

CURRICULUM VITA

NAME: Lee Alexander Vierling

DATE: 18 June 2020

RANK OR TITLE: University Distinguished Professor and Department Head

DEPARTMENT: Natural Resources and Society

OFFICE LOCATION AND CAMPUS ZIP: Campus Core, College of Natural Resources Bldg. Room 19

OFFICE PHONE: (208) 885-7911

EMAIL: leev@uidaho.edu

WEB: www.uidaho.edu/cnr/faculty/vierling-1

DATE OF FIRST EMPLOYMENT AT UI: Fall, 2004

DATE OF TENURE: July 1, 2008

DATE OF PRESENT RANK OR TITLE: May 1, 2020

EDUCATION BEYOND HIGH SCHOOL:

Degrees:

Ph.D., Environmental Biology, University of Colorado at Boulder, 1999.

B.A., Geology, *Magna cum laude* with thesis distinction, The Colorado College, 1992.

EXPERIENCE:

Teaching, Extension, and Research Appointments:

University Distinguished Professor, Department of Natural Resources and Society, University of Idaho (May 2020-present)

Professor, Department of Natural Resources and Society, University of Idaho (September 2015-April 2020).

Associate Professor, Department of Forest, Rangeland, and Fire Sciences, University of Idaho, (July 2008-2015).

Affiliate Faculty, Department of Conservation Social Sciences, University of Idaho, (2013-2015).

Affiliate Faculty, Center for Tropical Agriculture and Ecology (CATIE), Costa Rica (2010-present).

Visiting Scientist, Center for Tropical Agriculture and Ecology (CATIE), Costa Rica (2010-2011).

Harold Heady Endowed Professor of Rangeland Ecology, University of Idaho. (2006-2011).

Assistant Professor, Department of Rangeland Ecology and Management, University of Idaho, (September 2004 – June 2008).

Associate Professor, South Dakota School of Mines and Technology. (April 2004 - September 2004).

Assistant Professor, South Dakota School of Mines and Technology. (June 1999 - April 2004).

Graduate Student/Research Assistant/Teaching Assistant, University of Colorado. (August 1994 - May 1999).

Visiting Professor, The Colorado College. (January 1998).

Paraprofessional, The Colorado College. (1991 - 1993).

Research Assistant, The Colorado College. (May 1990 - August 1990).

Academic Administrative Appointments:

Department Head, Department of Natural Resources and Society (2016-present).

Executive Director, UI-CNR McCall Field Campus and McCall Outdoor Science School (2012-2019).

Governmental:

Research Assistant, National Center for Atmospheric Research. (May 1993 - 1995).

Participant, Graduate Student Summer Fellowship Program, NASA Goddard Space Flight Center.
(June 1995 - August 1995).

Consulting:

Education, Biological Sciences Curriculum Study, Content Reviewer, “Solving Pollution Problems” 4th grade education module, Boulder, Colorado. (1998).
Government, State of Texas Oxidant Study, Boulder, Colorado. (1997).

TEACHING ACCOMPLISHMENTS:

Areas of Specialization:

Global environmental change
Environmental remote sensing
Spatial ecology
Biogeochemistry
Biosphere-atmosphere interactions
Science communication and education (ages “K-gray”)

Courses Taught:

<u>Number</u>	<u>Title</u>	<u>Enrollment</u>	<u>Credit Hours</u>
Summer 1991: The Colorado College			
Geology 130 (TA)	Introductory Geology	20	4
Spring 1993: The Colorado College			
Geology 130 (TA)	Introductory Geology	25	4
Spring 1997: University of Colorado			
Env. Biol. 1040 (TA)	Biology: A Human Approach	20	2
Spring 1998: The Colorado College			
Environmental Science 310	Current Global Change Research	10	2
Spring 2000: South Dakota School of Mines and Technology			
Atmospheric Science 401	Global Environmental Change	6	3
Fall 2000: South Dakota School of Mines and Technology			
Atmospheric Science 510	Introduction to Environmental Remote Sensing	10	3
Atmospheric Science 690	Graduate Seminar in Remote Sensing	5	2
Spring 2001: South Dakota School of Mines and Technology			
Atmospheric Science 401	Global Environmental Change	29	3
Fall 2001: South Dakota School of Mines and Technology			
Atmospheric Science 690	Biosphere-Atmosphere Interactions Seminar	7	2
Spring 2002: South Dakota School of Mines and Technology			
Atmospheric Science 401	Global Environmental Change	23	3
Fall 2002: South Dakota School of Mines and Technology			
Atmospheric Science 410	Introduction to Environmental Remote Sensing	17	3
Spring 2003: South Dakota School of Mines and Technology			
Atmospheric Science 401	Global Environmental Change	20	3

Spring 2004: South Dakota School of Mines and Technology			
Atmospheric Science 401	Global Environmental Change	14	3
Spring 2005: University of Idaho			
Forest Resources 429	Landscape Ecology	29	2
Fall 2005: University of Idaho			
Range Ecology 502	IDL Programming for Natural Resources	3	2
Spring 2006: University of Idaho			
Range Ecology 483	Senior Project Presentation	1	1
Range Ecology 499	DS:Landscape Ecology	2	2
Range Ecology 504-04	ST:Landscape Ecology	4	3
Range Ecology/Forest Resources 429	Landscape Ecology	20	2
Range Ecology/Wildlife/Geography 504	Landscape Genetics	11	2
Range Ecology 404	Landscape Ecology Practicum	2	1
Range Ecology 502-03	Directed Study: GIS in Natural Resources	1	1
Fall 2006: University of Idaho			
Natural Resources 101	Exploring Natural Resources	17	1
Range Ecology 504	Remote Sensing Readings	7	1
Spring 2007: University of Idaho			
Range Ecology/Forest Resources/Geography 501	Ecology From Afar: The Use of Remote Sensing in Spatial Ecology	23	1
Range Ecology/Geography 404	Global Environmental Change	15	3
Range Ecology/Forest Resources 429	Landscape Ecology	15	2
Fall 2007: University of Idaho			
Forest Resources 472	Remote Sensing of the Environment	20	3
Spring 2008: University of Idaho			
REM/GEOG/WLF 504	Landscape Approaches to Conservation and Ecology	10	2
REM/GEOG/WLF 501	Space Matters: Landscape Conservation and Ecology	23	1
REM 501	Tri-State Short Course: Remote Sensing in Rangelands	75	1
Fall 2008: University of Idaho			
REM/FOR 472	Remote Sensing of the Environment	10	3-4
Spring 2009: University of Idaho			
REM/GEOG 450	Global Environmental Change	40	3
REM 429	Landscape Ecology	29	3
Fall 2009: University of Idaho			
REM/FOR 472	Remote Sensing of the Environment	23	3-4
CORE 125	The Earth and Our Place on It (Honors section)	26	4
Spring 2010: University of Idaho			
CORE 175	The Earth and Our Place on It (Honors section)	17	3
Fall 2011: University of Idaho			

REM/FOR 472	Remote Sensing of the Environment	42	3
NR 101	Exploring Natural Resources	22	1
Spring 2012: University of Idaho			
FOR 552	Current Literature in Remote Sensing	6	1
Fall 2012: University of Idaho			
REM/FOR 472	Remote Sensing of the Environment	28	4
Spring 2013: University of Idaho			
FOR 552	Current Literature in Remote Sensing	6	1
Fall 2013: University of Idaho			
REM/FOR 472	Remote Sensing of the Environment	10	4
Spring 2014: University of Idaho			
FOR 552	Current Literature in Remote Sensing	7	1
Fall 2014: University of Idaho			
FOR 501	FRFS Cutting Edge Research	18	1
Spring 2015: University of Idaho			
FOR/REM 501	FRFS Cutting Edge Research	26	1
FOR 552	Current Literature in Remote Sensing	9	1
Fall 2015: University of Idaho			
REM/FOR 472	Remote Sensing of the Environment	18	4
Spring 2016: University of Idaho			
FOR/CSS 504	Treeline: Structure and Function	2	2
FOR 552	Current Literature in Remote Sensing	6	1
Fall 2016: University of Idaho			
REM/FOR 472	Remote Sensing of the Environment	29	4
NRS 501	Contemporary Issues in Society and Natural Resources	23	1
Spring 2017: University of Idaho			
FOR 552	Current Literature in Remote Sensing	7	1
ENVS 400	Environmental Science Seminar	23	2
Fall 2017: University of Idaho			
NRS/FOR 472	Remote Sensing of the Environment	22	4
NRS 501	Contemporary Issues in Society and Natural Resources	9	1
Spring 2018: University of Idaho			
FOR 552	Current Literature in Remote Sensing	8	1
Fall 2018: University of Idaho			
NRS 472	Remote Sensing of the Environment	17	4
Fall 2019: University of Idaho			
NRS 472/504	Remote Sensing of the Environment	17	4
Spring 2020: University of Idaho			
NRS 552	Current Literature in Remote Sensing	7	1
ENVS 102	Field Activities in Environmental Science	14	1

Students Advised:

Undergraduate Advisees:

Ecology and Conservation Biology Program (A=academic advisor; T=thesis advisor):

Jeremy Kestle (A, T)
Owen Baughman (A, T)
Robert Parrett (A)
Jonathan Anderson (A)
Eva Sebesta (A, T)
Nicholas Thimesch (T)
Mark Moroge (T)
Amanda Playter (T)
Rob Gibson (T)
Jeff Bengtson (T)
Mykah Dehle (A)
Samuel Torpey (A)
Jessica Blackport (A)
Conner Butler (A)
Sierra Grove (A)
Dayne Johnson (A)
Spencer Reid (A)
Orion Cardenas-Ritzert (T)

Forest Resources Program:

Ryan Sheridan (T)
Justin Trujillo (A)
Nicholas Zita (A)

Environmental Science Program:

Blaine Krumpe (T)
Nic Turinski (T)
Lonnie Carlson (A)
Anthony Bassak (T)
Currently 3 undergraduate advisees

Rangeland Ecology and Management Program:

Annika Levine (A)
Aubrey Woodcock (A)
Rosana Arrizubieta (A)
Suzanne Johnston (A)
Blas Lord (A)
Adam Mondor (A)
Amanda Smith (A)
Jacob Wheeler (A)

Natural Resource Conservation Program:

William Weygint (A, T)
Currently 4 undergraduate advisees

Undergraduate Student Clubs:

Environmental Science Club, faculty advisor (2019-present)
Conservation and Environment Club, faculty advisor (2019-present)

Ecology and Conservation Biology Club, faculty advisor (2005-2007)

Former Graduate Student Advisees (graduation date, university):

Ph.D. Carlos Silva (2018, University of Idaho, Received Outstanding Departmental and College-wide Graduate Student of the Year Awards)
Dissertation title: “Advanced methods for 3D forest characterization and mapping from lidar remote sensing data”
Current position: Assistant Professor, University of Florida

Heather Greaves (2017, University of Idaho, Received Outstanding Departmental and College-wide Graduate Student of the Year Awards)
Dissertation title: “Applying lidar and high-resolution multispectral imagery for improved quantification and mapping of tundra vegetation structure and distribution in the Alaskan Arctic”
Current position: Research Scientist, University of Alaska-Fairbanks

Aline Ortega-Pieck (2017, University of Idaho/CATIE Joint Doctoral Program)
Dissertation title: “From carbon to fish: Understanding mechanisms of human impacts on freshwater ecosystems”
Current Position: Postdoctoral Scholar, University of Idaho

Peter Schlesinger (2017, University of Idaho/CATIE Joint Doctoral Program)
Dissertation title: “Understanding patterns of land-cover and land-use change in the Trifinio region of Central America”
Current Position: Research Associate, University of Leicester

Carlos Muñoz Brenes (2017, University of Idaho)
Dissertation title: “Crossing the Line on Governance: Evaluating the Impact of National and Transboundary Protected Areas on Land Cover Outcomes in Central America”
Current Position: Chief Social Scientist, Conservation International

Zayra Ramos (2016, University of Idaho/CATIE Joint Doctoral Program)
Dissertation title: “Systematic conservation planning for ecosystem services: opportunities for improving spatial targeting of ecosystem service payments in Costa Rica”
Current Position: Lecturer, University of Wageningen, Netherlands

Troy Magney (2015, University of Idaho, Received Outstanding Departmental, College, and University-wide Graduate Student Awards)
Dissertation title: “Assessing the spatial and temporal controls on plant function using ground-based remote sensing”
Current position: Assistant Professor, University of California, Davis

Adina Chain (2014, University of Idaho/CATIE Joint Doctoral Program)
Dissertation title: “A Functional Trait Based Approach to Understand Tropical Forest Composition and Function in a Costa Rican Landscape”
Current position: Research Associate, CATIE, Costa Rica

Melanie Johnson (2012, University of Idaho)
Dissertation title: “Spatial Approaches for Understanding Current and Future Landscape Development Patterns and Environmental Impacts in a Northern Minnesota Lake District”
Current position: Associate Professor, Paul Smith’s College, New York

Javier Ñaupari (2010, University of Idaho)
Dissertation title: “The Use of Multi-Angle Remote Sensing to Quantify Vegetation Structure and Composition in Semi-Arid Rangelands”
Current position: Associate Professor, Universidad Nacional Agraria La Molina (Peru)

Sebastian Martinuzzi (2010, University of Idaho, Received Outstanding Departmental Graduate Student Award)
Dissertation title: “LiDAR Remote Sensing for Wildlife Habitat Characterization and Modeling: Incorporating Remotely Sensed Vegetation Structure into Current Assessments of Animal Distribution and Conservation”
Current position: Associate Scientist, NASA Goddard Space Flight Center and University of Wisconsin, Madison

Steve Garrity (2010, University of Idaho, Received Outstanding College-wide Graduate Student Award)
Dissertation title: “The Influence of Leaf Pigments, Canopy Phenology, and Solar Radiation Regime on Remotely Sensed Estimates of Photosynthetic Efficiency and Potential, Canopy Photosynthesis, and Net Ecosystem Exchange”
Current position: Director of AROYA Product Development, METER Group, Inc., Pullman, WA

Eva Strand (2007, University of Idaho, Awarded Outstanding REM Graduate Student)
Dissertation title: “Landscape Scale Response to Woody Plant Encroachment in Western Juniper Woodlands: Effects on Spatial Patterns, Biogeochemical Cycling, and Aspen Habitats”
Current position: Associate Professor, University of Idaho

Xuexia Chen (2004, South Dakota School of Mines and Technology)
Dissertation title: “Improvements in Quantifying and Monitoring Terrestrial Land Cover across Scales Using Remote Sensing Techniques”
Current position: Senior Support Scientist, NASA Goddard Space Flight Center, Science Systems and Applications, Inc.

M.S. Samuel Finch (2015, University of Idaho)
Thesis title: “Estimating Nitrogen Content of Dryland Wheat Fields Using Landsat Imagery”

Patrick Adam (2012, University of Idaho)
Thesis title: “Using Satellite and Airborne LiDAR to Predict Woodpecker Presence at the Landscape Scale”

Jessica Yanyin Xu (2010, University of Idaho)
Thesis title: “Measurement of Shrub Canopy Structures Using Terrestrial Laser Scanning and Implications for Airborne LiDAR Application”

Meghan Calhoon (2007, University of Idaho)
Thesis title: “Early Detection of Fire-induced Delayed Tree Mortality Using Hyperspectral Remote Sensing”

Rick Clawges (2006, South Dakota School of Mines and Technology)
Thesis title: “Use of LIDAR in Ecological Investigations: Case Studies for Avian Habitat Assessment and Estimation of Biophysical Properties of Western Larch (*Larix occidentalis*)”

Eric Rowell (2005, South Dakota School of Mines and Technology)

Thesis title: “Estimating Forest Biophysical Variables from Airborne Laser Altimetry in a Ponderosa Pine Forest”

Kurtis Nelson (2005, South Dakota School of Mines and Technology)

Thesis title: “Evaluating the Effects of Spatial Scale on Remotely Sensed Mapping of Burn Severity: A Comparison of Landsat and MODIS Data”

Michael Toomey (2004, South Dakota School of Mines and Technology)

Thesis title: “Remote Sensing of Arboreal Leaf Area Index and Foliar Moisture Using Empirically and Physically-Based Methods”

Subhan Turlapaty (2004, South Dakota School of Mines and Technology)

Thesis title: “Mechanical Engineering Analysis of a Scientific Imaging Aerostat”

Mark Fersdahl (2004, South Dakota School of Mines and Technology)

Thesis title: “Seasonal Variations of MODIS Vegetation Index Products in a Coniferous Forest Canopy”

Denise Dykstra-Santoro (2002, South Dakota School of Mines and Technology)

Thesis title: “An Analysis of Directional Flux Footprints at the Black Hills Experimental Forest AmeriFlux Tower”

Graduate Committee Service (program, major advisor, and graduation date, if applicable):

Ph.D. Robert Breckenridge (Environmental Science; M. Dakins; 2007)

Michael Falkowski (Natural Resources; P. Gessler; 2008)

Eileen Perry (Geography; K. Humes; 2008)

Zack Holden (Natural Resources; P. Morgan; 2008)

Jan Eitel (Natural Resources; P. Gessler; 2008)

Niko Balkenhol (Natural Resources; L. Waits; 2009)

Jennifer Jensen (Geography; K. Humes; 2009)

Thomas Rodhouse (Natural Resources; K. Vierling; 2011)

Rob Keefe (Natural Resources; A. Davis; 2011)

Thomas Thompson (Natural Resources; K. Reese; 2012)

Arjan Meddens (Environmental Science; J. Hicke; 2012)

Sandya Kesoju (Plant, Soil, and Entomological Sciences; T. Prather; 2012)

John Wallace (Environmental Science; T. Prather; 2013)

Joel Sauder (Natural Resources; J. Rachlow; 2014)

Natalia Estrada (Natural Resources, A. Fremier; 2014)

Jerome Sebbaduka (Washington State University; D. Brown; 2014)

Irene Shaver (Environmental Science, L. Hormel; 2014)

Kate Cleary (Natural Resources, L. Waits; 2015)

Alejandra Martinez-Salinas (Natural Resources, K. Vierling; 2016)

Sara Galbraith (Plant, Soil, and Entomological Sciences; N. Bosque-Perez; 2016)

Case Prager (Columbia University; K. Griffin and S. Naem; 2017)

Mary Engels (Water Resources; R. Heinse, 2015-2018)

Andrea Melchiorre (Natural Resources; L. Boschetti, 2020)

Micah Russell (Water Resources; J. Eitel, 2020)

Jessica Stitt (Natural Resources; K. Vierling, in progress)

Eloise Zimbelman (Natural Resources; R. Keefe, in progress)

Andrew Maguire (Natural Resources; J. Eitel, in progress)

Jyoti Jennewein (Natural Resources; J. Eitel, in progress)

Lorina Keery (Natural Resources; S. Gilbert, in progress)

M.S. Russell Beck (Masters of Natural Resources; P. Gessler; 2005)

James Dickinson (Forest Resources; P. Gessler; 2005)

Lauren Shapiro (Forest Resources; P. Morgan; 2006)
Stacie Robinson (Environmental Science; L. Waits; 2006)
Brent Slone (Geography; R. Dezzani; 2007)
Jesse Lewis (Wildlife Resources; J. Rachlow; 2007)
Andrea Kuchy (Rangeland Ecology and Management; S. Bunting; 2008)
Priscilla Nyamai (Plant, Soil, and Entomological Sciences; T. Prather; 2009)
Peter Gag (Forest Resources; K. Kavanagh; 2009)
Benjamin Hoppus (Forest Resources; L. Fins; 2009)
Breezy Jackson (Environmental Science; A. Sowards; 2009)
Keith Bickford (Architecture; B. Haglund; 2010)
Jeff Lonneker (Forest Resources; P. Gessler; 2010)
Eric Herschmer (Forest Resources; T. Link; 2010)
Jody Vogeler (Wildlife Resources; K. Vierling; 2011)
Ben Bright (Geography; J. Hicke; 2011)
Freddy Argotty (CATIE Maestria Program, P. Imbach; 2012)
Damon Husebye (Plant, Soil, and Entomological Sciences, S. Eigenbrode; 2013)
Charles Swift (Wildlife Resources; K. Vierling; 2016)
Jessica Sanow (Natural Resources; J. Eitel; 2016)
Ayana Glover (Plant, Soil, and Entomological Sciences; E. Brooks; 2018)
Bingbing Xu (Geography, J. Hicke; 2018)
Amy Thorson (Natural Resources; M. Wolfenden; 2019)
Will Weygint (Natural Resources; J. Eitel; in progress)

Post-Doctoral Researcher Advisees:

Alistair Smith (2004-2005; joint with P. Gessler)
Steven Sesnie (2007)
Jan Eitel (2009-2010)
Troy Magney (2015)
Arjan Meddens (2016-2017)

Research Scientist Mentored:

Jan Eitel (2010-2012)

Visiting Scientist Mentored:

Jingjue Jiang (Wuhan University Computer Science Dept., 2013-2014)

Courses Developed: Field Activities in Environmental Science, Current Global Change Research, Global Environmental Change, Introduction to Environmental Remote Sensing, Landscape Genetics (with Lisette Waits and Raymond Dezzani), Landscape Ecology (modified existing course), Pacific Northwest Tri-State Rangeland Ecology Short Course on Remote Sensing in Rangelands; The Earth and Our Place on It; Current Literature in Remote Sensing

Guest Lecturing in Educational Programs On or Off Campus:

I typically provide ~1-2 guest lectures per semester at the University of Idaho and elsewhere. I stopped keeping track of these when I became department head. Below are some examples from previous years.

“A Primer on LiDAR in Natural Resources Sciences”, University of Idaho Introduction to Spatial Analysis for Natural Resources class (12/2/2014, 3/25/2015).

“How to Estimate Aboveground Biomass Using LiDAR”, Columbia University Forest Ecology class (11/18/2014).

“Connecting the Dots: A Story of LiDAR-Based Environmental Research and Outreach”, University of Idaho FRFS Graduate Seminar class (11/5/2014).

“The Great Exhale: Reflections on a Breathing Planet”, University of Idaho (2/7/2012).

“The Earth as a System: Feedbacks, Couplings, and Models”, University of Idaho SEEDS International Environmental Leadership program (1/24/2012).

“The Role of Remote Sensing Data in Understanding Ecological Legacies”, Colorado College, Colorado Springs, CO (10/11/2010).

“200 kilohertz and a Cessna: Using lasers to measure forest dynamics for global carbon accounting”, University of Idaho Electrical and Computer Engineering Seminar Series (4/15/2010).

“Minding the Gigatons: Determining Carbon Storage in Forest Ecosystems of Idaho...and Beyond”, University of Idaho Sustainability Forum (2010).

“Earth System Science Education K-Gray: Laying Down the Drawbridge, and Throwing Away the Key”, University of Idaho, Moscow, ID (2007, 2009).

“NR101: A Time of Global Change, A Time for Personal Change”, University of Idaho, Moscow, ID (2007).

“The Earth Systems Connections Elementary Curriculum”, McDonald Elementary School, Moscow, ID (2006 - 2007).

“Land-use choices: Balancing Human Needs and Ecosystem Function”, University of Idaho, Moscow, ID (2006).

“Remote Sensing of Global Change”, University of Idaho, Moscow, ID (2006).

“Teaching in the Field”, University of Idaho, Moscow, ID (2006, 2007).

“Remote Sensing: What is it, and why do Landscape Ecologists do it?”, University of Colorado, Boulder, CO (1997).

“The Use of Remote Sensing in Global Change Study”, University of Idaho, Moscow, ID (December 2006).

“A Global Change Sampler Plate”, University of Idaho, Moscow, ID (2005).

“The Anatomy of a Wildfire”, University of Idaho, Moscow, ID (2005).

“Using Multi-angle Remote Sensing to Identify Shrub Cover”, University of Idaho, Moscow, ID (April 2005).

“The Use of Remote Sensing in Global Change Studies”, University of Idaho, Moscow, ID (December 2004).

“The Earth Systems Connections Elementary Curriculum”, Little Wound Elementary School, Kyle, SD (August 1999 - May 2004).

“The Earth Systems Connections Elementary Curriculum”, Wilson Elementary School, Rapid City, SD (August 1999 - May 2004).

“Sustainability and Global Ecology”, University of Colorado, Boulder, CO (1998).

“How to Survive (and do Science) in the African Congo”, University of Colorado, Boulder, CO (1997).

SCHOLARSHIP ACCOMPLISHMENTS:

Publications (* denotes student; **denotes student or postdoc I directly advised on project):

Refereed Book Chapters:

- BC2. Zimmerman, P. R., Updegraff, K., Capehart, W. J., Price, M. H., Vierling, L. A. (2005). *C-Lock: A method to maximize carbon sequestration value to agro-forestry producers and purchasers* (pp. 131-150). Elsevier, Oxford: Green Trading Markets: Developing the Second Wave.
- BC1. Vierling, L. A., West, A. (1998). Biogenic volatile organic compounds. *In: Terrestrial Ecosystems and the Atmosphere*, Schimel, D.S. and Monson, R.K., eds. (pp. 59-75). Boulder, CO: NCAR Advanced Studies Program Colloquium Publication.

Refereed Journal Articles (published, in press, and accepted):

ISI Researcher ID: E-6428-2010. *Current ISI citation “h-index” = 39 and Google Scholar “h-index” = 48. ** denotes student or postdoctoral advisee; * denotes other students/postdocs*

- J124. Eitel, J.U.H., Griffin, K.L., Boelman, N.T., Maguire, A.J.*, Meddens, A., Jensen, J., Vierling, L.A., Schmiege, S.*, and Jennewein, J.* (2020). Remote sensing tracks daily radial wood growth of evergreen needleleaf trees. *Global Change Biology*, <https://doi.org/10.1111/gcb.15112>.
- J123. Maguire, A.J.*, Eitel, J.U.H., Griffin, K.L., Magney, T.S., Long, R.A., Vierling, L.A., Schmiege, S.C.*, Jennewein, J.S.*, Weygint, W.*, Boelman, N.T., and Bruner, S.G.* (2020). On the functional relationship between fluorescence and photochemical yields in complex canopies: Implications for interpreting large-scale solar-induced-fluorescence measurements. *Geophysical Research Letters*, 10.1029/2020GL087858.
- J122. Prager, C.*, Meler, M., Boelman, N.T., Eitel, J.U.H., Gersony, J.*, Greaves, H., Heskell, M., Magney, T.S., Naeem, S., Vierling, L.A., and Griffin, K.L. (2020). A mechanism of expansion: Arctic deciduous shrubs capitalize on increasing nutrient availability. *Oecologia*, <https://doi.org/10.1007/s00442-019-04586-8>.
- J121. Greaves, H.E.**, Eitel, J.U.H., Vierling, L.A., Boelman, N.T., Griffin, K.L., Magney, T.S.**, and Prager, C.* (2019). 20 cm resolution mapping of tundra vegetation communities provides an ecological baseline for important research areas in a changing Arctic environment. *Environmental Research Communications*, 1, 105004. doi:10.1088/2515-7620/ab4a85.
- J120. Maguire, A.J.*, Eitel, J.U.H., Vierling, L.A., Griffin, K.L., Boelman, N.T., Johnson, D.M., Jensen, J.E.*, Greaves, H.E.*, and Meddens, A.J.H.** (2019). Terrestrial lidar scanning reveals fine-scale linkages between microstructure and photosynthetic functioning of spruce saplings at the forest-tundra ecotone. *Agricultural and Forest Meteorology*, 269-270 (2019): 157-168.
- J119. Stitt, J.M.*, Svancara, L.K., Vierling, L.A., and Vierling, K.T. (2019). Smartphone lidar can measure tree cavity dimensions for wildlife studies. *The Wildlife Society Bulletin*, doi: 10.1002/wsb.949.

- J118. Boelman, N.T., Liston, G.E., Gurarie, E., Meddens, A.J.H.***, Mahoney, P.J.*, Kirchner, P.B., Bohrer, G., Brinkman, T.J., Cosgrove, C.L., Eitel, J.U.H., Hebblewhite, M., Kimball, J.S., LaPoint, S., Nolin, A.W., Pedersen, S.H., Prugh, L.R., Reinking, A.K., Vierling, L.A. (2019). Integrating snow science and wildlife ecology in Arctic-boreal North America. *Environmental Research Letters*, 14 (2019), <https://doi.org/10.1088/1748-9326/aaec1>.
- J117. Eitel, J.U.H., Maguire, A.*, Boelman, N.T., Vierling, L.A., Griffin, K.L., Jensen, J.*, Magney, T.S.***, Mahoney, P.*, Meddens, A.***, Silva, C.***, and Sonnentag, O. (2019). Proximal remote sensing tree physiology at northern treeline: Do late-season changes in the photochemical reflectance index (PRI) respond to climate or photoperiod? *Remote Sensing of Environment*, 221 (2019): 340-350. <https://doi.org/10.1016/j.rse.2018.11.022>.
- J116. Muñoz Brenes, C.***, Jones, K.W., Schlesinger, P.***, Robalino, J., and Vierling, L.A. (2018). The impact of protected area governance and management capacity on ecosystem function in Central America. *PLoS ONE*, 13(10): e0205964. <https://doi.org/10.1371/journal.pone.0205964>.
- J115. Meddens, A.J.H.***, Vierling, L.A., Eitel, J.U.H., Jennewein, J.S.*, Boelman, N.T., White, J.C., & Wulder, M.A. (2018). Developing high-resolution canopy height and digital terrain models for arctic regions from WorldView-2 and ArcticDEM data. *Remote Sensing of Environment*, 218: 174-188.
- J114. Silva, C.A.***, Klauberg, C., Hudak, A.T., Vierling, L.A., Liesenberg, V., Bennett, L.G., Schraiber C.F., and Schoeninger, E.R. (2018). Estimating stand height and tree density in *Pinus taeda* plantations using in situ data, airborne LiDAR, and k-nearest neighbor imputation. *Anais da Academia Brasileira de Ciências* 90(1): 295-309.
- J113. Bae, S., Mueller, J., Lee, D., Vierling, K.T., Vogeler, J.C., Vierling, L.A., Hudak, A.T., and Thorn, S. (2018). Taxonomic, functional, and phylogenetic diversity of bird assemblages are oppositely associated to productivity and heterogeneity in temperate forests. *Remote Sensing of Environment*, 215: 145-156.
- J112. Chain-Guadarrama, A.***, Imbach, P., Vilchez-Mendoza, S., Vierling, L.A., and Finegan, B. (2018). Potential trajectories of old-growth Neotropical forest functional composition under climate change. *Ecography*, 41(1): 75-89, doi: 10.1111/ecog.02637.
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- PP5. Glasson, G., Frykholm, J. A., Vierling, L. A. (2003). Using Traditional Ecological Knowledge to Develop an Earth System Science Elementary Curriculum. Philadelphia, PA: Proceedings of the National Association for Research in Science Teaching.
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- PP3. Vierling, L. A., Frykholm, J. A., Glasson, G. (2002). The earth systems connections elementary curriculum: a world of contexts for teaching and learning remote sensing. Toronto: Proceedings of the IEEE International Geoscience and Remote Sensing Symposium (IGARSS).
- PP2. Wylie, B. K., Meyer, D. J., Choate, M. J., Vierling, L. A., Kozak, P.* (2000). Mapping woody vegetation and eastern red cedar in the Nebraska sand hills using AVIRIS. Pasadena, CA: Summaries of the Ninth JPL Airborne Earth Science Workshop, NASA Jet Propulsion Laboratory.
- PP1. Vierling, L. A., Deering, D. W., Eck, T. F. (1996). Nadir and bidirectional surface measurements of arctic tundra: site differentiation and vegetation phenology early in the growing season (4th ed., pp. 1897-1900). Lincoln, NE: Proceedings of the International Geoscience and Remote Sensing Symposium.

Thesis and Dissertation:

- T2. Vierling, L. A. (1999). Light heterogeneity and gas exchange dynamics above and within a monodominant Congolese rain forest canopy. Boulder, CO: University of Colorado, Ph.D. Dissertation.
- T1. Vierling, L. A. (1992). The Late-Quaternary paleoenvironmental history of Lost Park, Tarryall Mountains, central Colorado: a palynological study. Colorado Springs, CO: The Colorado College, Undergraduate Honors Thesis.

Articles Appearing in the Popular Press/Magazines:

- M2. Vierling, L.A. and Eitel, J.U.H. (2015). The Buzz about Drones. *Western Forester*.
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Workshops and Symposia Organized:

- WS5. Vierling, L.A. and Duncanson, L. "Carbon, Diversity and Forest Health", Session chairs for the 12th annual SilviLaser conference, Vancouver, BC, Canada, 17 September 2012.
- WS4. Vierling, L.A. "Quantifying Ecosystem Services", Oral Session organized for the 4th Annual NSF EPSCoR Western Consortium Tri-State Meeting, Sun Valley, ID, 4 April 2012.
- WS3. Vierling, L.A., and Roupsard, O. "From the Leaf to the Landscape: Field and Remote Sensing Approaches for Understanding Vegetation Structure and Dynamics", CIRAD/PCP workshop and symposium, Turrialba, Costa Rica, May, 2011.
- WS2. Vierling, L.A., Vierling, K.T., and Martinuzzi, S.** "Lidar Measures of Ecosystem Structure: Implications for Biodiversity and Wildlife Habitat Modeling", Ecological Society of America Annual Meeting Organized Oral Session, Albuquerque, NM, August, 2009.
- WS1. Vierling, L.A. Program Committee Chair and Conference Lead, Pacific Northwest Tri-State Short Course in Rangeland Ecology, Boise, ID, April 2008.

Scholarly Presentations (*denotes student/postdoc; **denotes my student/postdoc advisee)

- P187. Maguire, A.*, Eitel, J.U.H., Griffin, K.L., Magney, T.S., Long, R., Boelman, N., Bruner, S.*, Jennewein, J.S.*, Jensen, J.*, Schmiege, S.C.*, Vierling, L.A., and Weygint, W.* 2019.

Assessing the sensitivity of shoot-level chlorophyll fluorescence to scalable proxies of absorbed radiation in an evergreen needleleaf forest. AGU Fall Meeting 2019. December 9-13, San Francisco, CA.

- P186. Eitel, J.U.H., Griffin, K.L., Boelman, N., Meddens, A.J., Jensen, J.*, Vierling, L.A., Maguire, A.*, Schmiede, S.C.* and Jennewein, J.S.*, 2019. Remote sensing of intra-annual tree growth dynamics in a boreal forest. AGU Fall Meeting 2019. December 9-13, San Francisco, CA.
- P185. Jensen, J.E.*, A. Maguire*, R. Oelkers, L. Andreu, N. Boelman, R. D'Arrigo, K. Griffin, C. Silva**, J. Jennewein*, A.J.H. Meddens*, M. Russell*, L. A. Vierling, and J.U.H. Eitel. 2018. Using aerial lidar to understand the role of climate and herbivory in shaping forest demographics at the Arctic forest-tundra ecotone. AGU Fall Meeting, December 10 – 14, Washington, D.C.
- P184. Eitel, K., Cohn, T., Seven, K., Eitel, J., Vierling, L., Uh, C.*, White Temple, E.*, Davis, M., Dixon, R., Carter, M.* (2018), Integrating Cultural and Scientific Identities at DRONE Camp: an Indigenous Environmental Science Course for High School Students. Abstract ED11C-0736 presented at AGU 2018 Fall Meeting, December 10-14, Washington, D.C.
- P183. Maguire, A.J.*, Eitel, J.U.H., Griffin, K.L., Magney, T.S.*, Boelman, N.T., Vierling, L.A., Schmiede, S.C.*, Bruner, S.G., Jensen, J.E.*, Hiers, E.* 2018. Assessing the sensitivity of ChlF to canopy structure at the forest-tundra ecotone: toward remotely sensing light use efficiency dynamics. AGU Fall Meeting, December 10 – 14, Washington, D.C.
- P182. Eitel, J.U.H., Maguire, A.J.*, Boelman, N., Vierling, L.A., Griffin, K.L., Jensen, J.*, Magney, T.S.*, Mahoney, P.J., Meddens, A.J.H., Silva, C.**, Sonnentag, O. 2018. Evaluating the potential of fall trends in photochemical reflectance index (PRI) time-series to improve understanding of climate change effects at northern treeline. AGU Fall Meeting, 10-14 December, Washington D.C.
- P181. Meddens A.J.H.**, Vierling L.A., Eitel J.U.H, Jennewein J.*, Silva C.A.* , Boelman N.T., White J., Wulder M. (2018). Developing high-resolution canopy height and digital terrain models using WorldView-2 and ArcticDEM data. Fourth ABoVE Science Team Meeting, January 23–26, Seattle, WA.
- P180. Jennewein J.S.*, Hebblewhite M., Meddens A.J.H.**, Gilbert S., Vierling L.A., Boelman N.T., Eitel J.U.H. (2017). Assessing the utility of temporally dynamic terrain indices in Alaskan moose resource selection. American Geophysical Union, December 11-14, New Orleans LA.
- P179. Davidson S, Bohrer G, LaPoint S*, Gurarie E*, Eitel J, Hebblewhite M, Jennewein J, Mahoney P*, Meddens A*, Oliver R, Palm E*, Prugh L, Vierling L, Boelman N (2017). Animals on the Move: status of data acquisition and archiving. Airborne Science Planning & 3rd ABoVE Science Team Meeting, Boulder, Colorado, USA, 19 January 2017.
- P178. Meddens A.J.H.**, Vierling L.A., Eitel J.U.H., Boelman N.T., Jennewein J.*, and Maguire A.* (2017). Characterizing and evaluating the Arctic Digital Elevation Model product with LiDAR data for spatial modeling. 3rd ABoVE Science Team Meeting, Boulder, CO, January, 2017.
- P177. Jensen, J.E.*, Maguire*, A., Oelkers, R., Andreu, L., Boelman, N., D'Arrigo, R., Griffin, K., Jennewein, J.*, Meddens, A.J.H.**, Russell, M.*, Vierling, L.A., & Eitel, J.U.H. (2017). Chasing Treeline: Reconstructing the history of the Forest-Tundra Ecotone using lidar-derived tree height (2017). 3rd ABoVE Science Team Meeting, Boulder, CO, January, 2017.
- P176. Eitel J.U.H., Boelman, N.T., Griffin, K.L., Vierling, L.A., Jensen, J.*, Maguire, A.*, Jennewein, J.*, Meddens, A.J.H.**, Russell, M.* (2017). LiDAR, passive spectral, and ecophysiological approaches to link Forest Tundra Ecotone structure and function (2017). 3rd ABoVE Science Team Meeting, Boulder, CO, January, 2017.

- P175. Vierling, L.A., Greaves, H.E.***, Magney, T.S.***, Gersony, J.*, Prager, C.M.*, Meddens, A.***, Boelman, N.T., Griffin, K.L., Naeem, S., and Eitel, J.U.H. Reflecting on Toolik: Recent advances for understanding Arctic ecology using lidar data. Toolik Field Station All-Scientists meeting, Portland, OR, January 27-28, 2017.
- P174. Vierling, L.A., Smith, R., Eitel, K., Benner, S., Miller, B., Schneider, J., and Penney, S. Workforce development, external engagement, and diversity update for Idaho EPSCoR MILES: update and goals. Idaho NSF EPSCoR Annual Meeting. Boise, ID. October 29, 2015.
- P173. Magney, T.S.***, Griffin, K.L., Boelman, N.T., Eitel, J.U.H., Greaves, H.***, Prager, C.*, Logan, B., Oliver, R.*, Fortin, E.*, Vierling, L.A. Ground based remote sensing and physiological measurements provide novel insights into canopy photosynthetic optimization in arctic shrubs. American Geophysical Union Annual Meeting. San Francisco, CA. December 15-19 2014.
- P172. Greaves, H.***, Vierling, L.A., Eitel, J.U.H., Boelman, N.T., Griffin, K., Magney, T.*** Estimating aboveground biomass of low-stature Arctic shrubs with terrestrial LiDAR. American Geophysical Union Annual Meeting. San Francisco, CA. December 15-19 2014.
- P171. Vierling, L.A., Magney, T.S.***, Eitel, J.U.H. Remote detection of water stress conditions via a diurnal photochemical reflectance index (PRI) improves yield prediction in rainfed wheat. American Geophysical Union Annual Meeting. San Francisco, CA. December 15-19 2014.
- P170. Vierling, L.A., Eitel, J.U.H., Vierling, K., Greaves, H.***, Magney, T.***, Martinuzzi, S., Vogeler, J.*, Hudak, A., Parsons, R.*, Silva, C.*** Unveiling multiple dimensions of ecology using LiDAR. Departmental Seminar, Department of Geography, University of Idaho, Moscow, ID. Dec. 3, 2014 (*invited*).
- P169. Vierling, L.A., Eitel, J.U.H., Vierling, K., Greaves, H.***, Magney, T.***, Martinuzzi, S., Vogeler, J.*, Hudak, A., Parsons, R.*, Silva, C.*** Beyond 3-D: Unveiling multiple dimensions of ecology using LiDAR. Departmental Seminar, Department of Ecology, Evolution, and Environmental Biology (E3B), Columbia University, New York, NY. Nov. 18, 2014 (*invited*).
- P168. Magney, T.***, Sam Finch**, Nicole Ward*, Erin Brooks, Dave Huggins, Jan Eitel, Lee Vierling, Todd Anderson, Matt Yourek*, Claudio Stockle, Dave Brown, Fidel Moreira. Assessing the controls on spatio-temporal nitrogen uptake patterns using a biophysical process model and high resolution satellite imagery. ASA-SSSA-CSSA Annual Meeting. Long Beach, CA. Nov. 2, 2014.
- P167. Eitel, J.U.H., Vierling, L.A., Magney, T.S.***, Greaves, H.E.***, Hudak, A.T., Boelman, N.T., Griffin, K.L., Dittmar, G. 2014. Beyond 3-D. International Workshop 3D Vegetation Mapping using Advanced Remote Sensing - Implications for Seamless Modeling of Terrestrial Ecosystems, September 24th-26th, 2014, St.Oswald, Germany (*invited*).
- P166. Vierling, L.A., Penney, S., Eitel, K., Benner, S., Busche, C., Green, C., Hernandez, J., Lindquist, E., Makings, D., Miller, B., Smith, R., and Solomon, M. 2014. ONEIdaho: How Idaho's Experimental Program to Stimulate Competitive Research (EPSCoR) is Bridging the Gap Between the Classroom and STEM Careers. Idaho Conference on STEM Education Challenges and Innovative Solutions: Overcoming STEM Education Barriers in Rural States, Boise, ID, 28 May 2014 (*invited*).
- P165. Vierling, L.A., Finch, S.***, Vogeler, J.*, Silva, C.***, Vierling, K.T., Hudak, A.T., and Eitel, J. 2014. Using LiDAR to quantify multiple ecosystem attributes at the individual landowner scale. Quantification of Ecosystem Services: Concepts and Measurement Workshop. CATIE/CGIAR, Turrialba, Costa Rica, 12 March 2014 (*invited*).

- P164. Greaves, H.E.***, Magney, T.S.***, Vierling, L.A., Eitel, J.U.H., Boelman, N.T., Griffin, K.L., and Prager, C.* 2014. Using terrestrial and airborne LiDAR to quantify shrub structure and biomass in Arctic tundra. Arctic LTER annual meeting, Woods Hole, MA, 26 February 2014 (oral presentation).
- P163. Hudak, A.T., S. Finch**, K. Vierling, L. Vierling, J. Vogeler*, and C. Swift*. Ecosystem services with backyard benefits: avian diversity, forest diversity, and carbon sequestration on Moscow Mountain. Sponsored by White Pine Chapter, Idaho Native Plant Society, Moscow, Idaho, 23 Jan 2014. (oral presentation).
- P162. Magney, T.S.***, Vierling, L.A., Eitel, J.U.H., Finch, S.***, Huggins, D., Brooks, E., and Yourek, M.* 2013. The use of different satellite sensors in assessing crop performance. Far West Agribusiness Conference, Pasco, WA, December 2013. (*invited*)
- P161. Magney, T.S.***, Greaves, H.E., Vierling, L.A., Eitel, J.U.H., Boelman, N.T., Griffin, K.L., Prager, C.*, Ayaji, M.*, and Gibson, R.* 2013. Quantifying shrub encroachment in Northern Alaska using LiDAR. AGU Fall Meeting, San Francisco, CA, December 2013.
- P160. Vierling, L.A., Eitel, J.U.H., Garrity, S.R., Greaves, H.E.***, and Magney, T.S.*** 2013. Linking ecosystem structure and function from the leaf to the canopy using low altitude remote sensing: a humble overview. AGU Fall Meeting, San Francisco, CA, December 2013. (*invited*).
- P159. Vierling, L.A., Martinuzzi, S., Hudak, A.T. Eitel, J.U.H., Vogeler, J.*, Magney, T., and Vierling, K.T. 2013. Earth in 3-D: shedding new light on environmental studies using lasers. Whitman College, Walla Walla, WA, 17 October 2013 (*invited*).
- P158. Wendland, K. and Vierling, L. 2013. The impact of land tenure and conservation strategies on LCLUC and ecosystem services at transboundary sites in Mesoamerica. Trifinio Stakeholder Workshop, Esquipulas, Guatemala, 15 August 2013.
- P157. Vierling, L.A., Martinuzzi, S., Hudak, A.T. Eitel, J.U.H., Vogeler, J.*, Greaves, H.***, Magney, T.***, Boelman, N., Griffin, K., and Vierling, K.T. 2013. Lasers, Ecology, and YOU. University of Alaska Fairbanks/Toolik Field Station LTER, North Slope, AK, 16 July 2013 (*invited*).
- P156. Litvak, M.E., Asner, G.P., Boelman, N.T., Buermann, W., McDowell, N.G., Schwalm, C., Schaefer, K., and Vierling, L.A. Vulnerability, thresholds, tipping points: NASA Terrestrial Ecology response to the USGCRP 2015 agenda. NASA Terrestrial Ecology Science Team Meeting, La Jolla, CA, April 30-May 2, 2013. (*invited*).
- P155. Vierling, L.A., Boelman, N.T., Eitel, J.U.H., Griffin, K.L., Greaves, H.E.***, Magney, T.S.***, and Prager, C.* 2013. Quantifying thresholds in arctic tundra vegetation structure and ecosystem function using LiDAR and multispectral remote sensing. NASA Terrestrial Ecology Science Team Meeting, La Jolla, CA, April 30-May 2, 2013. (*invited*).
- P154. Wendland, K., Vierling, L., Schlesinger, P.***, and Muñoz, C.* 2013. An evaluation of the impact of conservation strategies on land cover/land use change at a transboundary site in Mesoamerica. NASA Land Cover and Land Use Change Science Team Meeting, Rockville, MD, April 2-4, 2013. (*invited*).
- P153. Vierling, L.A., Magney, T.S.***, Greaves, H.E.***, and Eitel, J.U.H. 2013. Reflecting on Alaska: Advanced remote sensing approaches to understand tundra vegetation change. Columbia University, New York, NY, 4 March 2013. (*invited*).
- P152. Greaves, H.E.***, Magney, T.S.***, Vierling, L.A., Eitel, J.U.H., Boelman, N.T., Griffin, K.L., and Prager, C.* 2013. Quantifying thresholds in arctic tundra vegetation structure and ecosystem

function using LiDAR and multispectral remote sensing. Arctic LTER annual meeting, Woods Hole, MA, 5 March 2013. *(invited)*

- P151. Krofcheck, D.J.*, Eitel, J.U.H., Vierling, L.A., Schulthess, U., and Litvak, M.E. 2012. High spatial resolution remote sensing imagery improves GPP predictions in disturbed, semi-arid woodlands. AGU Fall Meeting, San Francisco, CA, December 2012.
- P150. Magney, T.S.***, Vierling, L.A., Eitel, J.U.H., Campbell, G., Campbell, C., and Cobos, D. 2012. Design and testing of a narrowband spectral radiometer for quantifying plant biophysical properties. AGU Fall Meeting, San Francisco, CA, December 2012.
- P149. Vierling, L.A., Finch, S.***, Vierling, K.T., Strand, E.K., Hudak, A.T., Vogeler, J., Martinuzzi, S., Eitel, J., and Falkowski, M.J. 2012. Lasers on the Landscape: Quantifying 3-D ecosystem structure to map continuous surfaces of aboveground carbon, avian species richness, and tree species distributions. AGU Fall Meeting, San Francisco, CA, December 2012. *(invited)*
- P148. Chahal, M.K.*, Brown, D.J., Brooks, E.S., Campbell, C., Cobos, D., and Vierling, L.A. 2012. Field-scale soil moisture space-time geostatistical modeling for complex Palouse landscapes in the inland Pacific Northwest. AGU Fall Meeting, San Francisco, CA, December 2012.
- P147. Eitel, J.U.H., Magney T.S.***, Vierling, L.A., Brown, T.*, and Huggins, D. 2012. A novel, mobile dual wavelength laser altimetry system for improved site-specific nitrogen fertilizer applications. AGU Fall Meeting, San Francisco, CA, December 2012.
- P146. Argotty, F.*, Cifuentes, M., Imbach, P., Vilchez, S., Casanoves, F., Ibrahim, M., and Vierling, L.A. 2012. Quantification of forest carbon degradation in Nicaragua using RapidEye remote sensing data: El Cua and Wiwili case studies. AGU Fall Meeting, San Francisco, CA, December 2012.
- P145. Vierling, L.A. 2012. Photosynthesis from afar: Using radiometers and lasers to derive primary productivity of terrestrial plants. Washington State University School of Biological Sciences Seminar, Pullman, WA, November 26, 2012. *(invited)*
- P144. Bruner, E.A.*, Brown, D., Huggins, D., Brooks, E., Eitel, J.U.H., Magney, T.S.***, Vierling, L.A., Poggio, M.*, and Brown, T.T.* 2012. Science-based zone mapping for site-specific N management in dryland wheat-based cropping systems on complex, Pacific Northwest Palouse landscapes. American Society of Agronomy/Crop Science Society of America/Soil Science Society of America joint meeting, Cincinnati, OH, October 24, 2012.
- P143. Magney, T.S.***, Eusden, S.A.*, Eitel, J.U.H., Vierling, L.A., and Logan, B.A. 2012. Remote estimation of photosynthetic efficiency using a green terrestrial laser scanner. 12th Annual SilviLaser Conference, Vancouver, BC, Canada, September, 2012.
- P142. Finch, S.***, Vierling, L.A., Vierling, K.T., and Hudak, A.T. 2012. A case study using field surveys and LiDAR to quantify aboveground carbon, bird diversity, and tree species richness to prioritize conservation based on multiple ecosystem services. 12th Annual SilviLaser Conference, Vancouver, BC, Canada, September, 2012.
- P141. Eitel, J.U.H., Vierling, L.A., and Magney, T.S.*** 2012. Autonomously operating terrestrial laser scanner for monitoring forest ecosystems at a very high temporal resolution. 12th Annual SilviLaser Conference, Vancouver, BC, Canada, September, 2012.
- P140. Vierling, L.A., Vierling, K.T., Martinuzzi, S., Vogeler, J., and Hudak, A.T. 2012. MacArthur's Ladder: Advancing the role of LiDAR in assessing and conserving biodiversity. 12th Annual SilviLaser Conference, Vancouver, BC, Canada, September, 2012. *(invited)*.

- P139.Krofcheck, D.*, Eitel, J.U.H., Vierling, L.A., and Litvak, M.E. 2012. Linking structural with functional changes of a semi-arid woodland in central New Mexico using a time series of high resolution satellite imagery and eddy covariance measurements. ForestSAT 2012 Biennial Conference, Corvallis, OR, September, 2012.
- P138.Rodhouse, T.J.*, Ormsbee, P.C., Irvine, K.M., Vierling, L.A., Szewszak, J.M., and Vierling, K.T. 2012. Annual turnover in bat occupancy patterns: predictions from life history theory with implications for conservation and monitoring. Ecological Society of America Annual Meeting, Portland, OR, August, 2012.
- P137.Vierling, L.A., Finch, S.**, Vierling, K.T., Vogeler, J.*, Adam, P.**, Strand, E., Eitel, J., Martinuzzi, S., and Falkowski, M. 2012. A case study using field surveys and LiDAR to quantify carbon and bird diversity for establishing conservation priorities. 4th Annual NSF EPSCoR Western Consortium Tri-State Meeting, Sun Valley, ID, 4 April 2012.
- P136.Galbraith, S.*, Bosque-Perez, N., Ramos, Z.**, and Vierling, L.A. 2012. Pollination services in changing landscapes: Understanding the distribution of native bee populations in Hojanca, Costa Rica. Entomological Society of America, Pacific Branch Meeting.
- P.135.Vierling, L.A. 2012. Design and deployment of narrowband spectral radiometers to quantify vegetation dynamics. University of Idaho Department of Plant, Soils, and Entomological Sciences Visiting Seminar, Moscow, ID, 22 February 2012 (*invited*).
- P.134.Vierling, L.A., Adam, P.**, Martinuzzi, S., Finch, S.**, Hudak, A.T., Eitel, J.U.H., Strand, E.K., Falkowski, M.J., Vogeler, J.*, and Vierling, K.T. 2012. Lasers on the landscape: Quantifying 3-D ecosystem structure to map continuous surfaces of carbon and species distributions. University of Wisconsin Department Forest and Wildlife Ecology Visiting Seminar, Madison, WI, 17 February 2012 (*invited*).
- P.133.Vierling, L.A., Martinuzzi, S., Finch, S.**, Hudak, A.T., Eitel, J.U.H., Strand, E.K., Falkowski, M.J., Vogeler, J.*, and Vierling, K.T. 2012. The role of remote sensing data in understanding land use legacies. PolicyMix Marxan Conference: Spatially explicit analysis of policy mix effectiveness and efficiency, CATIE, Turrialba, Costa Rica, 30 January-3 February, 2012 (*invited*).
- P.132.Magney TS**, Eitel JUH, Vierling LA (2011): Beyond 3-D: Temporal and Biochemical Applications of a Green Terrestrial Laser Scanner. Terrestrial Laser Scanning Workshop, Boulder, CO 2011.
- P.131.Vierling, L.A.; Dennis D. Baldocchi; Nicholas C. Coops; Jan Eitel; Mark A. Friedl; John A. Gamon; Steven R. Garity; Thomas Hilker; Karl F. Huemmrich; Andrew D. Richardson; Crystal Schaaf; Oliver Sonnentag; Craig E. Tweedie. Beyond Greenness: towards a continuous phenology of vegetation. Presented at the American Geophysical Union Fall Meeting, San Francisco, CA, December, 2011.
- P130.Klos, P.Z.*, Chain, A.**, Vierling, L.A., Link, T.E., and Finegan, B. Throughfall heterogeneity in forested landscapes as a focal mechanism for deep percolation: yes or no? Presented at the American Geophysical Union Fall Meeting, San Francisco, CA, December, 2011.
- P129.Vierling, Lee A.; Steven R. Garity; Gaylon Campbell; Nicholas C. Coops; Jan Eitel; John A. Gamon; Thomas Hilker; Daniel J. Krofcheck; Marcy E. Litvak; Javier A. Naupari; Andrew D. Richardson; Oliver Sonnentag; Martin van Leeuwen. Quantifying seasonal dynamics of canopy structure and function using inexpensive narrowband spectral radiometers. Presented at the American Geophysical Union Fall Meeting, San Francisco, CA, December, 2011. (*Invited*)

- P128. Eitel, J.U.H., Vierling, L.A., and Long, D.S. Remote sensing of foliar biochemistry with a terrestrial laser scanner. Presented at the American Geophysical Union Fall Meeting, San Francisco, CA, December, 2011.
- P127. Krofcheck, D.J.*, Eitel, J.U.H., Vierling, L.A., Schulthess, U., Litvak, M.E. Assessing ecosystem function of a Piñon-Juniper woodland using a time series of high resolution satellite imagery and eddy covariance measurements. Presented at the American Geophysical Union Fall Meeting, San Francisco, CA, December, 2011.
- P126. Brown, D.J., Brooks, E.S., Eitel, J.U.H., Huggins, D.R., Painter, K., Rupp, R., Smith, J.L., Stockle, C., Vierling, L.A. 2011. Site-Specific, Climate-Friendly Farming. Presented at the American Geophysical Union Fall Meeting, San Francisco, CA, December, 2011.
- P125. Vierling, L.A. 2011. Design and deployment of narrowband spectral radiometers to quantify vegetation dynamics. Washington State University Soil Science Seminar Series, 28 November 2011. (*Invited*).
- P124. Adam, P.M.***, Vierling, L.A., Vierling, K., Hudak, A.T., Strand, E.K., 2011. Assessing Pileated woodpecker habitat from space: predicting presence from lidar derived forest structure. Ecological Society of America, Austin, TX, August 2011.
- P123. Strand, E.K., S.C. Bunting, L.A. Vierling 2011. Landscape Dynamics in Aspen Woodlands on the Owyhee Plateau, Idaho, Oral presentation, State-and-Transition Landscape Modeling Conference Portland, Oregon June 15-17, 2011.
- P122. Vierling, L.A., Martinuzzi, S., Hudak, A.T., Garrity, S.R., Eitel, J.U.H., Strand, E.K., Falkowski, M.J., Vogeler, J.*, and Vierling, K.T. 2011. The role of remote sensing data in understanding agro-ecological legacies. *CATIE/PCP/UI Conference: From the Leaf to the Landscape: Field and Remote Sensing Approaches for Understanding Vegetation Structure and Dynamics*. CATIE, Turrialba, Costa Rica, 12-13 May 2011.
- P121. Hudak, A., E. Strand and L. Vierling. Inventory approaches to biomass supply assessment. Small-Scale Energy from Forest Biomass Workshop, University of Idaho Extension, Smelterville, Idaho, 29 Apr 2011.
- P120. Vierling, K.T., L.A. Vierling, B. Linkhart, P. Adam, J. Aycrigg, J. Murray, G. Sadoti, D. Vent, and J. Vogeler. Placing the keystones: elucidating interactions among woodpeckers and cavity-dependent species for improved vertebrate conservation and management. Idaho Chapter of The Wildlife Society Annual Meeting, Idaho Falls, Idaho, April 2011.
- P119. Adam, P., L. Vierling, K. Vierling, E. Strand, A. Hudak. Characterization of woodpecker habitat using airborne and satellite lidar derived forest structure metrics. Idaho Chapter of The Wildlife Society Annual Meeting, Idaho Falls, Idaho, April 2011.
- P118. Hicke, J.A., Pfeifer, E., Meddens, A., and Vierling, L.A. Interactions between climate, insect outbreaks, and forests. US-IALE 26th Annual Symposium, Portland, Oregon, 3-7 Apr 2011. (*invited*)
- P117. Hudak, A., E. Strand, L. Vierling, J. Eitel, and S. Martinuzzi. Multi-temporal LiDAR for mapping change in aboveground carbon pools in an actively managed coniferous forest. US-IALE 26th Annual Symposium, Portland, Oregon, 3-7 Apr 2011.
- P116. Adam, P.M.***, Vierling, L.A., Vierling, K., Hudak, A.T., Strand, E.K., 2011. Assessing Pileated woodpecker habitat from space: predicting presence from lidar derived forest structure. Ecological Society of America, Austin, TX, August 2011.

- P115. Meddens, A.*, Hicke, J.A., and Vierling, L.A. Classifying multiple stages of mountain pine beetle disturbance using multispectral aerial imagery in north-central Colorado. Presented at the American Geophysical Union Fall Meeting, San Francisco, CA, December, 2010.
- P114. Adam, P.***, Vierling, L., Vierling, K., Strand, E., and Hudak, A. Using satellite and airborne lidar to predict woodpecker presence at the landscape scale. Presented at the American Geophysical Union Fall Meeting, San Francisco, CA, December, 2010. (*note: this talk was featured on the BBC website (<http://www.bbc.co.uk/news/science-environment-11867165>) and BBC World Service, aired December 2010*).
- P113. Eitel, J.U.H.***, Williams, J., Vierling, L., Al-Hamdan, O., and Pierson, F. Suitability of terrestrial laser scanner derived surface roughness for predicting rill erosion in rangeland ecosystems. Presented at the American Geophysical Union Fall Meeting, San Francisco, CA, December, 2010.
- P112. Sankey, J.B., Germino, M.J., Glenn, N.F., Eitel, J.U.H., Vierling, L.A. **2010**. Post-fire soil stability and relation to vegetation at landscape to microsite scales. Alternative Management Strategies in Big Sagebrush Steppe: Perspectives, Opportunities and Supporting Evidence - 2010 Idaho Section Annual Symposium and Winter Meeting November 10-12, 2010, Idaho Falls, ID.
- P111. Vierling, L.A. The Great Exhale: Reflections on a Breathing Planet. Colorado College Department of Geology Symposium in honor of William Fischer and Eiler Henrickson, Colorado Springs, CO, October 8, 2010 (invited).
- P110. Vierling, L.A. The Role of Remote Sensing Data in Understanding Ecological Legacies, CATIE Scholarly Seminar, Turrialba, Costa Rica, 16 September 2010 (invited).
- P109. Hudak, A., E. Strand and L. Vierling. Utility of remotely sensed data for future forest inventory and monitoring. International Forestry Student Association (IFSA) Symposium, Kookmin University, Seoul, South Korea, 20 Aug 2010 (invited).
- P108. Hudak, A., E. Strand and L. Vierling. Assessment of coniferous forest carbon sequestration in the Northern Rockies, USA using LiDAR remote sensing, field surveys, and a forest growth model. International Union of Forestry Research Organizations (IUFRO) World Congress, Seoul, South Korea, 24 Aug 2010.
- P107. Vierling, L.A., Martinuzzi, S.***, Hudak, A.T., Garrity, S.R.***, Eitel, J.U.H.***, Strand, E.K., Falkowski, M.J., and Vierling, K.T. Landsat Time Series-based Vegetation Change: Context for Understanding Ecological Legacies. Landsat Science Team Semi-Annual Meeting, Boise, ID, 16 June 2010 (invited).
- P106. Vierling, L.A., Strand, E.K., Eitel, J.U.H., and Hudak, A.T. 200 kilohertz and a Cessna: Using lasers to measure forest dynamics for global carbon accounting. University of Idaho, April, 2010.
- P105. Hudak, A.T., Strand, E.K., and Vierling, L.A. Quantifying growth and disturbance effects on forest biomass from repeated field plot and LiDAR measures. USFS Rocky Mountain Research Station All-Scientists Meeting, Fort Collins, CO, March, 2010.
- P104. Hudak, A., L. Vierling and E. Strand. Using multi-temporal LiDAR to quantify biomass change. Inland Northwest Growth & Yield (INGY) Cooperative Annual Winter Technical Meeting, Spokane, Washington, 9 Mar 2010. (oral presentation).
- P103. Garrity, S.R.*** and Vierling, L.A.. Spatial and temporal variability of canopy GPP within a flux tower footprint. Presented at the American Geophysical Union Fall Meeting, San Francisco, CA, December, 2009.

- P102. Martinuzzi, S.***, Vierling, L.A., Gould, W.A., Hudak, A.T., Nelson, R., and Evans, J. Current Lidar applications in the Guánica Tropical Dry Forest Reserve. Presented at Silvilaser 2009, College Station, TX, October 2009.
- P101. Vierling, L.A., Hudak, A.T., and Strand, E.K. “Big Sky C Sequestration Partnership Forest Aboveground Carbon Assessment: Preliminary Validation”. Big Sky Carbon Sequestration Partnership Annual Meeting, Bozeman, MT, September, 2009. (invited)
- P100. Vierling, L.A. and Bradley, K. “Cutting Edge Science to the Public: Connecting the STEM Pipeline to EPSCoR Science at the McCall Outdoor Science School”. Idaho EPSCoR Annual Meeting, Moscow, ID, August 31, 2009 (invited).
- P99. Martinuzzi, S.***, Vierling, L.A., Gould, W.A., Falkowski, M.J., Hudak, A.T., and Vierling, K.T. “Using discrete return lidar data to map the distribution of snags, understory shrubs, and avian habitat suitability in a mixed conifer forest”. Ecological Society of America Annual Meeting, Albuquerque, NM, August 6, 2009. (invited)
- P98. Vierling, L.A. “Lidar remote sensing: shedding new light on studies of forest ecosystem structure and function”. Presented at the International Institute of Tropical Forestry, Rio Piedras, Puerto Rico, March 12, 2009.(invited)
- P97. Martinuzzi, S**, L.A. Vierling, W. Gould, M. Falkowski*, J. Evans, A.T. Hudak, and K.T. Vierling. Characterizing Wildlife Habitat With LiDAR Data: Distribution Mapping Of Snags And Understory Shrubs. Presented at the American Geophysical Union Fall Meeting, San Francisco, CA, December, 2008.
- P96. Jensen J.L.*, K.S. Humes, A.T. Hudak, and L.A. Vierling. Evaluation of MODIS and discrete-return lidar-based estimates of Leaf Area Index in conifer forests of northern Idaho. Presented at the American Geophysical Union Fall Meeting, San Francisco, CA, December, 2008.
- P95. Meddens, A.J.*, J.A. Hicke, and L.A. Vierling. Multi-Scale Validation of Forest Insect Mortality Using QuickBird and Aerial Imagery. Presented at the American Geophysical Union Fall Meeting, San Francisco, CA, December, 2008.
- P94. Vierling, L.A. Rangeland Health and Remote Sensing: Merging Tradition with Technology. National Park Service/Upper Columbia Basin Network 5th Annual Science Meeting, Moscow, ID, October 15-16, 2008.
- P93. Garrity, S.R.***, Mueller, K.L.*, Michalak, A.M., Vierling, L.A., Hardiman, B.* , and Vogel, C. Independent Assessments of fPAR for a Mixed Hardwood Forest Using a Variety of Optical Sensors, Presented at the Ecological Society of America Annual Meeting, Milwaukee, WI, August 2008.
- P92. Bickford, K.***, Vierling, L.A., Garrity, S.R.***, and Naupari, J.***. A simple filtered photodiode instrument for continuous measurement of narrowband NDVI and PRI, Presented at the 2008 International SpecNet Meeting, Centro di Ecologia Alpina, Trento, Italy, 30 June- 4 July, 2008.
- P91. Vierling, L.A. Climate Change, Carbon, and Rangelands, 2008 Tri-State Rangeland Ecology Short Course, Boise, ID, April 7-8, 2008.
- P90. Vierling, L.A. From Pixels to Production: Tools and Techniques for Using Remote Sensing to Understand Rangelands, 2008 Tri-State Rangeland Ecology Short Course, Boise, ID, April 7-8, 2008.

- P89. Hudak, A., J. Evans, D. McNamara, M. Falkowski*, J. Jensen*, S. Martinuzzi**, L. Vierling, and T. Link. Forestry applications of LiDAR in the Interior Northwest. USGS Second National Lidar Meeting, Reston, VA, 21-22 May, 2008.
- P88. Pocewicz, A.* , Nielsen-Pincus, M.* , Goldberg, C.S.* , Morgan, P., Force, J.E., Waits, L.P., and Vierling, L. Consequences of alternative residential development scenarios for agriculture, fire, water, and social acceptability in a rural landscape in north Idaho, USA. 23rd Annual Symposium of the United States Regional Chapter of the International Association for Landscape Ecology. April 7, 2008. Madison, WI.
- P87. Strand, E.K.** , Bunting, S., and Vierling, L. Landscape scale assessment of aspen decline in the Owyhee Mountains, Idaho. Presented at the Society for Range Management Annual Meeting, February, 2008.
- P86. Jensen, J.R.* , Humes, K., Hudak, A.T., and Vierling, L.A. Leaf Area Index Modeling and Mapping in Conifer Forests Using Multispectral and Lidar Data. Presented at the American Geophysical Union Fall Meeting, San Francisco, CA, December, 2007.
- P85. Vierling, L., Naupari, J.** , Garrity, S.** , Guenther, A., Serça, D., and Burban, B. Low-cost sensor packages for measuring narrowband canopy reflectance: implications for understanding regional C exchange. Presented at the American Geophysical Union Fall Meeting, San Francisco, CA, December, 2007.
- P84. Garrity, S.** , and Vierling, L. Using narrowband vegetation indices to estimate ecosystem-atmosphere CO₂ flux by a mixed hardwood forest. Presented at the American Geophysical Union Fall Meeting, San Francisco, CA, December, 2007.
- P83. Meddens, A.* , Hicke, J., Vierling, L., and Hudak, A. Estimating Aboveground Biomass Mortality of Lodgepole pine Caused by Mountain Pine Beetle in the Sawtooth Mountains, Idaho. Idaho Space Grant Consortium Annual Meeting, Moscow, ID, September, 2007.
- P82. Calhoun, M.J.** , and Vierling, L. Early detection of delayed tree mortality postfire using hyperspectral remote sensing. Ecological Society of America/Society for Ecological Restoration Joint Annual Meeting, San Jose, CA. August, 2007.
- P81. Martinuzzi, S.** , Vierling, L., Gould, W., Vierling, K., Hudak, A., and Nelson, R.F. Potential of LIDAR data to improve species modeling and habitat characterization. Ecological Society of America/Society for Ecological Restoration Joint Annual Meeting, San Jose, CA. August, 2007.
- P80. Vierling, L. From Surface to Satellite: Advanced methods for characterizing forest ecosystem structure and function. North Idaho Sustainable Forestry Teachers Tour. Lewiston, ID. June, 2007. (invited)
- P79. Jensen, J.R.* , Humes, K., Hudak, A.T., and Vierling, L.A. Comparison of single sensor vs. integrated data analysis to estimate leaf area index over a range of highly variable forest conditions in northern Idaho. Association of American Geographers Annual Meeting, San Francisco. April, 2007.
- P78. Martinuzzi, S.** , Vierling, L., Gould, W., Vierling, K., Hudak, A., and Nelson, R.F. The use of LIDAR data in improving species modeling and habitat characterization. Idaho Chapter of The Wildlife Society, 2007 Meeting, Pocatello, ID. March, 2007.
- P77. Naupari, J.** , Garrity, S.** , Vierling, L., Smith, A.M.S., Hinson, J., and Soulen, M. Automated Detection of Shrub Size, Location, and Cover Using Aerial Photography and Two-Dimensional Wavelet Analysis, Grazing Lands Conservation Initiative 2006 Meeting, St. Louis, MO. December, 2006. (invited)

- P76. Falkowski, M.J.*, Smith, A.M.S., Gessler, P.E., Hudak, A.T., and Vierling, L.A., Automatically Measuring Individual Tree Crown Diameter and Height from LiDAR Data: A Comprehensive Evaluation of Spatial Wavelet Analysis, American Geophysical Union Fall Meeting, San Francisco, CA. December, 2006.
- P75. Greenberg, J., Smith, A.M.S., Vierling, L.A., Dobrowski, S., and Vanderbilt, V. "Landscape-scale characterization of individual plants using hyperspatial remote sensing: techniques, technologies, and applications." American Geophysical Union Fall Meeting, San Francisco, CA. December, 2006.
- P74. Xu, Y.**, Garrity, S.R.**, Vierling, L.A., Martins, D.K.*, Shepson, P.B., and Stirm, B.H. "A software toolkit for processing and analyzing spectral and trace gas flux data collected via aircraft." American Geophysical Union Fall Meeting, San Francisco, CA. December, 2006.
- P73. Garrity, S.R.**, Vierling, L.A., Turnipseed, A., Vogel, C., Shepson, P., and Martins, D.* "A comparison between spectrally derived vegetation indices and CO₂/H₂O fluxes measured over a hardwood forest." American Geophysical Union Fall Meeting, San Francisco, CA. December, 2006.
- P72. D.K. Martins*, D.K., Shepson, P.B., Jacox, M., Smith, J., Garrity, S.**, Vierling, L., H.P. Schmid, Vogel, C., Zimmerman, J.R., Wyss, P., Santini, R., and Stirm, B. "A comparison of CO₂ and sensible heat flux measurements from aircraft and tower-based platforms." American Geophysical Union Fall Meeting, San Francisco, CA. December, 2006.
- P71. Strand, E.K.**, Vierling, L.A., Bunting, S.C., and Smith, A.M.S. "Net Changes in Above Ground Woody Carbon Stock in Western Juniper Woodlands using Wavelet Techniques and Multi-temporal Aerial Photography." American Geophysical Union Fall Meeting, San Francisco, CA. December, 2006.
- P70. Vierling, L.A. "Seeing the Leaves for the Forest: Some Improved Approaches for Foliar Remote Sensing." 2006 Idaho Space Grant Consortium Research Symposium, Moscow, ID. October, 2006.
- P69. Lewis, J.S.*, Rachlow, J.L., Garton, E.O., and Vierling, L.A. "Effects of habitat on GPS collar performance: using data screening to reduce location errors." The Wildlife Society Annual Meeting, Anchorage, AK, September 2006.
- P68. Clawges, R.**, Vierling, K., and Vierling, L. "Use of airborne lidar for assessment of avian habitat and estimation of select vegetation indices in the Black Hills National Forest, South Dakota, USA" IEEE International Geoscience and Remote Sensing Symposium (IGARSS), Denver, CO, July, 2006.
- P67. Vierling, L. "The Heart of Darkness? The Effect of Atmospheric Dimming on Rainforests of the Congo...and Beyond." Boise State University Geosciences Department, Boise, ID, March, 2006. (invited)
- P66. Garrity, S.**, Vierling, L., and Smith, A.M.S. "Automated detection of shrub size, location, and cover using aerial photography and two-dimensional wavelet analysis." Society for Range Management Annual Meeting, Vancouver, BC, February, 2006.
- P65. Strand, E.**, Vierling, L., and Bunting, S. "Predicting landscape composition under varying fire regimes in quaking aspen." Society for Range Management Annual Meeting, Vancouver, BC, February, 2006.

- P64. Strand, E.K**, Vierling, L.A., Smith, A.M.S., Bunting, S.C., Hann, D.B., and Gessler, P.E. "Wavelet Estimation of Plant Spatial Patterns in Multi-temporal Aerial Photography." American Geophysical Union Fall Meeting, San Francisco, CA December, 2005.
- P63. Vierling, L. and Chen, X.** "A simple and effective image normalization method to improve landscape change detection across sensors and across time." American Society for Photogrammetry and Remote Sensing Intermountain/Northern Rockies regional meeting, Boise, ID. November, 2005 (invited).
- P62. Vierling, L. "From the Leaf to the Landscape: New Prospects for Scaling Measures of Ecosystem Structure and Function." Washington State University, Pullman, WA. October, 2005 (invited).
- P61. Nelson, K.**; Zhu, Z., Vierling, L., and Ohlen, D. "Evaluating the Effects of Spatial Scale on Remotely- Sensed Mapping of Burn Severity: A Comparison of Landsat and MODIS Data" Annual Pecora Remote Sensing Conference, Sioux Falls, SD. October, 2005.
- P60. Vierling, L. "A Global Change Sampler Plate: Observations, Challenges, and Opportunities." Bates College, Lewiston, ME. October, 2005.
- P59. Vierling, L., and Chen, X.** "Sub-pixel vegetation cover estimates from remotely sensed imagery: Concepts, applications, and validation using an unmanned aerial vehicle." The Wildlife Society Annual Meeting, Madison, WI. September, 2005 (invited).
- P58. Vierling, L. "A Global Change Sampler Plate: Observations, Challenges, and Opportunities." University of Wyoming, Laramie, WY. June, 2005 (invited).
- P57. Vierling, L., Frykholm, J., Glasson, G., and Campbell, R.** "The Earth Systems Connections Elementary Curriculum." University of Wyoming, Laramie, WY. June, 2005 (invited).
- P56. Vierling, L., Chen, X.**; Rowell, E.**; and DeFelice, T. "The Use of Lidar to Validate Sub-Pixel Forest Cover Estimates from IKONOS and Landsat." Lidar Concepts and Resource Applications Workshop, USFS/RSAC, Salt Lake City, UT. May, 2005 (invited).
- P55. Seielstad, C., Rowell, E.**; Queen, L., Hardy, C., McCaughey, W., and Vierling, L. "Assessing Forest Fuels with Airborne Laser Altimetry." Lidar Concepts and Resource Applications Workshop, USFS/RSAC, Salt Lake City, UT. May, 2005.
- P54. Vierling, L., and Vierling, K. "Creating Undergraduate Community Ambassadors for Earth System Science" American Geophysical Union Fall Meeting, San Francisco, CA. December, 2004.
- P53. Chen, X.**; Vierling, L., and Deering, D. "A Simple and Effective Image Normalization Method to Monitor Boreal Forest Change in a Siberian Burn Chronosequence across Sensors and across Time." American Geophysical Union Fall Meeting, San Francisco, CA. December, 2004.
- P52. Toomey, M.** and Vierling, L. "A Comparison of Landsat TM and ASTER for Equivalent Water Thickness Derivation in a Ponderosa Pine Ecosystem." American Geophysical Union Fall Meeting, San Francisco, CA. December, 2004.
- P51. Vierling, L., Frykholm, J., Glasson, G., and Campbell, R.** "The Earth Systems Connections Elementary Curriculum." NASA Earth and Space Science Annual Education Workshop, NASA-Johnson Space Center, Houston, TX. November, 2004 (invited).
- P50. Vierling, L., Frykholm, J., and Glasson, G. "The Earth Systems Connections Elementary Curriculum: Contextual Learning Opportunities for Understanding the Earth as a System." NASA Earth Science Education Community Vision Meeting, Monterey, CA. November, 2004.

- P49. Vierling, L. "From the Leaf to the Landscape: Using Advanced Remote Sensing Techniques to Identify Plant Canopy Structure." Idaho National Environmental and Energy Laboratory (INEEL), Idaho Falls, ID. October, 2004 (invited).
- P48. Chen, X.**, Vierling, L., Rowell, E.**, and DeFelice, T. "Using Lidar and Effective LAI to Evaluate Vegetation Cover Estimates from IKONOS and Landsat 7 in a ponderosa pine forest." ForestPARC Lidar User's Conference, Moscow, ID. May, 2004 (invited).
- P47. Vierling, L. "From the Leaf to the Landscape: Using Advanced Remote Sensing Techniques to Detect and Map Vegetation Functional Groups." University of Idaho, Moscow. May 2004 (invited interview seminar).
- P46. Chen, X.**, Vierling, L., Deering, D., and Conley, A. "The Temporally Invariant Cluster (TIC) Method: a New Relative Radiometric Normalization Scheme for Detecting Landscape Change Using Multi-temporal Images." American Society for Photogrammetry and Remote Sensing Annual Meeting, Denver, CO. May 2004.
- P45. Smith, R.**, Chen, X.**, Conley, A., and Vierling, L. "Using MODIS and ETM+ to examine the effect of spatial scale on leaf area index estimates in forest burn chronosequences." Tenth Biennial USDA Forest Service Remote Sensing Applications Conference, Salt Lake City, UT. April 2004.
- P44. Rowell, E.**, Vierling, L., and Shepperd, W. Using Lidar Remote Sensing to Supplement Forest Inventory Variables and to Characterize Canopy Fuels in the Black Hills Experimental Forest." Tenth Biennial USDA Forest Service Remote Sensing Applications Conference, Salt Lake City, UT. April 2004.
- P43. Toomey, M.** and Vierling, L. "Remote Sensing of Landscape Level Foliar Moisture Using Landsat TM SWIR Reflectance." Tenth Biennial USDA Forest Service Remote Sensing Applications Conference, Salt Lake City, UT. April 2004.
- P42. Frykholm, J., Vierling, L., and Glasson, G. "Teaching Mathematics and Science... Via Satellite." International Consortium for Research in Science and Mathematics Education (ICRSME), Concepcion, Chile. March, 2004.
- P41. Vierling, L.A., Chen, X.**, Fersdahl, M.**, and Zimmerman, P. "Research and Outreach with the Short Wave Aerostat-Mounted Imager (SWAMI)." National Science Foundation CAREER Awardee Conference, Arlington, VA, January 2004 (invited).
- P40. Zimmerman, P., Price, M., Updegraff, K., Kozak, P.*, Capehart, B., Vierling, L., and Wylie, B. "Rangelands and Carbon Sequestration: Science and Marketing Issues." Presented at the Wyoming Council of Carbon Sequestration, Casper, Wyoming. January 2004 (invited).
- P39. Vierling, L.A., Chen, X.**, Fersdahl, M.**, and Zimmerman, P. "The Short Wave Aerostat-Mounted Imager (SWAMI): A Novel Hyperspectral Remote Sensing Instrument Platform." American Geophysical Union Fall Meeting, San Francisco, CA. December 2003 (invited).
- P38. Vierling, L.A., Frykholm, J., and Glasson, G. "Bringing Cutting-Edge Concepts to the Elementary Classroom: The Earth Systems Connections Science, Math, & Technology Curriculum." Presented at the annual NASA AESP/ERC educational resource workshop, NASA-Langley Research Center, Langley, VA. November 2003 (invited).
- P37. Zimmerman, P., Price, M., Updegraff, K., Kozak, P.*, Capehart, B., and Vierling, L. "Standardized Carbon Emission Reduction Credits: Maximized Value to Producers and Industry." Basin Electric Annual Meeting, Bismarck, ND. Invited address. November 2003 (invited).

- P36. Vierling, L.A. "Forests, Fires, and CO₂: Local Transformations, Global Implications." University of Idaho, Moscow, ID. October 2003 (invited).
- P35. Vierling, L., J. Frykholm, and G. Glasson. "Cutting-Edge Concepts for the Elementary Classroom: The Earth Systems Connections Science, Math, & Technology Curriculum." Western Regional NASA Space Grant Directors Meeting, Rapid City, SD. September, 2003 (invited).
- P34. Vierling, L., Frykholm, J., and Glasson, G. "The Earth Systems Connections Elementary Curriculum: Contextual Learning Opportunities for Building Ecological Knowledge." Presentation at the Ecological Society of America annual meeting, Savannah, GA, August 2003.
- P33. Smith, R.**, and Vierling, L. "Improved ground- and satellite-based methods for deriving LAI in a burned ponderosa pine ecosystem." Presentation at the Ecological Society of America annual meeting, Savannah, GA, August 2003.
- P32. Zimmerman, P., M. Price, W. Capehart, L. Vierling, C. Peng, E. Baker, G. Duke, F. Kopp, H. Mott, C. Das*, K. Updegraff, and C. Groseth. "C-Lock: a method for maximizing carbon sequestration in agricultural systems." In: Second Annual Conference on Carbon Sequestration: Developing and Validating the Technology Base to Reduce Carbon Intensity. Alexandria, VA, May 5–8, 2003. Online: <http://www.carbonsq.com/proceedings.cfm>.
- P31. Chen, X.**, Conley, A. and Vierling, L. "Remotely sensed estimates of Leaf Area Index in forests of Central Siberia using MODIS Data." South Dakota Academy of Sciences annual meeting, Rapid City, SD, April 2003. Poster presentation.
- P30. Vierling, L., Frykholm, J., and Glasson, G. "Connecting Elementary Children with Earth Systems Science Using Satellite Imagery, Mapping, and Mathematics." Presented at the National Science Teachers Association annual meeting, Philadelphia, PA, March 2003.
- P29. Glasson, G., Frykholm, J., and Vierling, L. "Using Traditional Ecological Knowledge to Develop an Earth System Science Elementary Curriculum." Presented at the National Association for Research in Science Teaching annual meeting, Philadelphia, PA, March 2003.
- P28. Vierling, L., Chen, X.**, Conley, A., Deering, D., Derr, K., Matzner, S., Rowell, E.**, Smith, R.**, Swets, D., and Toomey, M.** "Remote Determination of Leaf Area Index Along Fire Chronosequences in the Black Hills and Southern Siberia." Presented at the NASA EPSCoR Annual Conference, Washington, DC, March 2003.
- P27. Glasson, G., Frykholm, J., and Vierling, L. "Earth Systems Science: Crossing Cultural Borders." Presentation at the Mid-Atlantic Association for the Education of Teachers of Science, Natural Bridge, VA, October, 2002.
- P26. Vierling, L., Rowell, E.**, Smith, R.**, Chen, X.**, and Toomey, M.** "From surface to satellite: using remote sensing to measure and monitor forest ecosystems." South Dakota Association of Environmental Professionals 6th Annual Conference, Rapid City, SD, October, 2002 (invited).
- P25. Chen, X.**, Vierling, L., Dykstra, D.**, Rowell, E.**, and Capehart, W. "Assessing fractional tree coverage using IKONOS, Landsat 7, and LiDAR data in a ponderosa pine forest via sub-pixel interpretation." Presented at the Ecological Society of America annual meeting, Tucson, AZ, August, 2002.
- P24. Rowell, E.**, Vierling, L., Dykstra, D.**, and Chen, X.** "Small footprint LiDAR estimates of canopy gap structure in a ponderosa pine forest." Presented at the Ecological Society of America annual meeting, Tucson, AZ, August, 2002.

- P23. Vierling, L., Rowell, E.**, and Dykstra, D.** “LIDAR: A promising approach to estimating Western forest fire susceptibility.” Presented at the ESRI User’s Conference, San Diego, CA, July, 2002.
- P22. Vierling, L., Frykholm, J., and Glasson, G. “The Earth Systems Connections Elementary Curriculum: A World of Contexts for Teaching and Learning Remote Sensing.” Presented at the IEEE International Geoscience and Remote Sensing Symposium, Toronto, Canada, June, 2002. Oral presentation (invited lecture).
- P21. Vierling, L., Rowell, E.**, Chen, X.**, Dykstra, D.**, and Vierling, K. “Relationships Among Airborne Scanning LiDAR, High Resolution Multispectral Imagery, and Ground-Based Inventory Data in a Ponderosa Pine Forest.” Presented at the IEEE International Geoscience and Remote Sensing Symposium, Toronto, Canada, June, 2002. Poster presentation.
- P20. Vierling, L. “The Heart of Darkness: Understanding Light and Photosynthesis in a Congolese Rain Forest Canopy.” Black Hills Chapter of Sigma Xi, Semi-annual meeting, Rapid City, SD. April, 2002 (invited).
- P19. Chen, X.**, Vierling, L., Rowell, E.**, Dykstra, D.**, Capehart, W., and DeFelice, T. “Relationships Among IKONOS Imagery, Airborne Scanning LIDAR, and Ground-Based Tree Inventory Data in a Ponderosa Pine Forest: A Multiple Endmember Approach.” USGS/NIMA/NASA High Spatial Resolution Commercial Imagery Workshop, Reston, VA, March, 2002. Oral presentation.
- P18. Vierling, L., Frykholm, J., and Glasson, G. “It’s elementary, my dear! Earth systems science and mathematics lessons for K-5 inquiry.” National Science Teachers Association annual meeting, San Diego, CA, March, 2002. Oral presentation.
- P17. Vierling, L., Frykholm, J., and Glasson, G. “Global Greenup: An interactive elementary level earth system science and mathematics lesson.” National Science Teachers Association annual meeting, San Diego, CA, March, 2002. Oral presentation (invited).
- P16. Glasson, G., Frykholm, J., and Vierling, L. “Development of an Elementary Earth Systems Science and Mathematics Curriculum.” Association for the Education of Teachers in Science Annual Meeting, Charlotte, N.C., January, 2002. Oral presentation.
- P15. Vierling, L., Baker, B., Dykstra, D.**, Zimmerman, P., Clay, D., Robbins, C.**, and Meyers, T. “Short- and long-term studies of ecosystem-atmosphere CO₂ exchange in South Dakota.” South Dakota Academy of Sciences Annual Meeting, Vermillion, SD, April, 2001. Oral presentation.
- P14. Chen, X.**, Vierling, L., Doering, M.**, Engebretsen, R.**, Johnson, G., Nelson, K.** Obr, N.**, Pasala, A.**, and Zimmerman, P. “Development of the Short Wave Aerostat-Mounted Imager (SWAMI): A novel instrument for conducting small- to intermediate-scale remote sensing measurements.” South Dakota Academy of Sciences Annual Meeting, Vermillion, SD, April, 2001. Oral presentation.
- P13. Vierling, L., Frykholm, J., and Glasson, G. “Earth Systems Connections: Integrative Lessons for Use at the Elementary Level.” National Science Teachers Association annual meeting, St. Louis, MO. March, 2001. Oral Presentation.
- P12. Frykholm, J., Glasson, G., & Vierling, L. “Making Connections: Curricular Innovations in Elementary Mathematics, Science, and Technology Education.” Association of Mathematics Teacher Educators annual meeting, Costa Mesa, CA. January, 2001. Oral presentation.

- P11. Glasson, G.E, Frykholm, J., & Vierling, L. "Earth Systems Connections: Development of Elementary Science, Mathematics, and Technology Curriculum." Mid-Atlantic Association for the Education of Teachers of Science, Corbin, Kentucky. September, 2000.
- P10. Vierling, L. "The Heart of Darkness? Investigating light and CO2 dynamics within a monodominant Congolese rain forest canopy," University of Utah Biology Department, Salt Lake City, UT. March, 2000 (invited).
- P9. Frykholm, J., Vierling, L., and Glasson, G. E. "Earth Systems Connections: An Integrated K-4 Science, Mathematics, and Technology Curriculum." International Consortium for Research in Science and Mathematics Education (ICRSME), San Jose, Costa Rica. February, 2000.
- P8. Vierling, L., Guenther, A., Harley, P., Serca, D., Bouka-Biona, C., and Wessman, C. "Ecosystem-Atmosphere Exchange of Isoprene and CO2 at the EXPRESSO African Tropical Rainforest Site: Impacts of Clouds and Haze on Canopy Fluxes," International Global Atmospheric Chemistry Conference, Seattle, WA. August, 1998.
- P7. Vierling, L. "Impacts of Cloud and Haze Cover on the Photosynthesis of a Tropical Rain Forest Canopy," Environmental Protection Agency STAR Conference, Arlington, VA. June, 1998 (invited).
- P6. Vierling, L., and Harley, P. "Light and Temperature Within a Tropical Rainforest Canopy Under Varying Cloud Cover: Implications for Canopy Level CO2 Exchange," Ecological Society of America Annual Meeting, Albuquerque, NM. August, 1997.
- P5. Vierling, L. "Pieces of a Puzzle: Using Interdisciplinary Approaches to Study Planetary Breathing," National Center for Atmospheric Research, Boulder, CO. February, 1997 (invited).
- P4. Vierling, L., Deering, D., and Eck, T. "Differentiation of Arctic Tundra Vegetation Types and Aspects of Vegetation Phenology Early in the Growing Season Using Bidirectional Radiometry," IEEE International Geoscience and Remote Sensing Symposium, Lincoln, NE. May, 1996.
- P3. Vierling, L., Deering, D., and Eck, T. "Reflecting on Alaska: Using Surface Bidirectional Reflectance Characteristics to Differentiate Arctic Tundra Vegetation Types," Goddard Space Flight Center, Greenbelt, MD. August, 1995 (invited).
- P2. Vierling, L. "The Use of Stratigraphic and Palynological Analyses in Reconstructing Past Climates," The Colorado College, Colorado Springs, CO. October, 1993 (invited).
- P1. Vierling, L., and Sullivan, D. "The Late-Quaternary Paleoenvironmental History of Lost Park, Tarryall Mountains, Central Colorado: A Palynological Study," American Quaternary Association 12th biennial meeting, Davis, CA. August, 1992.

Grants and Contracts Pending and Awarded:

Research Contracts, Events or Other Financial Arrangements:

Awards received as a faculty member:

G59. Source of Support:	NSF
Project Title:	ITEST: Building STEM identity in Native American students with UAV technology
Award Amount:	\$1,101,525
Period of Award:	February 2016-January 2020
Vierling Role:	co-Principal Investigator (K. Eitel, PI)
Award Number:	1513349

G58. Source of Support: NASA
Project Title: Multisensor fusion for mapping of low-stature Arctic vegetation communities and woody biomass
Award Amount: \$90,000
Period of Award: September 2015-August 2018
Vierling Role: Principal Investigator/Advisor (Note: this is a Graduate Fellowship to H. Greaves, and co-advised with Jan Eitel, UI)
Award Number: NNX15AP04H

G57. Source of Support: NASA
Project Title: LiDAR, Passive Spectral, and Ecophysiological Approaches to Link Forest Tundra Ecotone Structure and Function
Award Amount: \$1.22 million
Period of Award: September 2015-August 2020
Vierling Role: Co-Principal Investigator (Jan Eitel, UI, PI)
Award Number: NNX15AT86A

G56. Source of Support: NASA
Project Title: Animals on the move: Remotely Based Determination of Key Drivers Influencing Movements and Habitat Selection of Highly Mobile Fauna throughout the ABoVE Study Domain
Award Amount: \$1.56 million
Period of Award: September 2015-August 2020
Vierling Role: Co-Principal Investigator (Natalie Boelman, Columbia University, Lead PI)
Award Number: NNX15AT89A

G55. Source of Support: National Science Foundation
Project Title: EPSCoR RII Track 1: Managing Idaho's Landscapes for Ecosystem Services
Award Amount: \$20,000,000
Period of Award: 6/01/13-5/31/18
Vierling Role: State Lead, External Engagement/Workforce Development
Award Number: EPS-1301792

G54. Source of Support: National Science Foundation
Project Title: CNH-Ex: Quantifying linkages among land-use policies, agricultural intensification, habitat fragmentation and social-ecological resilience in a tropical biological corridor
Award Amount: \$248,733
Period of Award: 6/01/13-5/31/15
Vierling Role: Co-Principal Investigator (L. Waits, UI, PI)
Award Number: 1313824

G53. Source of Support: USDA-Forest Service
Project Title: Upscaling fine-scale plant understory biodiversity to the stand and landscape levels with airborne lidar
Award Amount: \$29,400
Period of Award: 6/21/13-5/23/18
Vierling Role: Principal Investigator
Award Number: 13-JV-11221633-114

G52. Source of Support: NASA
Project Title: Land tenure, property rights and land cover and land use change at transboundary sites in the Mesoamerican Biological Corridor
Award Amount: \$298,350

Period of Award: 1/1/13-12/31/16
 Vierling Role: University of Idaho PI (K. Wendland, Colorado State U., Lead PI)
 Award Number: NNX13AC70G

G51. Source of Support: NASA
 Project Title: Quantifying Thresholds in Arctic Tundra Vegetation Structure and Ecosystem Function Using LiDAR and Multispectral Remote Sensing
 Award Amount: \$865,620
 Period of Award: 11/1/12-10/31/16
 Vierling Role: Principal Investigator
 Award Number: NNX12AK83G

G50. Source of Support: National Science Foundation
 Project Title: University of Idaho McCall Field Campus Research Infrastructure Planning
 Award Amount: \$25,000
 Period of Award: 2/1/11-1/31/13
 Vierling Role: Co-PI (S. Hollenhorst, PI)

G49. Source of Support: National Science Foundation
 Project Title: Collaborative Research: Sustainability dynamics for water resources in a rapidly urbanizing climatically sensitive region
 Award Amount: \$75,000
 Period of Award: 7/2010-6/2012
 Vierling Role: Collaborator

G48. Source of Support: USDA/USFS
 Project Title: Assessment and Review of Remote Sensing Technologies for Threat Detection
 Award Amount: \$25,000
 Period of Award: 7/2010-6/2012
 Vierling Role: Principal Investigator

G47. Source of Support: NASA
 Project Title: Collaborative development of a climate change curriculum for classrooms in the Intermountain West
 Award Amount: \$547,726
 Period of Award: 1/2011-12/2014
 Vierling Role: Science Co-PI

G46. Source of Support: USDA/NIFA
 Project Title: Site Specific Climate Friendly Farming
 Award Amount: \$4.64 million (UI portion: \$1,319,844.83)
 Period of Award: 4/1/2011-3/31/2017
 Vierling Role: Co-PI/University of Idaho PI (David Brown, WSU, PI)
 Award Numbers: 2011-67003-3034 and 2011-68002-30191

G45. Source of Support: National Science Foundation
 Project Title: IGERT: Evaluating resilience of ecological and social systems in changing landscapes: a doctoral research and education program in Idaho and Costa Rica
 Award Amount: \$3,200,000
 Period of Award: 9/2009-8/2015
 Vierling Role: Faculty Participant (N. Bosque-Perez, PI)

G44. Source of Support: US Forest Service
 Project Title: Relating avian diversity to potential old-growth forest structure as characterized by LiDAR
 Award Amount: \$20,600

Period of Award: 7/21/09-7/21/14
 Vierling Role: Co-Principal Investigator (K. Vierling, PI)

G43. Source of Support: US Forest Service
 Project Title: Quantifying Carbon Sequestration of Coniferous Forests in the Northern Rockies Using LiDAR
 Award Amount: \$13,550
 Period of Award: 8/7/09 – 9/30/11
 Vierling Role: Principal Investigator

G42. Source of Support: University of Idaho Research Office
 Project Title: Acquisition of Terrestrial Laser Scanning Instrumentation to Conduct Multidisciplinary Research
 Award Amount: \$150,000
 Period of Award: 4/2009 (one-time capital equipment purchase, therefore no end date)
 Vierling Role: Principal Investigator

G41. Source of Support: USDA-ARS
 Project Title: Evaluation of Rapid Eye Satellite Imagery for Prediction of Mid-season Nitrogen Levels in Spring Wheat
 Award Amount: \$33,000
 Period of Award: 4/3/09 – 3/31/11
 Vierling Role: Principal Investigator

G40. Source of Support: US Department of Energy
 Project Title: Quantifying Carbon Sequestration of Coniferous Forests in the Northern Rockies Using Field Surveys, Stand Growth Modeling, and Lidar Remote Sensing
 Award Amount: \$105,592
 Period of Award: February, 2009 – December, 2010
 Vierling Role: Principal Investigator

G39. Source of Support: NSF
 Project Title: Idaho EPSCoR Research Infrastructure Improvement: Water Resources in a Changing Climate
 Award Amount: \$15,000,000
 Period of Award: September 1, 2008 – August 31, 2013
 Vierling Role: Senior Personnel, Outreach (P. Goodwin, U. of Idaho, PI)

G38. Source of Support: Bureau of Land Management
 Project Title: Quantifying fine scale wind and water erosion after disturbance
 Award Amount: \$159,500
 Period of Award: June 1, 2008 through September, 2013
 Vierling Role: Principal Investigator

G37. Source of Support: USGS GAP Analysis Program
 Project Title: Incorporation of keystone species maps in GAP models to improve species habitat and biodiversity assessments
 Award Amount: \$241,724
 Period of Award: August 15, 2008 through August 14, 2011
 Vierling Role: Co-PI (K. Vierling, PI)

G36. Source of Support: USDA Borlaug Fellowship Program
 Project Title: Spatial modeling to study landscape connectivity of neotropical tree species in fragmented landscapes: *Dipteryx panamensis* as a study case
 Award Amount: \$6,170

Period of Award: August 16, 2007 through October 22, 2007
 Vierling Role: Principal Investigator

G35. Source of Support: United States Geological Survey
 Project Title: Algorithm Development for Improved Automated Remote Detection of Land Areas Containing High Fire Risk for Incorporation in LANDFIRE
 Award Amount: \$84,993
 Period of Award: July 30, 2007 through July 29, 2009
 Vierling Role: Principal Investigator

G34. Source of Support: United States Geological Survey
 Project Title: LANDFIRE product development for USGS/EROS
 Award Amount: \$30,000
 Period of Award: June 10, 2007 through December 30, 2007
 Vierling Role: Principal Investigator

G34. Source of Support: University of Idaho Interdisciplinary Grants Program
 Project Title: Landscapes Without Borders: Towards an interdisciplinary teaching and research program to analyze landscapes for ecology and conservation
 Award Amount: \$14,464
 Period of Award: July 1, 2007 through June 30, 2008
 Vierling Role: Principal Investigator with L. Waits and R. Dezzani

G33. Source of Support: National Park Service
 Project Title: NPS Socioeconomic Atlas
 Award Amount: \$29,835
 Period of Award: August 21, 2006 through August 14, 2007
 Vierling Role: Collaborator (J. McKendry, PI)

G32. Source of Support: Sub Contract: to University of North Dakota (Prime: NASA)
 Project Title: ForestPARC (Forest Public Access Resource Center)
 Award Amount: \$135,000
 Period of Award: January 1, 2007 through December 31, 2007
 Vierling Role: Co-PI (A. Smith, PI)

G31. Source of Support: University of Idaho Harold Heady Professorship
 Project Title: Improving methods for remote monitoring of rangeland ecosystem health
 Award Amount: \$105,000
 Period of Award: July 1, 2006 through June 30, 2011
 Vierling Role: Principal Investigator

G30. Source of Support: UI Research Council
 Project Title: Development and application of a novel remote sensing technique to quantify woody plant encroachment
 Award Amount: \$9,000
 Period of Award: July 1, 2006 through June 30, 2007
 Vierling Role: Principal Investigator with E. Strand (UI Graduate Student)

G29. Source of Support: USGS GAP Analysis Program
 Project Title: Modeling GAP habitats: Integrating high spatial resolution imagery with GAP landcover to extrapolate habitat biophysical characteristics
 Award Amount: \$132,278
 Period of Award: July 2006 through April 2010
 Vierling Role: Co-PI (W. Gould, USFS-IITF, Puerto Rico, PI)

G28. Source of Support: UI NSF IGERT Program

Project Title: Analysis of past exurban development trends to improve future landscape-level modeling in northern Idaho
 Award Amount: \$20,000
 Period of Award: August 2005 through May 2006
 Vierling Role: Principal Investigator

G27. Source of Support: Center for Research on Invasive Species and Small Populations
 Project Title: Comparison of Methods for Sampling and Analysing Spatial Structures in Landscape Genetics
 Award Amount: \$54,950
 Period of Award: February 2006 through May 2009
 Vierling Role: Co-Principal Investigator (L. Waits, PI)

G26. Source of Support: David Little Endowment
 Project Title: Hyperspectral Imaging for Range Monitoring and Management
 Award Amount: \$26,000
 Period of Award: January 2005 through December 2006
 Vierling Role: Principal Investigator

G25. Source of Support: NASA
 Project Title: Leaf Area Index for Fire Chronosequences of the Black Hills and Southern Siberia: A Comparative Study
 Award Amount: \$820,000
 Period of Award: September 1, 2001 through August 31, 2008
 Vierling Role: Principal Investigator

G24. Source of Support: NSF CAREER Program
 Project Title: CAREER: An Integrated Research/Educational Plan to Develop and Deploy a Pointable, Hyperspectral Remote Sensing Instrument on a Tethered Balloon
 Award Amount: \$509,000 (original award and one supplement)
 Period of Award: Sept. 1, 2000 through August 31, 2008
 Vierling Role: Principal Investigator

G23. Source of Support: Sub Contract: to University of North Dakota (Prime: NASA)
 Project Title: ForestPARC (Forest Public Access Resource Center)
 Award Amount: \$110,500
 Period of Award: December, 2005 through December, 2006
 Vierling Role: Co-PI (P. Gessler, UI, PI)

G22. Source of Support: NSF CAREER Program
 Project Title: REU Supplement: An Integrated Research/Educational Plan to Develop and Deploy a Pointable, Hyperspectral Remote Sensing Instrument on a Tethered Balloon
 Award Amount: \$11,988
 Period of Award: May 1, 2003 through August 31, 2003
 Vierling Role: Principal Investigator

G21. Source of Support: South Dakota Center for Biocomplexity Studies (NSF EPSCoR)
 Project Title: Quantification and Scaling-up of the Coupled Biogeochemical Cycles of Carbon and Water in Grassland Ecosystems of South Dakota: Synthesis of Flux Tower Measurements, Modeling, GIS, and Remote Sensing
 Award Amount: \$50,207
 Period of Award: February 2004 through February 2005
 Vierling Role: Principal Investigator

G20. Source of Support: NASA
 Project Title: Earth Systems Connections: An Integrated K-4 Science, Mathematics, and Technology Curriculum
 Award Amount: \$471,100

Period of Award: Jan. 1, 1999 through September 30, 2004
 Vierling Role: Principal Investigator

G19. Source of Support: Bush Foundation Faculty Development Program
 Project Title: Making Undergraduate Writing Come Alive: Bringing Biography to the Classroom
 Award Amount: \$5,000
 Period of Award: December 2003 through July 2004
 Vierling Role: Principal Investigator

G18. Source of Support: Sub Contract: to University of North Dakota (Prime: NASA)
 Project Title: A Public Access Resource Center (PARC) Empowering the General Public to Use EOSDIS
 Award Amount: \$110,481
 Period of Award: November 15, 1996 to March 31, 2004
 Vierling Role: Co-PI (S. Farwell, SDSM&T, PI)

G17. Source of Support: Sub Contract: to University of North Dakota (Prime: NASA)
 Project Title: A Public Access Resource Center (PARC) Empowering the General Public to Use EOSDIS: Implementation Phase III (ESIP)
 Award Amount: \$89,700
 Period of Award: March 1, 1998 through February 29, 2004
 Vierling Role: Co-PI (S. Farwell, SDSM&T, PI)

G16. Source of Support: Sub Contract: to University of Idaho (Prime: NASA)
 Project Title: Forest Public Access Resource Center (ForestPARC)
 Award Amount: \$45,000
 Period of Award: July 1, 2003 through March 31, 2004
 Vierling Role: Co-PI (P. Gessler, U. Idaho, PI)

G15. Source of Support: USDA Forest Service
 Project Title: Lidar Remote Sensing for Precision Forest Management
 Award Amount: \$12,424 (SDSM&T/UI portion)
 Period of Award: August 8, 2003 through June 30, 2005
 Vierling Role: Co-PI (A. Hudak, USFS, PI)

G14. Source of Support: South Dakota Space Grant Consortium
 Project Title: Development of Culturally-Relevant Videos for Inclusion with National NASA Earth System Science Curriculum
 Award Amount: \$2,000
 Period of Award: 2002
 Vierling Role: Principal Investigator

G13. Source of Support: Bush Foundation Faculty Development and SDSM&T EPSCoR Office
 Project Title: JSTOR: Expanding the Electronic Wing of Devereaux Library to Enrich Undergraduate Research at SDSM&T
 Award Amount: \$6,000
 Period of Award: 2001-2002
 Vierling Role: Principal Investigator

G12. Source of Support: EarthWatch, Inc.
 Project Title: Geometric Calibration of the QuickBird Satellite in Western South Dakota
 Award Amount: \$14,000
 Period of Award: 2000
 Vierling Role: Principal Investigator
 Note: This contract did not reach completion due to satellite launch failure

G11. Source of Support: SDSM&T Nelson Research Grant

Project Title: Studying integrated impacts of environmental change on the prairie potholes region of eastern South Dakota

Award Amount: \$5,000
 Period of Award: 1999-2000
 Vierling Role: Principal Investigator

G10. Source of Support: SD Governor's Office
 Project Title: C-Lock: A system for certifying soil carbon credits in South Dakota
 Award Amount: \$750,000
 Period of Award: July 1, 2000-June 30, 2003
 Vierling Role: Co-PI (2000-2001); Collaborator (2002-2003) (P. Zimmerman, SDSM&T, PI)

G9. Source of Support: Subcontract to University of North Dakota (NASA: Prime)
 Project Title: The Upper Midwest Aerospace Consortium Research and Applications Center (UMAC-RESAC)
 Award Amount: \$118,800
 Period of Award: 1999-2003
 Vierling Role: Co-PI (S. Farwell, SDSM&T, PI)

Awards received as a student:

G8. Source of Support: United States Environmental Protection Agency STAR Graduate Fellowship
 Project Title: Regionalization of trace gas flux measurements and implications for global change
 Award Amount: \$75,000
 Period of Award: 1996-1999

G7. Source of Support: Biosphere-Atmosphere Research Training Grant, University of Colorado (NSF funded)
 Project Title: Regionalization of trace gas flux measurements and implications for global change
 Award Amount: \$20,000
 Period of Award: 1995-1996

G6. Source of Support: Grant-in-aid of Graduate Research, *Sigma Xi*
 Project Title: Measurements of light transfer in a tropical rain forest: implications for modeling canopy-level isoprene fluxes
 Award Amount: \$800
 Period of Award: 1996

G5. Source of Support: Dean's Small Grant, University of Colorado
 Project Title: Remote sensing of biogeochemical processes in the tropics
 Award Amount: \$475
 Period of Award: 1996

G4. Source of Support: Departmental Grant, Environmental, Population, and Organismic Biology (CU-Boulder)
 Award Amount: \$1,000
 Period of Award: 1996

G3. Source of Support: Venture Undergraduate Research Grant, Colorado College
 Project Title: Reconstructing past climates of Colorado using pollen analysis
 Award Amount: \$850
 Period of Award: 1991

G2. Source of Support: Colorado Mountain Club Foundation Research Grant Program
 Project Title: Reconstructing past climates of Colorado using pollen analysis
 Award Amount: \$500
 Period of Award: 1991

G1. Source of Support: Boettcher Foundation of Colorado
Award Amount: \$80,000 (full undergraduate scholarship to any college/university in Colorado)
Period of Award: 1988-1992

Cooperative Agreements Brokered and Donations Arranged:

2019. Worked with Idaho Department of Fish and Game and CNR Dean to establish and hire a new joint tenure-track faculty line co-funded by IDFG and CNR/UI.
2011. Partnered with Decagon Devices, Inc. to develop shortwave radiometers for monitoring vegetation stress and productivity.
2011. Established new cooperative agreement with the RapidEye satellite image company for them to provide scores of high resolution satellite images of Costa Rica and the Washington-Idaho border. This data supported NSF-IGERT and USDA-AFRI project research initiatives and represented a monetary value over \$150,000.
2009. Arranged the donation of a major research tower to the University of Idaho; a new tower of this type has a value of \$75,000.
2009. Established cooperative agreement with the RapidEye satellite image company for them to provide our research laboratory with several high resolution satellite images of Moscow Mountain and central New Mexico, a value of approximately \$15,000.
- 2005-2009. Assisted with attracting a gift from alumni donors Thomas and Teita Reveley to establish the UI Remote Sensing and Spatial Ecology Complex at the UI College of Natural Resources, March 2006. \$250,000. My work on the Reveley Complex, coupled with follow-up interactions with the Reveleys, later helped the UI and CNR to attract an additional \$1,000,000 donation from this generous family.
2000. Established cooperative agreement with Horizons Incorporated, Rapid City, SD to co-fund one graduate student and donate lidar remote sensing services for research and teaching purposes for research and development in forestry applications of lidar. ~\$80,000.
2000. Established cooperative agreement with Sarnoff Laboratories, Princeton NJ (Formerly RCA Labs) Pyramid Vision Technologies Subsidiary to extend the use of defense-grade computer vision technologies for natural resource monitoring applications. ~\$60,000 of equipment currently on loan to UI from company.
2000. Forged seven-year agreement between SDSM&T, US Forest Service, and NOAA Atmospheric Turbulence and Diffusion Lab, Oak Ridge, TN, to establish the Black Hills Ameriflux tower funded by NOAA.
2000. Established cooperative agreement with US Geological Survey EROS Data Center, Sioux Falls, SD to fully fund a graduate student in my laboratory as a research assistant for the interagency LANDFIRE project. ~\$40,000.

SERVICE:

Major Committee, Reviewer, and Professional Society Activities:

Search Committee co-Chair, assistant/associate/full professor of Industrial Ecology, UI-Idaho Falls and Idaho National Lab (2019-20)

Co-Chair of curriculum revision, UI Environmental Science curriculum committee (2019)

Search Committee Chair, Idaho Department of Fish and Game-University of Idaho tenure track assistant/associate/full professor of Human Dimensions of Fish and Wildlife (2019)

Reviewer, Dutch Research Council, NWO Domain Science Board, Netherlands (2019)

External Dissertation Evaluator, University of British Columbia (2013, 2019)

University of Idaho Team Leader, Kiva.org microlending team (2009-2019)

Search Committee Chair, McCall Field Campus Tenure-track faculty search in Environmental Technology (2018)

Associate Editor, *Canadian Journal of Remote Sensing* (2007-2017)

Faculty Mentoring Committee member, Beth Newingham (2009-2014); Chao Fan (2017-present); Luigi Boschetti (2014-2018); Blair McLaughlin (2014-2017); Dan Johnson (2014-2018); Tara Hudiburg (2015-2018); Chris Caudill (2015-2018)

Core Faculty, University of Idaho Environmental Science Program (2008-2015)

Curriculum Committee, UI Environmental Science Program (2011-2015)

University of Idaho education liaison, Upper Midwest Aerospace Consortium (2005-2014)

Search Committee co-Chair, Conservation Social Sciences/MOSS new faculty hire (2013-2014)

Chair of Task Force to Develop Future Plan for Conservation Social Sciences Department, University of Idaho (2014)

University of Idaho Department of Conservation Social Sciences Faculty Search Committee Member (2013)

Chair, University of Idaho College of Natural Resources Geospatial Laboratory Committee (2011-2012)

Member, Scientific Committee, Silvilaser 2012 International LiDAR Conference (2011-2012)

University of Idaho College of Natural Resources Forest, Range, and Fire Sciences Department Head Search Committee (2011-2012)

University of Idaho, Martin Institute of International Studies Borah Symposium Committee (2011-2012)

External Tenure and Promotion Reviewer, University of Hawaii (2011)

University of Idaho College of Natural Resources Dean Search Committee (2009-2010)

Reviewer, Climate Change & Energy Program, *U.S. Civilian Research and Development Foundation* (2010)

Associate Editor, *Journal of Applied Remote Sensing* (2010-2011)

Member, Technical Committee, 30th Canadian Symposium on Remote Sensing (22-25 June, 2009)

Member, Scientific Committee, Silvilaser 2009 International Conference (14-16 October, 2009)

Advisory Panel Member for the Journal *Nature* (2008-2009)

Co-Lead, College of Natural Resources/University of Idaho RFI proposal (2008-2009)

University of Idaho President's Athletic Advisory Council (2007-2010)

College of Natural Resources Curriculum Committee (2006-2009)

CNR/UI Reveley Geospatial Laboratories Remodeling Design and Implementation (2005-2008)

Wildland Restoration Ecologist Faculty Search Committee, UI Department of Rangeland Ecology and Management (2007-2008)

University of Idaho College of Natural Resources Associate Dean Search Committee (2007).

Biometrician/Ecosystem Modeler Faculty Search Committee, UI Forest Resources Dept. (2006-2007)

UI/CNR Geospatial Curriculum Subcommittee co-organizer, CNR and Geography (2005-2006)

Faculty participant, University of Idaho IGERT program (2005-2007)

Chair, academic design committee to combine UI Forest Resources and Rangeland Ecology and Management departments (2005-2006)

Biogeochemical Modeler Faculty Search Committee, UI Geography Department (2005-2006)

SDSM&T education liaison, Upper Midwest Aerospace Consortium (1999-2004)

Member, SDSM&T Faculty Development Committee (2000-2004)

Member, Spearfish Canyon Foundation Ecology Subcommittee (2000-2004)

Manuscript reviewer, *Science*, *Science Advances*, *Proceedings of the National Academy of Sciences*, *Proceedings of the Royal Society-B*, *Methods in Ecology and Evolution*, *Carbon Balance and Management*, *Photosynthesis Research*, *Remote Sensing*, *Journal of Applied Ecology*, *EOS*, *Ecological Applications*, *Oecologia*, *Global Change Biology*, *Remote Sensing of Environment*, *IEEE Transactions on Geoscience and Remote Sensing*, *Journal of Geophysical Research-Biogeosciences*, *Canadian Journal of Remote Sensing*, *Atmospheric Chemistry and Physics*, *International Journal of Applied Earth Observation and Geoinformation*, *Computers and Electronics in Agriculture*, *Sensors*, *Forestry Chronicle*, *Journal of Environmental Management*, *Landscape and Urban Planning*, *Canadian Journal of Forest Research*, *Forest Ecology and Management*.

I have reviewed approximately 70 NSF proposals as a panelist reviewer (7 on-site review panels including MRI, DBI, and EPSCoR reverse site visit) and ad-hoc reviewer for the National Science Foundation (1999-present)

Member, NSF Division of Environmental Biology, Development of Biological Infrastructure Review Board (2001-2003)

I have reviewed ~50 NASA proposals, and served on five NASA proposal review panels: Terrestrial Ecology Program (three times); Cryospheric Sciences Program (twice)

I have reviewed research proposals for scientific agencies within the Canadian, Dutch, and British governments, as well as for The Nature Conservancy (2002-present)

Reviewer, *The State of the Nation's Ecosystems*, The Heinz Center (2006)

Member, South Dakota NASA EPSCoR Technical Advisory Committee (2001-2004)

Frequent contributor to Idaho and South Dakota NSF EPSCoR Program Activities (1999-present)

Professional and Scholarly Organizations:

American Geophysical Union

(Special Session co-Organizer, AGU Fall Meeting, San Francisco, CA, 2006)

Ecological Society of America

(Special Session co-Organizer, ESA Annual Meeting, Albuquerque, NM, 2009)

Phi Beta Kappa

Society for Range Management

Sigma Xi, The Scientific Research Society

Outreach Service:

Annual Faculty Representative at Vandal Friday/Envision Idaho/UIIdaho Bound programs (2011-present).

Supported a very large portfolio of outreach as Executive Director of the University of Idaho McCall Field Campus/McCall Outdoor Science School. This \$1.4M annually, self-financially-supporting suite of outreach and education programming has received state, national, and international awards for excellence in community development, informal education, and economic impact (2012-2019).

State Lead for External Engagement and Workforce Development for the \$20M NSF EPSCoR “Managing Idaho’s Landscapes for Ecosystem Services (MILES)” award to the State of Idaho. As part of this program I was responsible for running the statewide Adventure Science program and MILES Undergraduate Research Internships (MURI) program, meeting project targets to increase research participation by Idaho’s 2-year institutions, high school teachers, and populations that are underrepresented in the science, technology, engineering, and mathematics fields (2013-2018).

Young Scientist Mentor (mentored one new assistant professor and one Ph.D. student), NASA Carbon Cycle and Ecosystems Joint Meeting, April 2015.

Presenter and assisted in the development of “Drones for Forestry” Extension Program, University of Idaho, Coeur d’Alene, Idaho (30 foresters and landowners in attendance), February 27, 2015).

External Review Panel Member to conduct Decadal Review of Geology Department, The Colorado College (2014-2015).

Presenter, HOIST program for Native American students in the STEM fields, McCall, Idaho, June 2014.

Parker Farm Precision Agriculture Technology Demonstration Day. Moscow, ID. 6/5/2014. Media reports and interviews found here: *Capital Press*: <http://cpweb.eor.dc.publicus.com/Research/20140515/field-day-to-emphasize-precision-ag#.U63AMbFBnoE>; *The Washington Times*: <http://www.washingtontimes.com/news/2014/jun/8/precision-ag-technologies-showcased-at-moscow/?page=all>

Guest presenter to high school mathematics class on opportunities in the STEM fields, High School for Telecommunication Arts and Technology, New York Public Schools, February 2014.

Outreach/Workforce Development Lead Faculty, Idaho NSF Experimental Program to Stimulate Competitive Research (EPSCoR). (2008-present). Lead statewide workforce development and external engagement activities for State of Idaho NSF EPSCoR. Since 2013, this program has recruited 60 REU students and 90 teachers annually to engage with the research programs across the State of Idaho.

Program Planning Committee Member, Northwest Climate Science Center Climate ‘Boot Camp’ for graduate students studying climate change science and impacts (2013).

UI Honors program: Served as a guest speaker for a 2-hour evening session to advise students associated with the University Honors Program about questions they had regarding career directions, and in particular, establishing and sustaining a positive ‘work-life balance’ (2012).

UI CNR Seminar Series: Conceptualized, invited, coordinated, and hosted NASA Chief Scientist Dr. Waleed Abdalati’s 2-day campus visit to Moscow including a full itinerary including a public lecture, classroom visits, student roundtable discussions, press conference, and VIP dinner at CNR Dean’s home (2012)

UI Honors Program, ‘Fireside chat’ session faculty leader (2009, 2011, 2014)

Co-designed and co-taught 3-day geospatial and climate change workshops to K-12 teachers at McCall Outdoor Science School (twice in 2010, once in 2011)

Led vegetation map development for Tenmile Ranch Conservation Easement, Lewiston, ID, with REM 472 Remote Sensing of Environment course (2008)

Led service learning project for post-fire native grass restoration, Soulen Livestock Company, Weiser, ID, with REM 429 Landscape Ecology course (2006)

Led vegetation map development for Soulen Livestock Company, Weiser, ID, in conjunction with REM 429 Landscape Ecology course (2005)

Judge, UI Graduate Student Association Grad Expo (2005)

Presenter, Mentor, Volunteer and/or Advisor to the following groups:

Area schoolchildren (I give presentations to K-12 teachers and students ~3-5 times annually)

Upper Midwest Aerospace Consortium EdPARC (Educational Public Access Resource Center; 1999-2013)

NASA Educational Outreach Network Specialists (1999-2006)

NASA “Ask an Earth Scientist” booth during National Science Teachers Association annual meetings (2000-2004)

Federal Communications Commission Chairman Michael Powell (2003)

Black Hills Upward Bound Program participants (2002-2003)

SDSM&T Scientific Knowledge for Indian Learning and Leadership (SKILL) program (1999-2004)

Youth Engineering Adventure (YEA) participants (2001-2002)

Oglala Lakota College Biology Department (2001-2002)

NASA Space Days (2001)

South Dakota Legislators (2000-2003)

South Dakota State University Precision Agriculture Farmers Group (2000)

Mongolian Technical University students (2000)

Rapid City Children's Science Center (1999-2003)

National Center for Atmospheric Research SOARS minority research program (1997)

The Nature Conservancy, Colorado office headquarters (1992-1993)

For many years I required students in my classes to deliver presentations to groups in the general public. Audiences have included area schoolchildren, retirement homes, business leaders, social clubs, and journalists (see Publication J27).

My work has been featured in the following articles written for lay audiences:

“Lasers Help Map Hard-to-Reach Spider Habitat”, *Wired Magazine* on-line: (<http://www.wired.com/wiredscience/2011/04/lasers-map-spiders/>), 4/2011.

“Space Laser Spies for Woodpeckers”, BBC World Service and BBC Website (<http://www.bbc.co.uk/news/science-environment-11867165>), 12/2010.

“Keep high-tech jobs in the Black Hills”, *Rapid City Journal*, 7/2005.

“Educator Features: Earth Systems Connections”, Special NASA on-line Earth Day Education short segment, www.nasa.gov, 4/2004.

“SWAMI predicts more accurate future for atmospheric satellites”, *Rapid City Journal*, 6/2003.

“Research team delays flight over fire area”, *Rapid City Journal*, 7/2002.

“A partnership with NASA”, *Virginia Tech Gridiron Magazine*, 9/2001.

“Studying forest from sky”, *Rapid City Journal*, 7/2001.

“Air farming to be investigated in South Dakota”, www.cnn.com news story, 2/2000.

Community Service:

Assistant Baseball Coach, Palouse area Cal Ripken Baseball (2018, 2019)

Vice-President (2017) and President (2018), Quad Cities Fusion Soccer Club

Soccer Coach, Moscow United Soccer Club (2013-2014)

Student Mentor, Moscow School District (2009-2010)

Director, Spearfish Canyon Foundation Board of Directors (2002-2004).

Chair, Rapid City Historic Preservation Commission (2003-2004).

Member, Rapid City Historic Preservation Commission (2000-2004).

I try to keep my children off the street (5/23/2000-present).

HONORS AND AWARDS:

Received on behalf of McCall Outdoor Science School as Executive Director:

Universities Economic Development Association National Award, Talent+Place Category (2018)

North American Association for Environmental Education/Underwriter's Laboratories Innovation in Education Award, North America (2015)

Idaho Power "Powering Lives" Award (2014)

Association of Public and Land-grant Universities Magrath Award for Excellence in Outreach, National Runner-up (2013)

W.K. Kellogg Foundation/APLU West Regional Award for Engaged Scholarship (2013)

J.A. and Kathryn Albertson Foundation ID21 Award for Excellence in Education (2012)

Received as an individual:

College of Natural Resources, Outstanding Instructor Award (2019)

University of Idaho Presidential Mid-Career Award for Faculty Excellence (2014).

University of Idaho Office of Technology Transfer, Innovation Award Certificate of Appreciation for invention disclosure (2009).

Idaho Experimental Program to Stimulate Competitive Research and McCall Outdoor Science School Certificate of Recognition for Excellence in Outreach (2009).

University of Idaho College of Natural Resources Outstanding Research Award (2007).

Harold Heady Professor of Rangeland Ecology, University of Idaho Department of Rangeland Ecology and Management. (2006-2011).

Faculty Award for Outstanding Scholarly and Professional Service, South Dakota School of Mines and Technology (2000).

National Faculty Early Career Development (CAREER) Award, National Science Foundation (2000).

STAR Graduate Fellowship, United States Environmental Protection Agency (1996).

Distinction in Geology, Geology Department, The Colorado College (1992).

Graduation with honors, *magna cum laude*, The Colorado College (1992).

Inducted into Phi Beta Kappa, The Colorado College Chapter of Phi Beta Kappa (1992).

J. Juan Reid Award of Excellence in Service, Academics, and Athletics, The Colorado College (1992).

Outstanding Student Award, Rocky Mountain Association of Geologists (1992).

Rhodes Scholarship (state finalist), Oxford University (1991).

Undergraduate Merit Award, State of Colorado (1991).

National Collegiate Athletics Association (NCAA) Academic All-America Nominee in Baseball, The Colorado College (1990, 1992).

Boettcher Full Undergraduate Scholarship, The Boettcher Foundation (1988).

PROFESSIONAL DEVELOPMENT NOT MENTIONED ABOVE:

Teaching and Advising:

Advising, "Advising Skills for Faculty", University of Idaho, Moscow ID (September 2008).

Teaching, "ArcGIS for Education", Education Public Access Resource Center, Las Vegas, NV. (February 17, 2006 - February 20, 2006).

Teaching, "JSTOR: Expanding the Electronic Wing of Devereaux Library to Enrich Undergraduate Research at SDSM&T", Bush Faculty Development Program, South Dakota School of Mines and Technology, Rapid City, SD. (2001 - 2002).

Scholarship:

Scholarship, "Making Undergraduate Writing Come Alive: Bringing Biography to the Classroom", Bush Foundation, Rapid City, SD. (January 2004 - May 2004).

NIH IRB Training Certification Completed May 11, 2012, Certification number 919042 (<http://phrp.nihtraining.com/users/cert.php?c=918042>)

Outreach and Leadership:

Selected for UI President's Media Ambassador program and went through training for that program (May, 2013)

Leadership, "Academic Leadership: A Seminar for Faculty Considering or Continuing in Academic Leadership Roles", Transformational Leadership and Training (TiLT) group, Washington State University and University of Idaho, Moscow, ID. (October 24, 2009).

Outreach/Leadership, "Opportunities and Challenges for Scientists in a Changing World: A Communications Workshop", University of Idaho (nominated by CNR Dean to participate in workshop, which included national and regional-level journalists and leaders in science communications). Moscow, ID. (September 16, 2011)

HIGHLIGHTS AS MFC/MOSS ADMINISTRATOR:

My leadership role as Executive Director of the UI-CNR McCall Field Campus and McCall Outdoor Science School was integrative and broad-reaching. I worked with the McCall team and Moscow-based faculty/staff/administration to strategically define and accomplish goals. Major accomplishments during my tenure from 2012-2019 included:

1. UI/CNR/MOSS was named in the Top 5 of all environmental STEM Education organizations in North America by Underwriter's Laboratories and the North American Association for Environmental Education.

MOSS was the only award recipient located west of Pennsylvania. MOSS also received the top award by the Universities Economic Development Association in the category Talent + Place in 2018.

2. UI/CNR/MOSS being awarded the major W.K. Kellogg Outreach and Engagement award for the Western U.S., and we competed for the National Magrath Outreach award in the company of Pennsylvania State University, Ohio State University, and U. Texas-El Paso.
3. Authority/responsibility for \$1.4M annual budget, 97% of which is soft funded. Highlights include paying off an outstanding \$310,000 debt (which existed on the books when I became Executive Director) in three years. During my tenure as Executive Director the MOSS annual budget increased 3.3 fold.
4. Shifting from an AmeriCorps-based funding model to a more diversified funding model in order to attract 20-25 M.S. and/or M.N.R. students into the MOSS program each year. This decision paid off greatly, as soon after making this shift, the Idaho National AmeriCorps grant was declined for funding. Had we not already moved away from this funding model our graduate student class of 2013-2014 (and our ability to serve our 2500 K-12 student visitors annually) would have suffered a disastrous blow.
5. Integrating McCall-based activities with Moscow efforts. MOSS hosted the first-ever visit of the full CNR Dean's office staff and CNR administration in February 2013. We instituted a new marketing program in collaboration with CNR marketing and recruiting. We initiated a Distinguished Scholars Program at MOSS and attracted numerous faculty to include MOSS in their grant writing activities. We hosted our first-annual Open House August 2015. President Staben attended and spoke at the McCall Field Campus 75th Anniversary celebration in September, 2014.
6. Developed and implemented a new funding model for schools to attend MOSS and qualify for state tax credits. This model arose out of a crisis by the Moscow School District, which suffered \$1.3M in cuts in 2013; MOSS was on the chopping block. The new model keeps costs stable for families of students, eliminates the MSD financial obligation, and creates an avenue for the UI Foundation to receive donations from a broader array of donors.
7. We worked in 2013 to develop the new McCall Field Campus Master Plan, coming on the heels of the recent UI acquisition of the Field Campus property deed. This process was led by the CNR Dean. My part in this work involved coordinating input from MOSS staff, traveling to Islandwood (MOSS peer institution on Bainbridge Island), and serving on the committee to review and select an architecture firm proposal to develop the Master Plan, which was completed in January 2014 and served as the template for a complete redesign of the McCall Field Campus and the needed fundraising.