

## *Curriculum vitae*

### **Scott Powell**

Assistant Professor of Environmental Spatial Analysis  
Department of Land Resources and Environmental Sciences  
Montana State University  
Bozeman, MT 59717  
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### **EDUCATION**

**Ph.D.**, November 2004

Department of Ecology  
Montana State University, Bozeman, MT  
*Advisor:* Dr. Andrew Hansen

*Title:* Conifer cover increase in the Greater Yellowstone Ecosystem: Rates, extent, and consequences for carbon.

**Master of Environmental Management**, May 1997

Nicholas School of the Environment  
Duke University, Durham, NC  
*Advisor:* Dr. Dean Urban

*Title:* An analysis of the pattern and distribution of landscape change in the North Carolina Piedmont  
*Concentration:* Resource ecology with an emphasis on landscape ecology and conservation biology.

**Bachelor of Arts**, May 1993

Macalester College, St. Paul, MN  
*Advisor:* Dr. Mark Davis

*Majors:* Biology and Environmental Studies

*Study abroad:* School for Field Studies, Wildlife Ecology and Management Program, Kenya, spring 1992

### **PROFESSIONAL EXPERIENCE**

**Assistant Professor of Environmental Spatial Analysis**, Department of Land Resources and Environmental Sciences, Montana State University, Bozeman, MT  
August 2014 - present

**Assistant Research Professor of Geographic Information Science**, Department of Land Resources and Environmental Sciences and Spatial Sciences Center, Montana State University, Bozeman, MT  
Research foci include remote sensing of forest disturbance, biomass, and carbon using Landsat time series data and forest inventory data; monitoring forest dynamics; quantifying agricultural management practices and soil carbon sequestration; and using hyperspectral imagery to monitor carbon dioxide leakages associated with terrestrial sequestration. January 2009 – July 2014

**Program Coordinator, Online M.S. in Land Resources and Environmental Sciences**, Department of Land Resources and Environmental Sciences, Montana State University, Bozeman, MT  
Responsibilities include teaching one course per semester (Landscape and Ecosystem Ecology; Environmental Remote Sensing), advising graduate students, providing programmatic and curricular oversight, coordinating teaching efforts within the program, and serving as a point of contact between LRES and Extended University. August 2012 - present

**Postdoctoral Research Ecologist**, U.S.D.A. Forest Service, Pacific Northwest Research Station, Corvallis, OR  
Research funded by NASA's Carbon Cycle Science to investigate the use of remote sensing and forest inventory data for characterization of North American disturbance and succession regimes, in support of the North American Carbon Program. Additional research funded by the Washington Department of Fish and Wildlife to develop techniques for quantifying land cover dynamics using a 34 year time-series of Landsat imagery. January 2005 – January 2009

**Affiliate Faculty**, Department of Forest Science, Oregon State University, Corvallis, OR

Co-taught a graduate-level seminar in remote sensing of vegetation. June 2006 – January 2009

**Research Assistant**, Department of Ecology, Montana State University, Bozeman, MT  
Funding provided by NASA's Land Cover Land Use Change Program to detect and quantify the extent and rate of conifer cover increase in the Greater Yellowstone Ecosystem. Consequences of forest dynamics for carbon balance were assessed by integration of field measurements, remote sensing, and statistical modeling. July 2000 – November 2004

**GIS Analyst**, Management Assistance Corp. of America, U.S.D.A. Forest Service, Rocky Mountain Research Station, Fort Collins, CO  
Performed GIS and statistical analyses, and managed spatial databases for research dealing with forest response to climate change at the U.S. and global scales. January 1998 - December 1999

**Field Ecologist**, Landscape Ecology Laboratory, H.J. Andrews Experimental Forest, Blue River, OR  
Coordinated field effort to establish permanent research plots in support of an environmental variability and forest pattern study. Established a GPS/GIS database, and measured forest structure, stand composition, and soil characteristics. Summer 1997

**Research Ecologist**, Landscape Ecology Laboratory, Nicholas School of the Environment, Duke University  
Analyzed a 20-year time series of satellite imagery of the Piedmont, using change vector analysis, to determine the pattern and rate of landscape change. May 1996 - May 1997

#### **CURRENT AND RECENT RESEARCH GRANT ACTIVITIES**

##### **NASA Land Cover/Land Use Change Program, 2014-2017**

*Downscaling IPCC land use scenarios for global change adaptation planning in mountainous environments.*

##### **USGS, 2014-2015**

*Projecting climate change effects on aspen distribution and productivity in the Northern Rockies by coupling hydrological and landscape-disturbance models.*

##### **NASA Carbon Monitoring System Program, 2012-2014**

*Integrating and expanding a regional carbon monitoring system in the NASA CMS.*

##### **Montana Space Grant Consortium, 2012-2014**

*Disturbance interactions in the Greater Yellowstone Ecosystem: Time-series analyses of aerial photography and Landsat satellite imagery.*

##### **United States Department of Agriculture, NIFA, 2012-2014**

*Integrated, observation-based carbon monitoring for wooded ecosystems in Washington, Oregon, and California.*

##### **U.S. Department of Transportation, Federal Highway Administration, 2011-2012**

*Assessing the carbon sequestration potential of roadsides and roadside re-vegetation.*

##### **National Park Service, 2010-2012**

*Developing methods for monitoring change in conifer cover across biophysical gradients in national parks.*

##### **Department of Energy, 2012-2013**

*Big Sky Carbon Sequestration Partnership Phase III - Hyperspectral sensor for large-area monitoring of carbon dioxide reservoirs and pipelines.*

##### **Department of Energy, 2009-2011**

*Big Sky Carbon Sequestration Partnership Phase II - Monitoring agricultural practices affecting soil carbon storage using satellite remote sensing.*

##### **Montana State University, Interdisciplinary Proposal Development Fund, 2011**

*Medium-term forecasts of forest composition, structure, and function in the Greater Yellowstone Ecosystem: Response to and recovery from multiple disturbances.*

**Montana State University, Extended University, 2011**

*Expanding access to MSU through new online programs.*

**NASA Carbon Cycle Science. 2008-2010**

*Role of North American Forest Disturbance and Regrowth in the North American Carbon Program: Integrated Analyses of Landsat and U.S. Forest Service Forest Inventory and Analysis Data – Phase 2.*

**TEACHING EXPERIENCE**

**Department of Land Resources and Environmental Sciences**

Montana State University, Bozeman, MT

*Graduate Seminar (LRES 594), spring 2012*

*Landscape and Ecosystem Ecology (LRES 571), fall 2012, spring 2014, spring 2015*

*Remote Sensing Applications in Environmental Science (LRES 573), spring 2013, spring 2014, fall 2014*

*Remote Sensing and Digital Image Processing (GPHY 426), fall 2013*

**University Honors Program**

Montana State University, Bozeman, MT

*Texts and Critics (UH 201), fall 2011*

*Honors Seminar: Where science and policy diverge: A global tour of climate change science and political deadlock (UH 494CS), fall 2013, fall 2014, fall 2015*

**Affiliate Professor**

Oregon State University, Corvallis, OR

*Synthesis in Remote Sensing of Vegetation (FS599), Department of Forest Science, fall 2006*

**Teaching Assistant**

Montana State University, Bozeman, MT

*Principles of Ecology (BIOL303), Department of Ecology, spring 2004*

**Invited Lecturer**

Montana State University, Bozeman, MT

*Spatial Sciences Technology and Application (LRES 262), Department of Land Resources and Environmental Sciences, spring 2011, spring 2013, spring 2014, spring 2015*

*Land Resources and Environmental Sciences (LRES 110), Department of Land Resources and Environmental Sciences, fall 2010, fall 2011, fall 2013, fall 2014*

*Yellowstone: A Scientific Laboratory (ERTH 212), Department of Earth Science, fall 2010*

*Landscape Ecology and Management (BIOL515), Department of Ecology, fall 2003, fall 2011*

*Principles of Ecology (BIOL303), Department of Ecology, spring 2004*

*Remote Sensing and Image Processing (LRES325), Department of Land Resources and Environmental Sciences, fall 2003*

Oregon State University, Corvallis, OR

*Advanced Aerial Photography and Remote Sensing (FOR420/520), College of Forestry, fall 2006*

**PUBLICATIONS**

Vsevolozhskaya, O.A., M.C. Greenwood, **S.L. Powell**, and D.V. Zaykin. 2014. Resampling-based multiple comparison procedure with application to point-wise testing with functional data. *Environmental and Ecological Statistics*.

Bellante, J.G., **S.L. Powell**, R.L. Lawrence, K. Repasky, and T. Dougher. 2014. Hyperspectral detection of a subsurface CO<sub>2</sub> leak in the presence of water stressed vegetation. *PLoS ONE* 9(10): e108299.doi:10.1371/journal.pone.0108299.

Kennedy, R.E., S. Andréfouët, W.B. Cohen, C. Gómez, P. Griffiths, M. Hais, S.P. Healey, E.H. Helmer, P. Hostert, M.B. Lyons, G.W. Meigs, D. Pflugmacher, S.R. Phinn, **S.L. Powell**, P. Scarth, S. Sen, T.A. Schroeder,

A. Schneider, R. Sonnenschein, J.E. Vogelmann, M.A. Wulder, and Z. Zhu. 2014. Bringing an ecological view of change to Landsat-based remote sensing. *Frontiers in Ecology and the Environment* doi:10.1890/130066.

**Powell, S.L.**, W.B. Cohen, R.E. Kennedy, S.P. Healey, and C. Huang. 2014. Observation of trends in biomass loss due to disturbance in the conterminous U.S.: 1986-2004. *Ecosystems* 17: 142-157.

Vsevolozhskaya, O., M. Greenwood, G. Bellante, **S. Powell**, R. Lawrence, and K. Repasky. 2013. Combining functions and the closure principle for performing follow-up tests in functional analysis of variance. *Computational Statistics and Data Analysis* 67: 175-184.

**Powell, S.L.**, A.J. Hansen, T.J. Rodhouse, L.K. Garrett, J.L. Betancourt, G.H. Dicus, and M.K. Lonnerker. 2013. Woodland dynamics at the northern range periphery: A challenge for protected area management in a changing world. *PLoS ONE* 8(7): e70454. doi:10.1371/journal.pone.0070454.

Bellante, J.G., **S.L. Powell**, R.L. Lawrence, K. Repasky, and T. Dougher. 2013. Aerial detection of a simulated CO<sub>2</sub> leak from a geologic sequestration site using hyperspectral imagery. *International Journal of Greenhouse Gas Control* 13: 124-137.

Savage, S.L., R.L. Lawrence, S.G. Custer, J.T. Jewett, **S.L. Powell**, and J.A. Shaw. 2012. Analyzing change in Yellowstone's terrestrial emittance with Landsat imagery. *GIScience and Remote Sensing* 49(3): 317-345.

Jewett, J., R. Lawrence, L. Marshall, P. Gessler, **S. Powell**, and S. Savage. 2011. Spatiotemporal relationships between climate change and whitebark pine mortality in the Greater Yellowstone Ecosystem. *Forest Science* 57(4): 320-335.

Watts, J.D., **S.L. Powell**, R.L. Lawrence, and T. Hilker. 2011. Improved classification of conservation tillage adoption using high temporal and synthetic satellite imagery. *Remote Sensing of Environment* 115: 66-75.

Healey, S.P., E. Lapoint, G. Moisen, and **S. L. Powell**. 2011. Maintaining the confidentiality of plot locations by exploiting the low sensitivity of forest structure models to different spectral extraction kernels. *International Journal of Remote Sensing* 32(1): 287-297.

Thomas, N.E., C. Huang, S.N. Goward, **S.L. Powell**, K. Rishmawi, K. Schleeweis, and A. Hinds. 2011. Validation of North American forest disturbance dynamics derived from Landsat time series stacks. *Remote Sensing of Environment* 115: 19-32.

**Powell, S.L.**, W.B. Cohen, S.P. Healey, R.E. Kennedy, G.G. Moisen, K.B. Pierce, and J.L. Ohmann. 2010. Quantification of Live Aboveground Forest Biomass Dynamics with Landsat Time-Series and Field Inventory Data: A Comparison of Empirical Modeling Approaches. *Remote Sensing of Environment* 114: 1053-1068.

**Powell, S.L.**, R.L. Lawrence, C. Sommers Austin, S. Wood. 2010. A flexible approach to help overcome limitations of moderate resolution satellite imagery for mapping invasive saltcedar on the Bighorn River, Montana. *Journal of Terrestrial Observation* 2(2): 9-22

Savage, S.L., R.L. Lawrence, S.G. Custer, J.T. Jewett, **S.L. Powell**, and J. A. Shaw. 2010. Review of alternative methods for estimating terrestrial emittance and geothermal heat flux for Yellowstone National Park using Landsat imagery. *GIScience and Remote Sensing* 47(4): 460-479.

**Powell, S.L.**, W.B. Cohen, Z. Yang, J.D. Pierce, and M. Alberti. 2008. Quantification of impervious surface in the Snohomish Water Resources Inventory Area of Western Washington from 1972-2006. *Remote Sensing of Environment* 112: 1895-1908.

Goward, S.N., J.G. Masek, W. Cohen, G. Moisen, G.J. Collatz, S. Healey, R.A. Houghton, C. Huang, R. Kennedy, B. Law, **S. Powell**, D. Turner, and M.A. Wulder. 2008. Forest disturbance and North American Carbon Flux. *EOS, Transactions, American Geophysical Union* 89(11): 105-116.

**Powell, S.L.**, and A.J. Hansen. 2007. Conifer cover increase in the Greater Yellowstone Ecosystem: Frequency, rates, and spatial variation. *Ecosystems* 10(2): 204-216.

**Powell, S.L.**, D. Pflugmacher, A.A Kirschbaum, Y. Kim, and W.B. Cohen. 2007. Moderate resolution remote sensing alternatives: a review of Landsat-like sensors and their applications. *Journal of Applied Remote Sensing*, doi: 10.1117/1.2819342.

Zambon, M., R.L. Lawrence, A. Bunn, and **S. Powell**. 2006. Effect of alternative splitting rules on image processing using classification tree analysis. *Photogrammetric Engineering and Remote Sensing* 72(1): 25-30.

Hansen, A.J., R.L. Knight, J. M. Marzluff, **S. Powell**, K. Brown, P. H. Hernandez, and K. Jones. 2005. Effects of exurban development on biodiversity: Patterns, mechanisms, and research needs. *Ecological Applications* 16(6): 1893-1905.

Lawrence, R.L., A. Bunn, **S. Powell**, and M. Zambon. 2004. Classification of remotely sensed imagery using stochastic gradient boosting as a refinement of classification tree analysis. *Remote Sensing of Environment* 90: 331-336.

Wessels, K.J., R.S. Defries, J. Dempewolf, L.O. Anderson, A.J. Hansen, **S. L. Powell**, and E.F. Moran. 2004. Mapping regional land cover with MODIS data for biological conservation: Examples from the Greater Yellowstone Ecosystem, USA and Para State, Brazil. *Remote Sensing of Environment* 92: 67-83.

#### **BOOK CHAPTERS, REPORTS, CONFERENCE PROCEEDINGS, AND THESES**

Ament, R., **Powell, S.**, Stoy, P., and Begley, J. 2014. Roadside vegetation and soils on federal lands – Evaluation of the potential for increasing carbon capture and storage and decreasing carbon emissions. A report prepared for the Western Federal Lands Highways, Federal Highway Administration, Vancouver, WA.

**Powell, S.** 2011. Spatial and temporal dynamics of recent forest disturbance in the Greater Yellowstone Ecosystem. In *Questioning Greater Yellowstone's Future: Climate, Land Use, and Invasive Species. Proceedings of the 10<sup>th</sup> Biennial Scientific Conference on the Greater Yellowstone Ecosystem*. October 11-13, 2010, Mammoth Hot Springs Hotel, Yellowstone National Park. C. Andersen, ed., Yellowstone National Park, WY, and Laramie, WY: Yellowstone Center for Resources and University of Wyoming William D. Ruckelshaus Institute of Environment and Natural Resources.

**Powell, S.L.**, A.J. Hansen, and W.B. Cohen. 2008. Mapping the extent and distribution of conifer cover increase in the Greater Yellowstone Ecosystem. In Dupont, A., and Jacobs, H. (Eds.), *Landscape Ecology Research Trends* (pp. 27-43). Nova Science Publishers, Hauppauge, New York.

**Powell, S.L.**, W. Cohen, and R. Kennedy. 2007. Analysis of biomass change derived from spectral trajectories. *American Society for Photogrammetry and Remote Sensing – New Remote Sensing Technologies for Resource Managers: Proceedings of the Eleventh Forest Service Remote Sensing Applications Conference, Salt Lake City, UT, April 24-28, 2006*.

Masek, J.G., Wolfe, R., Hall, F., Goward, S.N., Huang, C., Cohen, W.B., Kennedy, R.E., **Powell, S.L.**, Healey, S.P., and Moisen, G. 2007. Assessing North American forest disturbance from the Landsat archive, *IGARSS Proceedings, 2007, Barcelona, Spain*.

Healey S., G. Moisen, J.G. Masek, W.B. Cohen, S.N. Goward, **S.L. Powell**, M. Nelson, D. Jacobs, A. Lister, R. Kennedy, and J. Shaw. 2006. Measurement of forest disturbance and re-growth with Landsat and FIA data: anticipated benefits from FIA's collaboration with NASA and University partners. *Proceedings of the Seventh Annual Forest Inventory and Analysis Science Symposium, Portland, Maine, October 2005*.

**Powell, S.L.** 2004. Conifer cover increase in the Greater Yellowstone Ecosystem: Rates, extent, and consequences for carbon. Dissertation. Montana State University, Bozeman, MT, USA.

**Powell, S.L.** 1997. An analysis of the pattern and distribution of landscape change in the North Carolina Piedmont. Thesis. Nicholas School of the Environment, Duke University, Durham, NC, USA.

**ORAL PRESENTATIONS AND POSTERS (\* denotes student presenter)**

Cohen, W.B., Z. Yang, S.V. Stehman, D. Bell, C. Allen, T. Schroeder, S. Healey, **S. Powell**, D. Mildrexler, G. Meigs, J. Masek, C. Huang, and T. Hilker. 2015. Declining forest health in the the western United States: Exploring the climate connection. *5<sup>th</sup> North American Carbon Program Principal Investigators Meeting*, Washington, D.C., January 26<sup>th</sup>-29<sup>th</sup>, 2015.

**Powell, S.L.**, W.B. Cohen, R.E. Kennedy, and S.P. Healey. 2014. Estimates of U.S. forest biomass loss as a result of disturbance from a Landsat time-series approach. *ForestSAT*, Riva del Garda, Italy.

**Powell, S.L.** 2013. Algorithm assessment and intercomparison working group summary. *NASA CMS Science Team Meeting*, Pasadena, California.

**Powell, S.L.**, W.B. Cohen, R.E. Kennedy, and S.P. Healey. 2013. Empirical observation of trends in biomass loss due to disturbance in the conterminous U.S.: 1986-2004. *North American Carbon Program All-Investigators Meeting*, Albuquerque, New Mexico.

Bellante, G.\*, **S. Powell**, R. Lawrence, K. Repasky, and T. Dougher. 2013. Hyperspectral Remote Sensing as a Monitoring Tool for Geologic Carbon Sequestration, *American Society for Photogrammetry and Remote Sensing 2013 Proceedings*, March 24-28, 2013, Baltimore, Maryland.

Bellante, G.\*, **S. Powell**, R. Lawrence, K. Repasky, and T. Dougher. 2012. Hyperspectral Remote Sensing as a Monitoring Tool for Geologic Carbon Sequestration, *AmericaView Fall Technical Meeting*, September 24-26, 2012, Sioux Falls, South Dakota.

**Powell, S.L.**, R.E. Kennedy, J.L. Ohmann, W.B. Cohen, M. Gregory, H. Roberts, V. Kane, and J. Lutz. 2012. Comparison of biomass allometric approaches for regional scale carbon mapping, *ForestSAT*, Corvallis, OR

**Powell, S.L.**, W.B. Cohen, R.E. Kennedy, S.P. Healey, and C. Huang. 2012. Assessment of forest disturbance and biomass flux across the conterminous U.S. Invited presentation to the Forest Dynamics and Disturbance session, *Association of American Geographers Annual Meeting*, New York, NY.

**Powell, S.L.** 2011. Forest disturbance, biomass, and the carbon cycle. Invited presentation to the USGS Northern Rocky Mountain Science Center, Bozeman, MT.

**Powell, S.L.** 2010. Spatial and temporal dynamics of recent forest disturbance in the Greater Yellowstone Ecosystem. *The 10<sup>th</sup> Biennial Scientific Conference on the Greater Yellowstone Ecosystem*, Yellowstone National Park, WY.

**Powell, S.L.**, W.B. Cohen, and R.E. Kennedy. 2010. Aboveground forest biomass trends for the conterminous U.S. inferred from Landsat time-series and field inventory data. Invited presentation to *Synergy of EO Products to Map the Essential Climate Variable Biomass*, *IEEE International Geoscience and Remote Sensing Symposium*, Honolulu, HI.

Bellante, G.\*, **S.L. Powell**, R.L. Lawrence, K.S. Repasky, and T. Dougher. 2010. Hyperspectral imaging for large-area monitoring of carbon dioxide sequestration sites. *IEEE International Geoscience and Remote Sensing Symposium*, Honolulu, HI.

**Powell, S.L.** 2010. Forest disturbance dynamics and the carbon cycle – linking remote sensing, field data, and modeling. Invited presentation to the Department of Ecology, Montana State University, Bozeman, MT, 4/29/10.

**Powell, S.L.**, W.B. Cohen, and R.E. Kennedy. 2010. Assessment of trends in live, aboveground biomass for the conterminous U.S. *2010 NASA Terrestrial Ecology Science Team Meeting*, La Jolla, CA.

**Powell, S.L.** 2010. Reconciling differences in forest carbon models: Improving our quantification of forest disturbance dynamics. Invited presentation to the Department of Land Resources and Environmental Sciences, Montana State University, Bozeman, MT, 1/25/10.

**Powell, S.L.**, W.B. Cohen, and R.E. Kennedy. 2009. Aboveground Forest Biomass Dynamics: Assessment with Landsat Time-Series and Field Inventory Data. *The Fifth International Workshop on the Analysis of Multi-temporal Remote Sensing Images*, Groton, CT.

- Powell, S.L.,** B. Butler, R. Riemann, S. Healey, W. Cohen, and R. Kennedy. 2008. Quantifying land cover trends for the state of Rhode Island: Satellite time-series analysis for FIA reporting needs. *2008 FIA Science Symposium*, Park City, UT.
- Powell, S.L.,** Kennedy, R.E., Healey, S.P., Pierce, K.B., Cohen, W.B., Moisen, G.G., Ohmann, J.L. 2008. Comparison of methods to model aboveground biomass for derivation of 20+ year trajectories. *NASA Carbon Cycle and Ecosystems, Joint Science Workshop*, College Park, MD.
- Powell, S.L.,** W.B. Cohen, and Z. Yang. 2007. Mapping urban land cover dynamics in Western Washington. Invited presentation to the *Oregon State University Spatial Data Management Group*, Corvallis, OR.
- Powell, S.L.,** W.B. Cohen, and Z. Yang. 2006. Mapping urban land cover dynamics in Western Washington. Invited presentation to the *Oregon State University College of Forestry, Advanced Aerial Photography and Remote Sensing class*, Corvallis, OR.
- Powell, S.L.** 2006. Reducing uncertainty in ecosystem dynamics with field ecology and remote sensing. Invited presentation to the Department of Biology, Linfield College, McMinnville, OR.
- Powell, S.L.,** K.B. Pierce, S.P. Healey, W.B. Cohen, G.G. Moisen, and J.L. Ohman. 2006. Comparison of methods for mapping changes in forest structure. *Eighth Annual Forest Inventory and Analysis Science Symposium*, Monterey, CA.
- Powell, S.L.,** W.B. Cohen, S.P. Healey, R.E. Kennedy, G.G. Moisen, S.N. Goward, J.G. Masek, C. Huang. 2006. Integration of Forest Inventory Data with Landsat Time Series Data for Characterization of Forest Disturbance and Regrowth: Joint Objectives of the North American Carbon Program (NACP) and Forest Inventory and Analysis (FIA). *Joint Workshop on NASA Biodiversity, Terrestrial Ecology, and Related Applied Sciences*, College Park, MD.
- Powell, S.L.,** W.B. Cohen, R.E. Kennedy. 2006. Analysis of biomass change derived from spectral trajectories. *Eleventh Biennial USDA Forest Service Remote Sensing Applications Conference*, Salt Lake City, UT.
- Powell, S.L.,** W.B. Cohen, and T. Schroeder. 2005. Characterizing successional variability: Linking FIA and Landsat. *Seventh Annual Forest Inventory and Analysis Symposium*, Portland, ME.
- Powell, S.L.** 2004. Conifer cover increase in the Greater Yellowstone Ecosystem: Rates, extent, and consequences for carbon. Ph.D. defense seminar. Montana State University, Bozeman, MT.
- Powell, S.L.** 2003. Using remote sensing to quantify changes in forest structure and composition in the Greater Yellowstone Ecosystem. *Remote Sensing at Montana State University Conference*, Bozeman, MT.
- Powell, S.L.,** and A.J. Hansen. 2003. Spectral modeling of forest dynamics in Greater Yellowstone. *Annual meeting of the International Association of Landscape Ecology*, Banff, Alberta, Canada.
- Powell, S.L.,** and A.J. Hansen. 2002. Abiotic drivers of conifer forest expansion in the Greater Yellowstone Ecosystem. *Annual meeting of the Ecological Society of America*, Tucson, AZ.
- Powell, S.L.,** A.J. Hansen, and R.L. Lawrence. 2001. Conifer forest expansion and densification in the Greater Yellowstone Ecosystem: Detection and quantification over a 15-year time period. *Annual meeting of the International Association of Landscape Ecology*, Tempe, AZ.
- Powell, S.L.,** D.L. Urban, and P.N. Halpin. 1997. An analysis of the pattern and distribution of landscape change in the North Carolina Piedmont. *Annual meeting of the International Association of Landscape Ecology*, Durham, NC.

## **AWARDS**

- MSU Excellence in Online Teaching Award, 2015
- PNW Research Station's Science Findings Award with W. Cohen, R. Kennedy, and S. Healey, 2006
- NASA-MSU Professional Enhancement Award, 2001
- William R. Angell Foundation Prize for Excellence in Biological Sciences, 1993

## **SYNERGISTIC ACTIVITIES**

- Member, Scientific Committee, IEEE/GRSS International Geoscience and Remote Sensing Symposium, 2014, 2015
- Member, NASA Carbon Monitoring System Science Team, 2012-2014
  - Algorithm Assessment/Inter-comparisons Working Group Coordinator
- NASA Earth Science Senior Review for the Mission Extension of Earth Science Operating Missions, 2013, 2015
- Gravelly Landscape Collaborative, 2010-
- Associate Editor of remote sensing for *Journal of Forestry*, 2011-2014
- GOF-C-GOLD Biomass Working Group participant, 2009-
- Graduate advisor:
  - Gabriel Bellante, M.S., Montana State University, 2009-2011
  - Aiden Johnson, M.S., Montana State University, 2014
- Graduate committees served on:
  - Shannon Savage, PhD, Land Resources and Environmental Sciences, MSU, 2009
  - William Kleindl, PhD, Systems Ecology, University of Montana, 2011-2014
  - Olga Vsevolozhskaya, PhD, Mathematics, MSU, 2013
  - Arjun Pandey, PhD, Land Resources and Environmental Sciences, MSU, 2013
  - Danika Holmes, M.S., Earth Sciences, MSU, 2014-
  - Cooper McCann, PhD, Physics, MSU, 2014-
- Graduate professional papers advised:
  - Erin Frolli, 2014
- Undergraduate work-study students supervised in lab:
  - Logan Jackson, Montana State University, 2014-2015
  - Michael Endicott, Rutgers University, 2014
- Proposal reviewer for National Science Foundation, Geography and Spatial Sciences Program
- Proposal reviewer for Natural Sciences and Engineering Research Council of Canada
- Proposal reviewer for Montana Space Grant Consortium and Montana NASA EPSCoR, Research Initiation Program, 2013
- Proposal reviewer for NASA Terrestrial Ecology Program
- Manuscript reviewer for *Nature Climate Change*, *Remote Sensing of Environment*, *Landscape Ecology*, *Biogeosciences*, *Canadian Journal of Remote Sensing*, *Environmental Management*, *Journal of Environmental Management*, *Photogrammetric Engineering and Remote Sensing*, *Journal of Forestry*, *Urban Ecosystems*, *Journal of Applied Remote Sensing*, and *Applied Geography*, *Carbon Management*, *Journal of Photogrammetry and Remote Sensing*, *Forests*, *Geographical Bulletin*, *Climatic Change*
- Member, Graduate Curriculum Committee, Department of LRES, 2010-
- Member, LRES On-line MS Committee, 2010-
- Member, LRES Mentoring Committee, 2014-
- Member, Department Head Search Committee, Department of Ecology, Montana State University. 2003
- Member, GIS Analyst Search Committee. Landscape Biodiversity Lab, Department of Ecology, Montana State University. 2002
- Moderator/Judge, Montana Space Grant Consortium Student Research Symposium, Montana State University. 2011, 2013
- Co-coordinator, Montana State University Conference: "Remote Sensing at MSU". 12/12/03
- Volunteer, Remote Sensing Coordinator, Montana High School Science Olympiad. 2002-2003

## **PROFESSIONAL SOCIETIES**

- Member, Ecological Society of America
- Member, International Association of Landscape Ecology
- Member, American Geophysical Union
- Member, North American Carbon Program, Core Project