITED LECTURES

- 2017 **“Out of Sight, Out of Mind: The Critical Need for Researching Glaciers in the Greater Yellowstone Ecosystem,”** 48<sup>th</sup> Annual South Dakota State Geography Convention; Brookings, SD (March)
- 2016 **“Late Summer Streamflow Contributions from Glacial Meltwater in the Wind River Range, Wyoming,”** The Nature Conservancy; Lander, WY; Virtual Meeting – Via Skype (December)
- 2016 **“Wind River Glacier Study: Surface Elevation Change Analysis of Bull Lake Creek and Torrey Creek Glaciers, Wind River Range, Wyoming,”** Greater Yellowstone Climate Change Adaptation Subcommittee Meeting; United States Forest Service; Bozeman, MT; Virtual Meeting – Via Live Meeting (May)
- 2015 **“Wind River Glacier Study: Stream Flow Contribution and Water Quality Analysis from Bull Lake Creek Glaciers, Wind River Range, Wyoming,”** Greater Yellowstone Hydrologists Meeting; United States Forest Service; Bozeman, MT; Virtual Meeting – Via Live Meeting (December)
- 2015 **“Glaciers as a Water Resource: Analysis of Stream Flow Contribution from Wind River Range Glaciers, Wyoming,”** Leading Edge of Earth and Planetary Sciences (LEEPS) lecture; Harold Hamm School of Geology and Geological Engineering; University of North Dakota; Grand Forks, ND (November)
- 2015 **“Conducting Research in the Wilderness: The Wind River Range Experience,”** Leading Edge of Earth and Planetary Sciences (LEEPS) lecture; Harold Hamm School of Geology and Geological Engineering; University of North Dakota; Grand Forks, ND (November)
- 2015 **“Ice Volume and Melt Water Estimation of Wind River Range Glaciers, Wyoming,”** Wyoming Geological Association; Casper, WY (October)
- 2013 **“Glacial Conditions in the Wind River Range and Greater Yellowstone Area: Research Results from Continental Glacier and Proposed Future Studies,”** Greater Yellowstone Coordinating Committee Meeting; United States Forest Service; Webinar based in Bozeman, MT (October)
- 2013 **“Ice Volume Changes and Melt Water Dynamics of Continental Glacier, Northern Wind River Range, Wyoming,”** Forum on Contemporary Geographic Issues; Department of Geography; University of North Dakota; Grand Forks, ND (January)

- 2010 **“White Summer: Experience and Influence from the Juneau Icefield Research Program,”** Forum on Contemporary Geographic Issues; Department of Geography; University of North Dakota; Grand Forks, ND (October)
- 2003 **“Changes in Channel Morphology along the Cimarron River in southwest Kansas: 1953 – 2001”**  
Department of Geography; University of Idaho; Moscow, ID (February)

#### COMMUNITY LECTURES

- 2014 **“Expeditions in America’s Backyard: Glacial Research in the Wind River Range, Wyoming”**, presented to the public during Geography Awareness Week, sponsored by the Department of Geography, University of North Dakota, Grand Forks, ND (11-18-14)
- 2013 **”Earth System Science and Policy: Researching and Understanding Our Environment”**, presented to the Grand Forks, ND Chapter of the Lion’s Club (1-16-13)

#### ACADEMIC GUEST LECTURES

- 2016 **“Interpolation Methods in ArcGIS for Determining Glacier Ice Volume Changes,”**  
Department of Geography, University of North Dakota  
Grand Forks, ND (February)  
Geog 574: Advanced GIS
- 2015 **“RS/GIS Integration,”**  
Department of Space Studies  
Grand Forks, ND (February)  
Space Studies 522: Remote Sensing Principles
- 2014 **“Researching Glacial Conditions: Continental Glacier, Wyoming,”**  
College of Arts and Science, University of North Dakota  
Grand Forks, ND (February)  
Arts and Science 299: U.S. Master Seminar
- 2012 **“Mountain Glaciers: An Important Water Resource,”**  
Department of Geography, University of North Dakota  
Grand Forks, ND (November)  
Geography 121: Global Physical Environment
- 2010 **“Glacial Research with Remote Sensing,”**  
Department of Geography, University of North Dakota,  
Grand Forks, ND (October)  
Geography 374 Environmental Remote Sensing
- 2010 **“Energy Usage: Origins, Extraction, and Consequences”**  
Department of Earth System Science and Policy, University of North Dakota,  
Grand Forks, ND (October)  
ESSP 501 Earth System Science and Policy I: Energy Block
- 2007 **“Research with Remote Sensing”**  
Department of Geography, Radford University, Radford, VA (November)  
Geography 425 Digital Image Processing

- 2007 **“Mountain Glaciers and Their Contribution to Sea Level Rise”**  
Department of Geography, University of Utah, Salt Lake City, UT (January)  
Geography 3292/5292 Snow and Ice
- 2004 **“Using Synthetic Aperture Radar to Observe Glacial Characteristics”**  
Department of Geography, University of Utah, Salt Lake City, UT (October)  
Geography 5130/6130 Advanced Remote Sensing Applications
- 2003 **“Density Slicing Applications”**  
Department of Geography, University of Utah, Salt Lake City, UT (March)  
Geography 5110/6110 Environmental Analysis Through Remote Sensing
- 2003 **“Supervised Classification Methods in Remote Sensing”**  
Department of Geography, University of Utah, Salt Lake City, UT (February)  
Geography 5110/6110 Environmental Analysis Through Remote Sensing

#### **OTHER PRESENTATIONS**

- 2015 **“Knife Point Glacier Research Expedition: Wind River Range, Wyoming 2015”**, Department of Earth System Science and Policy; University of North Dakota; Grand Forks, ND (September)
- 2012 **“Continental Glacier Research Trip: 2012; Wind River Range, Wyoming,”** Department of Earth System Science and Policy; University of North Dakota; Grand Forks, ND (October)
- 2011 **“Monitoring Changes of Continental Glacier in the Wind River Range, WY: Research Techniques and Preliminary Results,”** Department of Earth system Science and Policy; University of North Dakota; Grand Forks, ND (October)
- 2011 **“Land Use Vulnerability to Flood Events Caused by Combined Natural and Anthropogenic Effects,”** Department of Earth System Science and Policy; University of North Dakota; Grand Forks, ND (February)
- 2009 **“Estimation of Agricultural Land and Revenue Loss due to Catastrophic Flooding along the Cimarron River, SW Kansas,”** Department of Geology/Geography; Eastern Illinois University; Charleston, IL (November)
- 2009 **“Use of Remote Sensing Techniques to Calculate Mountain Glacier Changes, Related to Climate Changes,”** Earth System Science and Policy Program; University of North Dakota; Grand Forks, ND (November)
- 2008 **“Determining Glacial Changes of Five British Columbia Icefields using Remote Sensing Techniques, mid-1980s to 1999”**  
Department of Geography; University of Northern Iowa; Cedar Falls, IA (December)
- 2007 **“Geomorphology and Mass Balance of Mountain Glaciers”**  
Department of Geography; Radford University; Radford, VA (February)

## SERVICE

### Professional

- Organized and chaired a session entitled “Monitoring glacial changes in relation to climate change” at the *American Association of Geographers* national annual meeting, Boston, MA (April 2017)
- Participated in the Greater Yellowstone Ecosystem (GYE) glacier monitoring protocol meetings to determine the criteria for benchmark glaciers in the GYE; Bozeman, MT (May 2016), and Jackson Lake Lodge, WY (October 2016)
- Elected President of the Cryosphere specialty group of the *Association of American Geographers*; 2016 – 2019
- Chair of a session entitled “Snow and Ice” at the *Association of American Geographers* national annual meeting, San Francisco, CA (April 2016)
- Participated as a panelist for a panel discussion on impacts of climate change on culture for the *Climate and Culture Festival* at the University of North Dakota (12-9-2015)
- Reviewed applications for the ND View scholarship (October 2015)
- Co-organized and chaired a session entitled “Water Resources of the Wind River Range, Wyoming” at the *Association of American Geographers* national annual meeting, Chicago, IL (April 2015)
- Chair of a session entitled “Remote Sensing of Forests and Agriculture” at the *Association of American Geographers* national annual meeting, Tampa, FL (April 2014)
- Elected Treasurer/Secretary of the Cryosphere specialty group of the *Association of American Geographers*; 2013 - 2016
- Co-organized and chaired a session for the national annual meeting of the *Association of American Geographers* in Los Angeles, CA entitled “Mountain Glaciers: Changes and Resource Impacts”; 4-10-2013
- Invited to participate in the European Space Agency Climate Change Initiative Round Robin experiment for co-registration of DEMs for glacial research (March 2012)
- Assisted in judging the R. S. Tarr student poster competition for the cryosphere specialty group at the *Association of American Geographers* national annual meeting in New York, NY (2-25-2012)
- Provided GIS and Remote Sensing assistance in a project regarding the impact of oil extraction on the Fort Berthold Indian Reservation conducted by Kerry Hartman, Ph.D. at Fort Berthold Community College, New Town, ND (July 2011)
- Chair of a session entitled “Remote Sensing, Climatology, and Water Resources” at the *Association of American Geographers* national annual meeting, Seattle, WA (April 2011)
- Reviewed applications for the Dissertation Initiative on Climate Change Research (DISCCRS) VI Symposium to be held in Colorado Springs, CO in October 2011 (April 2011)
- Reviewer for the journal *The Professional Geographer* (PG-2008-0016)
- Reviewer for the journal *Coasts and Estuaries* (ESCO-D-08-00053)
- Reviewer for the journal *Remote Sensing of Environment* (RSE-D-09-00783)
- Reviewer for the journal *Geocarto International* (TGEI-2010-0063), (TGEI-2010-0082), (TGEI-2011-0002), (TGEI-2011-0076), (TGEI-2011-0094), (TGEI-2011-0107), (TGEI-2012-0044), (TGEI-2012-0120), (TGEI-2013-0018), (TGEI-2013-0053), (TGEI-2014-0030), (TGEI-2014-0096), (TGEI-2015-0015), (TGEI-2015-0039), (TGEI-2015-0081), (TGEI-2015-0126), (TGEI-2015-0126.R1), (TGEI-2015-0270)
- Reviewer for the *Canadian Journal of Remote Sensing* (CJRS-10-0116)
- Reviewer for the journal *The Cryosphere Discussions* (5, 1365-1382, 2011)

- Reviewer for the *International Journal of Remote Sensing Letters* (TRES-LET-2011-0173)
- Reviewer for the *International Journal of Remote Sensing* (TRES-PAP-2015-0750), (TRES-PAP-2016-0106.R1)
- Reviewer for the journal *Geomorphology* (Geomor-4252)
- Reviewer for the journal *Polar Research* (23151)
- Reviewer for the journal *Geography Compass* (GECO-0986)
- Reviewer for National Science Foundation Grant Proposal (1023531)

## **University**

### **(University of North Dakota)**

- Judge for the student poster competition at the UND Graduate Research Achievement Day (GRAD) sponsored by the UND School of Graduate Studies (3-2-2017)
- Member of the University Senate representing the John D. Odegard School of Aerospace Science (August 2015 – May 2016)
- Member of the University Senate Curriculum Committee (August 2015 – May 2018)
  - Elected to Chair for 2017-2018 academic year
- Member of the evaluation committee for the Natural Sciences division for UND Collaborative Seed Grants and Faculty Seed Grants (1-27-2015)
- Selected for and participated in the stakeholder meeting for the UND nickname conducted by the UND Nickname and Logo Process Recommendation Task Force (11-7-2014)
- Co-chair for the Executive Committee within the Council on Environmental Stewardship and Sustainability (Fall 2014 – present)
  - Contributed to the Education Goals and Objectives section of the UND Climate Action Plan for 2015
- Co-chair on Sustainability Education subcommittee within the Council on Environmental Stewardship and Sustainability (Fall 2012 – present)
- Chair for the Social and Behavioral Sciences subcommittee for the Faculty Research Seed Money Committee (February 2012)

## **College**

### **(John D. Odegard School of Aerospace Sciences, University of North Dakota)**

- Tenure and Promotion Committee for the John D. Odegard School of Aerospace Science (Fall 2014 – Spring 2015)

## **Departmental**

### **(Department of Earth System Science and Policy, University of North Dakota)**

- Graduate Director for ESSP (Fall 2016 – present)
  - Traveled to the University of Minnesota-Morris for ESSP graduate program student recruitment (2-23-2017)
- Undergraduate Coordinator for the Minor in Sustainability Science in ESSP (Fall 2013 – Fall 2016)
- Chair of the departmental faculty evaluation committee (Fall 2013 – Spring 2014)
- Coordinator of the Graduate Research Assistants for ESSP (Fall 2013 – Spring 2014)
- Co-organized and assisted with a “GPS scavenger hunt” for students participating in the North Dakota State Science Fair (April 2011)
- Attended a conference entitled “Integrating Sustainability into the Undergraduate Curriculum: Best Practices and Pedagogical Resources,” as a fact finding mission for starting an undergraduate Minor in Sustainability; Luther College, Decorah, IA (April 2011)

- Adjunct Assistant Professor of the Department of Geography, University of North Dakota, Grand Forks, ND (January 2011 – December 2018)
- Earth System Science and Policy Liaison to the Library (Fall 2010 – present)
- Evaluation Committee for ESSP (Fall 2010 – Spring 2014)
  
- Graduate Faculty (Assistant Member) (Fall 2010 – present)
  - Committee Chair (Major Advisor)
    - Morgen Burke (Ph.D. Department of Earth System Science and Policy)
    - Lance DiAngelis (M.S. Department of Earth System Science and Policy)
  
  - Committee Member
    - Daniel Dixon (M.S. Department of Earth System Science and Policy)
    - Ning Li (M.S. Department of Earth System Science and Policy)
    - Eric Castle (Ph.D. Department of Earth System Science and Policy)
    - Afshin Shabani (Ph.D. Department of Earth System Science and Policy)
    - Eliot Peltier (M.S. Department of Geography)
    - Erica Dolinar (Ph.D. Department of Atmospheric Science)
    - Kelly Gorz (M.S. Department of Geology)
    - Rebecca Lemons (Ph.D. Department of Earth System Science and Policy)
    - Cherrie New (Ph.D. Department of Earth System Science and Policy)
    - Rebecca Maska (M.S. Department of Earth System Science and Policy)
    - Timothy Baker (M.S. Department of Earth System Science and Policy)
  
  - Committee Chair (Major Advisor) for Completed Graduate Degrees
    - Michael Knudson (M.S. Department of Earth System Science and Policy): Defended April 2014; Graduated May 2014
    - Isaac Simon (M.S. Department of Earth System Science and Policy): Defended March 2016; Graduated May 2016
    - Stefano Potter (M.S. Department of Earth System Science and Policy): Defended April 2017; Graduated May 2014
  
  - Committee Member for Completed Graduate Degrees
    - Katie Engelmann (M.S. Department of Geography) Defended April 2017; Graduated May 2017
    - Eric Torgerson (M.S. Department of Geography) Defended April 2017; Graduated May 2017
    - Wenyu Song (M.E.M. Department of Earth System Science and Policy) Defended September 2016; Graduated December 2016
    - Brent Silvis (M.S. Department of Earth System Science and Policy) Defended April 2016; Graduated May 2016
    - Qiang Zhou (Ph.D. Department of Earth System Science and Policy) Defended July 2015; Graduated August 2015
    - Melissa Wygant (M.S. Department of Geography): Defended July 2014; Graduated August 2014
    - Brett Sergenian (M.S. Department of Geography): Defended April 2014; Graduated May 2014
    - Ashley Toole (M.E.M. Department of Earth System Science and Policy): Defended November 2012; Graduated December 2012



- Nicholas Roehrdanz (M.S. Department of Geography): Defended October 2012; Graduated December 2012

**(Department of Geography, Radford University)**

- Geography Liaison to the Library (Fall 2007 to Spring 2010)
  - Ordered many new updated books and videos needed for an enhanced educational experience in geography
- Geography Club Faculty Advisor (Fall 2007 to Spring 2010)
  - Assisted in organizing Geography Awareness Week events, including an information table, bake sale table, and geocaching
  - Assisted students in preparing for presentations at the Association of American Geographers National Annual Meeting (Washington, D.C. 2010)
  - Assisted students in sponsoring and clean-up of city roadway (April 2009 – Spring 2010)
- Gamma Theta Upsilon Faculty Sponsor
  - Reactivated the Kappa Omicron Chapter and initiated five new members in Spring 2009 and four new members in Spring 2010
- Alternate Faculty Senate Member (Fall 2007 to Spring 2009)
- Traveled to the University of South Carolina, Department of Geography to discuss and share ideas on student recruitment and retention (Spring 2008)
- Attended the June 2009 summer assembly of the University Consortium for Geographic Information Science to network, learn more about the organization, and help determine if Radford University should apply to become a member institution

**Personal Professional Development**

**(University of North Dakota)**

- Participated in the University Workshop, “Active Learning and Backward Course Design” (May 2016)
- Attended a MATLAB seminar to learn how MATLAB software can be useful for my research (10-14-14)
- Participated in the University Workshop, “Teaching with Technology” (May 2014)
- Attended the 2<sup>nd</sup> Annual Meeting of the Natural Capital Project in Stanford, CA to learn how to incorporate the ecosystem services tool InVEST into my research (March 2014)
- Participated in the Alice T. Clark Alumni symposium on Tenure and Promotion (10-31-13)
- Participated in the University Workshop, “Writing Across the Curriculum” (May 2013)
- Participated in the NSF CAREER Proposal-Writing Workshop (4-17-2013)
- Participated in the Second Year Alice T. Clark Mentoring Program; Fall 2011 – Spring 2012
  - Mentor: Brad Rundquist (Department of Geography)
- Attended the Collaboration Luncheon for Young Professionals sponsored by UND which involved networking with other university faculty and staff and discussing potential university and community involvement, such as community service (1-27-2012).
- Initiated a web seminar conducted by Frontier Precision on the use of Trimble GeoXH GPS handheld units; attended by several faculty and students from across campus (4-26-2011)
- Attended the ND EPSCoR grant writing workshop (10-7-2010)
- Participated in Alice T. Clark Mentoring Program; Fall 2010 – Spring 2011
  - Mentor: Brad Rundquist (Department of Geography)

### **(Radford University)**

- Attended a grant writing workshop sponsored by the Radford University Department of Sponsored Programs in September 2009
- Attended the May 2008 “Our Turn” session on “Grading Courses in Order to Encourage Student Involvement” presented by the Faculty Development Center
- Attended the New Faculty Institute for the 2007 – 2008 academic year

### **Community Service**

- Assisted in judging the North Dakota State Science and Engineering Fair for Middle and High School students; Grand Forks, ND (4-5-2013)
- Assisted in judging the Northwest Regional Science and Engineering Fair for Middle and High School students in Minnesota; Crookston, MN (2-11-2012)
- Assisted in judging the Northeast Regional Science and Engineering Fair for Middle and High School students in North Dakota; Grand Forks, ND (3-2-2011)
- Member of the Church Council at Wesley United Methodist Church, Grand Forks, North Dakota (November 2012 – 2015)
- Co-Leader of the “Star Givers” (Head Start Holiday Gift) program at Wesley United Methodist Church, Grand Forks, North Dakota (2010 – present)

### **TECHNICAL SKILLS**

- ESRI ArcView and ArcGIS
- ERDAS Imagine and ENVI Remote Sensing Programs
- Laser Range Finder (Impulse XL 200)
- Ice Penetrating Radar System (Blue Systems, Inc.)
- Computer Cartography (CorelDRAW)
- GPS data collection (Trimble and Garmin)
- Microsoft Word, PowerPoint, and Excel

### **MEMBERSHIPS**

- Member, Gamma Theta Upsilon (International Geography Honor Society)
- Member, Association of American Geographers
- Member, American Geophysical Union
- Member, International Glaciological Society

### **AWARDS, HONORS, AND REMARKS**

- Attended the High Elevation Archeology meeting in Cody, WY to look for ways to collaborate in research between the GYCC Glacier Monitoring Group and other researchers in high elevation locations in the Greater Yellowstone Ecosystem (May 2017)
- Interviewed by Prairie Public Radio for a segment on the show “Main Street” on the topic of conducting research on the glaciers of the Wind River Range, Wyoming (3-1-2016)
- Article featured in the Dakota Student (“UND scientists study glacial melt” volume 133, issue 35; February 23, 2016) on the Wind River Range Glacial research conducted in collaboration with Gregory Vandenberg from the Department of Geography.
- Article featured in UND Discovery (Autumn/Winter 2015 issue) on glacial research in the Wind River Range, Wyoming
- Organized and led a research expedition of five people (one faculty, three graduate students, and one undergraduate student) to Knife Point Glacier in the Wind River Range, Wyoming to collect data on stream flow, water quality, and ice surface elevations during August 2015

- Co-led a five person expedition over nine days into the Wind River Range, Wyoming to conduct stream flow and water quality analysis at Continental Glacier; near Pinedale, WY, August 2014
- Organized and led a seven person expedition over eleven days into the Wind River Range of Wyoming to conduct research on Continental Glacier along the Continental Divide; The expedition involved traveling by horseback and backpacking on foot, and using high accuracy GPS, ice penetrating radar, small meteorological equipment, and stream flow meters to map the glacier surface, determine the glacial depth, and calculate hydrologic output; near Pinedale, WY, August 2012
- Feature article in AeroCom magazine for the John D. Odegard School of Aerospace Science (Winter 2012 issue) on Continental Glacier research in Wyoming, August 2011
- Organized and led a five person expedition over ten days into the Wind River Range of Wyoming to conduct research on Continental Glacier along the Continental Divide; The expedition involved traveling by horseback and backpacking on foot, and using high accuracy GPS, laser range finder, ice penetrating radar, small meteorological equipment, and snow probes to map the glacier surface and determine the glacial depth; near Pinedale, WY, August 2011
- Invited to attend the Dissertation Initiative for the Advancement of Climate Change Research (DISCCRS) V Symposium; one of 34 selected out of 175 applicants worldwide to attend the NSF and NASA funded symposium focused on increasing networking and grant collaboration of interdisciplinary scientists regarding climate change; Saguaro Lake Ranch, Arizona, March 2010
- Interviewed by local National Public Radio affiliate WVTF on the topic of the importance of geography during Geography Awareness Week, November 2007
- Awarded Most Outstanding Graduate Student for the 2006-2007 academic year; Department of Geography, University of Utah, Salt Lake City, UT
- Awarded a Graduate Research Fellowship for the 2006-2007 academic year; Graduate School, University of Utah, Salt Lake City, UT
- Awarded Best Student Poster at the joint meeting of the Great Plains/Rocky Mountains and West Lakes Divisions of the Association of American Geographers in Lincoln, NE 2006
- Awarded Best Student Paper at the Great Plains/Rocky Mountains Division Meeting of the Association of American Geographers in Sioux Falls, SD 2004
- Donald A. Lewon Graduate Honor Roll Scholarship 2002-2003; College of Social and Behavioral Science, University of Utah, Salt Lake City, UT
- Meritorious Achievement Award 2000; Department of Geography, University of Idaho, Moscow, ID
- National Aeronautic and Space Administration (NASA) Fellowship to attend the Juneau Icefield Research Program in Alaska during summer 1999
- Competed in World Geography Bowl at the Association of American Geographers National Conferences in Los Angeles, CA 2002, New Orleans, LA 2003, and Philadelphia, PA 2004

## REFERENCES

Richard R. Forster, Ph.D.  
Department of Geography  
260 South Central Campus Dr., Room 270  
University of Utah  
Salt Lake City, UT 84112  
(801) 581-3611  
rick.forster@geog.utah.edu

Charles W. Martin, Ph.D.  
Department of Geography  
118 Seaton Hall  
Kansas State University  
Manhattan, KS 66506  
(785) 532-3416  
cwmgeog@k-state.edu

Gregory S. Vandeberg, Ph.D.  
Department of Geography  
O'Kelly-Ireland Hall, Room 161  
University of North Dakota  
221 Centennial Drive Stop 9020  
Grand Forks, ND 58202-9020  
(701) 777-4588  
gregory.vandeberg@und.nodak.edu