

CHRISTOPHER A. HIEMSTRA

Cooperative Institute for
Research in the Atmosphere (CIRA)
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EDUCATION

Ph.D., Botany, University of Wyoming, August 2003.

M.S., Botany, University of Wyoming, May 1999.

B.S., Environmental Science, *summa cum laude*, Creighton University, May 1996.

SKILLS

Field Work

snow depth and density measurements, ecological field techniques, plant and soil identification, land cover and vegetation mapping, study design and analyses, meteorological data collection, GPS surveying, ground-based LiDAR surveys

Models

Micromet, SnowModel, SnowTran-3D, Regional Atmospheric Modeling System (RAMS), GEMRAMS, LAPS, Community Land Model (CLM)

Remote Sensing

Aerial photography (color and black and white), Landsat TM/ETM+, MODIS, LiDAR (aerial and ground), Quickbird, AVHRR, and land cover datasets (e.g., NLCD 1992 and 2001, GIMMS)

Programming Experience

AML, HTML, FORTRAN77, FORTRAN90

Software

GIS (ArcGIS, ArcView, Arc/INFO), Trimble Pathfinder Office and Geomatics Office, ERDAS Imagine, Minitab, GrADS, SigmaPlot, Microsoft Office

RESEARCH INTERESTS

Landscape and ecosystem ecologist, primary research interests involve the study of atmosphere, snow, and vegetation interactions and how variations in land cover influence weather, climate, and ecosystem structure and function. I employ computer models, snow and vegetation field measurements, remote sensing, global positioning system (GPS), geographical information systems (GIS), study designs, and statistical techniques to understand the dynamic aspects of natural systems.

RESEARCH EXPERIENCE

Research Scientist-III, Colorado State University, 7/09–present

Research Scientist-II, Colorado State University, 3/07–7/09.

Research Scientist-I, Colorado State University, 7/06–3/07.

Use computer models (e.g., SnowModel, SnowTran-3D) to simulate snow accumulation, melt, and land-surface-atmosphere interactions. Perform field snow and vegetation measurements and gather remote sensing observations needed to assess, constrain, and improve snow-atmosphere model simulations. Investigate snow-related physical and ecosystem processes in sagebrush, grassland, forest, alpine, and Arctic ecosystems. Continued collaboration with snow-related working groups (e.g., CLPX, CLPX2, FLOSS). Dr. Glen E. Liston, Cooperative Institute for Research in the Atmosphere.

Research Scientist-I, Colorado State University, 12/04–7/06.

Used a coupled plant-land-atmosphere model, GEMRAMS, to study atmospheric and ecosystem ramifications of historic and predicted land-cover and land-use change. Additionally, investigated aspects of snow in sagebrush and grassland ecosystems. Involved with snow-related working groups (e.g., CLPX, FLOSS). Dr. Roger A. Pielke Sr., Department of Atmospheric Science.

Research Associate-III, Colorado State University, 9/02–12/04.

Primary responsibility involved using GLOBE (<http://www.globe.gov>) and other data to address relationships among snow, soil, vegetation, and atmospheric processes. Also participated in the Cold Lands Processes Working Group (<http://www.nohrsc.nws.gov/~cline/clp.html>) and the FLOSS Working Group (<http://www.atd.ucar.edu/rtf/projects/FLOSS/>). Dr. Roger A. Pielke Sr., Department of Atmospheric Science.

Doctoral Research, University of Wyoming, 5/99–9/02.

Field measurements of snow, vegetation, soils, decomposition, and gopher activity at Libby Flats, Wyoming, were performed. Snow redistribution and land surface models were adapted and employed to simulate snow accumulation and ablation. Analyses sought relationships among physical characteristics in the landscape and measured ecosystem properties: precipitation, vegetation, decomposition, and gopher soil disturbance. Dr. William A. Reiners, Department of Botany.

Master's Research, University of Wyoming, 6/96–5/99.

Snow surveys on Libby Flats, Wyoming, were completed and observations were used to validate a blowing snow model. Other projects included analysis of landscape, geology, and vegetation at Wind Cave National Park; treeline dendrochronological vegetation analyses in the Medicine Bow National Forest,

Wyoming; and mapping exotic plants at Warren Air Force Base, Cheyenne, Wyoming. Dr. William A. Reiners, Department of Botany.

Undergraduate Research, Creighton University, 5/95-5/96.

Participated in multispectral measurements of aquatic mesocosms, lakes, and reservoirs; laboratory analyses of water constituents (algal pigments, suspended sediments, and other optically significant parameters); and computer analysis and management of data. Dr. John F. Schalles, Department of Biology.

TEACHING EXPERIENCE

Biology Lecturer, General Biology, University of Wyoming, 1/01-3/01.

Lectured a ½-semester portion of general biology (BIOL 2020) for majors (64 students). Topics covered included earth origins, origins of life, evolution, and the diversity of life (bacteria and archaeobacteria, protists, fungi, and plants). Responsibilities included developing and giving 19 lectures during the semester as well as developing two 50-question examinations.

Teaching Assistant, General Biology, University of Wyoming, 1/00-5/00.

Two sections of general biology laboratories (38 students total). Responsibilities included short introductory lectures, demonstrations, quizzes, correcting lab reports, assisting students, and proctoring examinations.

Resource Assistant, Student Conservation Assoc., El Malpais Natl Mon., 5/94-8/94.

Responsibilities involved designing and leading interpretive tours of El Malpais features, staffing the visitor center, and assisting visitors.

RESEARCH GRANTS

- Co-I, 2009. "Snowpack Mission for Regional Climate Modeling and Water Resource Forecasting." Submitted to NASA's Research Opportunities in Space and Earth Sciences on 6 November 2009. Principal Investigator: Simon Yueh, Ph.D.
- Co-I, 2009. "Observing and Simulating Earth System Response to Continental-Scale Ecosystem Disturbance." Submitted to NASA's IDS on 9 September 2009. Principal Investigator: Glen E. Liston, Ph.D.
- Co-I, 2006. Proposal for NASA Earth System Science Research titled "Improving the representation of global snow cover, snow water equivalent, and snow albedo in climate models by applying EOS Terra and Aqua Observations." Funded. Principal Investigator: Glen E. Liston, Ph.D.
- Co-I, 2006. Proposal for NASA, Terrestrial Hydrology Program titled "Defining subgrid snow distributions within NASA remote-sensing products and models." Funded. Principal Investigator: Glen E. Liston, Ph.D.

- Co-I, 2006. NSF-IPY: Collaborative Research Proposal titled “A prototype network for measuring Arctic winter precipitation and snow cover (Snow-Net).” Funded. Principal Investigators: Matthew Sturm, Ph.D. and Glen Liston, Ph.D.
- Co-I, 2006. NSF Collaborative Proposal titled “The white Arctic: A snow impacts synthesis for the terrestrial Arctic.” Funded. Principal Investigators: Matthew Sturm, Ph.D. and Glen Liston, Ph.D.
- Co-I, 2004. Unsolicited Proposal for Department of Interior, United States Geological Survey, titled “Modeling assessment of LULC change influences on land surface hydrology, regional weather, and climate variability.” Funded. Principal Investigator: Roger A. Pielke Sr., Ph.D.
- Co-I, 2003. Proposal for NASA, Interdisciplinary Science in the NASA Earth Science Enterprise, titled “Parameterizing sub-grid snow-vegetation-atmosphere interactions in earth system models.” Funded. Principal Investigator: Glen E. Liston, Ph.D.
- PI, 2000. NASA Earth System Science Fellowship, titled "Effects of wind on snowpack distribution and subsequent meltwater routing on ecosystem properties at treeline in the Medicine Bow Mountains of Wyoming." Funded.

ACADEMIC AFFILIATION

Joint Appointment, Department of Forest, Rangeland, and Watershed Stewardship,
Colorado State University, October 2008 -present
Member, School of Global Environmental Sustainability, Colorado State University,
November 2008-present

PEER-REVIEWED PUBLICATIONS

- Cline, D., K. Elder, and **C.A. Hiemstra**. 2010. Using LiDAR for snow measurements. *In preparation.*
- Hiemstra, C.A., G.E. Liston, and J.E. Strack. 2010. Spatial and temporal characteristics of snow-shrub interactions in sagebrush steppe. In preparation for *Landscape Ecology*, to be submitted 2010.
- Hiemstra, C.A., and G.E. Liston, 2010. Simulating snow-vegetation interactions in shrubland and grassland landscapes. In preparation for submission 2010.
- Liston, G. E., and **C.A. Hiemstra**, 2010. Representing grass and shrub-snow-atmosphere interactions in climate-system models. To be submitted to *Journal of Climate* in early 2010.
- Mernild, S.H., G.E. Liston, **C.A. Hiemstra**, S. Martin, J.H. Christensen, and B. Hasholt. 2009. Surface mass-balance and runoff modeling using HIRHAM4 RCM at Kangerlussuaq (Søndre Strømfjord), West Greenland, 1950–2080. Submitted to *Journal of Hydrometeorology*.
- Mernild, S.H., G.E. Liston, and **C.A. Hiemstra**. 2009. Greenland Ice Sheet melt extent and surface mass-balance modeling in a 131-year perspective, 1950–2080. *In press, Journal of Hydrometeorology.*

- Mernild, S.H., G.E. Liston, **C.A. Hiemstra**, K. Steffen, E. Hanna, and J.H. Christensen. 2009. Greenland Ice Sheet surface mass-balance modelling and freshwater flux for 2007, and in a 1995-2007 perspective. *Hydrological Processes*. **23**:2470-2484.
- Mernild, S.H., G.E. Liston, **C.A. Hiemstra**, and K. Steffen. 2009. Record 2007 Greenland Ice Sheet surface melt-extent and runoff. *EOS, Transactions, American Geophysical Union*. **9**:13-14.
- Mernild, S.H., G.E. Liston, **C.A. Hiemstra**, and K. Steffen. 2008. Surface Melt Area and Water Balance Modeling on the Greenland Ice Sheet 1995-2005. *Journal of Hydrometeorology*. **9**:1191-1211.
- Liston, G. E., and **C. A. Hiemstra**, 2008. A simple data assimilation system for complex snow distributions (SnowAssim). *Journal of Hydrometeorology*. **9**:989-1004.
- Liston, G. E., **C. A. Hiemstra**, K. Elder, and D. W. Cline, 2008: Meso-cell study area (MSA) snow distributions for the Cold Land Processes Experiment (CLPX). *Journal of Hydrometeorology*. **9**:957-976.
- Liston, G. E., D. L. Birkenheuer, **C. A. Hiemstra**, D. W. Cline, and K. Elder, 2008: NASA Cold Land Processes Experiment (CLPX): Atmospheric analyses datasets. *Journal of Hydrometeorology*. **9**:952-956
- Malanson G.P., D.R. Butler, D.B. Fagre, S.J. Walsh, D.F. Tomback, L.D. Daniels, L.M. Resler, W.K. Smith, D.J. Weiss, D.L. Peterson, A.G. Bunn, **C.A. Hiemstra**, D. Liptzin, P.S. Bourgeron, Z. Shen, and C.I. Millar. 2007. Alpine treeline of western North America: Linking organism-to-landscape dynamics. *Physical Geography*. **28**:378-396.
- Pielke, R.A. Sr., J. Adegoke, A. Beltran-Przekurat, **C.A. Hiemstra**, J. Lin, U.S. Nair, D. Niyogi, and T.E. Nobis, 2007. An overview of regional land use and land cover impacts on rainfall. *Tellus*. **59B**:587-601.
- Liston, G.E., R.B. Haehnel, M. Sturm, **C.A. Hiemstra**, S. Berezovskaya, and R.D. Tabler. 2007. Simulating complex snow distributions in windy environments using SnowTran-3D. *Journal of Glaciology*. **53**:241-256
- Hiemstra, C.A., G.E. Liston, R.A. Pielke Sr., D.L. Birkenheuer, and S.C. Albers. 2006. Comparing Local Analysis and Prediction System (LAPS) assimilations with independent observations. *Weather and Forecasting*. **21**:1024-1040.
- Hiemstra, C.A., G.E. Liston, and W.A. Reiners. 2006. Observing, modelling, and validating snow redistribution by wind in a Wyoming upper treeline landscape. *Ecological Modelling*. **197**:35-51.
- Hiemstra, C.A., G.E. Liston, and W.A. Reiners. 2002. Snow redistribution by wind and interactions with vegetation at upper treeline in the Medicine Bow Mountains, Wyoming. *Arctic, Antarctic, and Alpine Research*. **34**:262-273.

ENCYCLOPEDIA CHAPTERS

- Hiemstra, C.A. and G.E. Liston. 2009. Snow and Vegetation Interaction. Encyclopedia of Snow, Ice and Glaciers. V.P. Singh, P. Singh, U.K. Haritashya (Eds.). Springer. *Submitted.*

CONFERENCE PROCEEDINGS AND REPORTS

- Pielke, R.A. Sr., J. Adegoke, A. Beltran-Przekurat, **C.A. Hiemstra**, J. Lin, U.S. Nair, D. Niyogi, and T.E. Nobis, 2006. Impacts of regional land use and land cover on rainfall: An overview. *Hydrol. Sci. J., Climate Variability and Change – Hydrological Impacts (Proceedings of the Fifth FRIEND World Conference held at Havana, Cuba, November 2006)*, IAHS Publ. 308.
- Hiemstra, C.A., and R.A. Pielke Sr. 2004. Using GLOBE and other observations to validate meteorological models. *Proceedings of the 8th Annual GLOBE Conference.*
- Hiemstra, C.A. 2004. Snow and high elevation landscapes: relating environmental heterogeneities to cover, decomposition, and gopher activity. *Proceedings of the 16th Biennial High Altitude Revegetation Workshop*, 52-63.
- Hiemstra, C.A., W.A. Reiners, and G.E. Liston. 2002. Spatial relationships between snow and ecosystem properties in a Wyoming alpine treeline ecotone: Linking simulations and observations. *Proceedings of the 70th Annual Western Snow Conference*, 11-20.
- Hiemstra, C., and W. Fertig. 2000. The distribution of noxious weeds on F.E. Warren Air Force Base. Report prepared for the U.S. Air Force by the Wyoming Natural Diversity Database, Laramie, WY.

DISSERTATION AND THESIS

- Hiemstra, C.A. 2003. Relating snow redistribution and snowmelt patterns to ecosystem properties in an upper treeline landscape, Medicine Bow Mountains, Wyoming. Ph.D. Dissertation. Department of Botany, University of Wyoming. 180 pp.
- Hiemstra, C.A. 1999. Wind redistribution of snow at treeline in the Medicine Bow Mountains, Wyoming. M.S. Thesis. University of Wyoming. 163 pp.

INVITED PRESENTATIONS

- Hiemstra, C.A., M. Sturm, A. Gelvin, S. Berezovskaya, S. Saari, D.C. Finnegan, and G.E. Liston. 2009. High resolution Arctic snow observations: Snow-Net. *Eos Trans. AGU*, 90(52), Fall Meet. Suppl., Abstract C21E-03.
- Hiemstra, C.A., G.E. Liston, K. Elder, and M. Sturm. 2009. The persistent life of snow. *Eos Trans. AGU*, 90(52), Fall Meet. Suppl., Abstract B32A-02.
- Hiemstra, C.A. Measuring and Modeling Snow and Its Interactions with Atmospheric and Terrestrial Processes. Atmospheric Science Department Seminar, University of Wyoming. Laramie, Wyoming, February 2009.

- Hiemstra, C.A. Snow-Vegetation-Atmosphere Interactions in Treeline, Arctic and Sagebrush Environments. Environmental Science Department Seminar, Creighton University. Omaha, Nebraska, January 2008.
- Hiemstra, C.A. Snow and treeline landscapes. Treeline Workshop, West Glacier, Glacier National Park, Montana, September 2005.
- Hiemstra, C.A. Snow and high elevation landscapes: Relating environmental heterogeneities to cover, decomposition, and gopher activity. High Altitude Revegetation Workshop, 16th Biennial Workshop, Fort Collins, Colorado, March 2004.
- Hiemstra, C.A., and W.A. Reiners. Relating snow transport to ecosystem structure and function: Lessons from Libby Flats. American Geophysical Union, Fall Meeting. San Francisco, California, December 2003.
- Hiemstra, C.A. Life at treeline: Interactions among snow, wind, and vegetation. U.S. Forest Service, Centennial Visitor Center, Medicine Bow National Forest, August 23, 2002.
- Hiemstra, C.A. Life at treeline: History, vegetation, and science on Libby Flats. U.S. Forest Service, Brush Creek Visitor Center, Medicine Bow National Forest, August 18, 2001.

ABSTRACTS AND PRESENTATIONS

- Liston, G.E. and **C.A. Hiemstra**. 2009. Using High-Resolution Atmospheric and Snow Modeling Tools to Define Spatially and Temporally Variable Snow Distributions (*Invited*). *Eos Trans. AGU*, 90(52), Fall Meet. Suppl., Abstract C23D-03. *Talk*
- Liston, G.E. and **C.A. Hiemstra**. 2009. Representing Grass- and Shrub-Snow-Atmosphere Interactions in Climate System Models. *Eos Trans. AGU*, 90(52), Fall Meet. Suppl., Abstract C31B-0437. *Poster*
- Liston, G.E., **C.A. Hiemstra**, and M. Sturm. 2009. Defining Pan-Arctic terrestrial moisture budgets using high-resolution atmospheric and snow modeling tools. Proceedings of the 17th Northern Research Basins International Symposium and Workshop, September, Arctic Canada. *Talk*
- Sturm, M., G.E. Liston, **C.A. Hiemstra**, D. Kane, D. Yang, and S. Berezovskaya. IPY-SnowNet: A system for measuring arctic winter precipitation and snow cover. SCAR/IASC IPY Open Science Conference, St. Petersburg, Russia, July 2008. *Talk*
- Randin, C.F., H.C. Humphries, G.E. Liston, **C.A. Hiemstra**, N.G. Yoccoz, W.D. Bowman, T.R. Seastedt, K.N. Suding, and M.W. Williams. Spatio-temporal evolution of the alpine tundra over two decades in the Rocky Mountains: natural variability or climate change impact? MTNCLIM2008. Silverton, Colorado, June 2008. *Talk*
- Hiemstra, C.A. Snow-Vegetation-Atmosphere Interactions in Treeline, Arctic and Sagebrush Environments. Life Sciences Seminar, University of Alaska Fairbanks. Fairbanks, Alaska, April 2008. *Talk*

- Hiemstra, C.A., and G.E. Liston. Using high-resolution atmospheric and snow modeling tools to define spatially-variable snow distributions. Mountain Hydroclimate and Water Resources Workshop. Boulder, Colorado, October 2007. *Poster*
- Liston, G. E., and **C. A. Hiemstra**, 2007: Using high-resolution atmospheric and snow modeling tools to define spatially-variable snow distributions. International Symposium on Snow Science, September, Moscow, Russia. *Talk*
- Liston, G. E., **C. A. Hiemstra**, S. Berezovskaya, S. H. Mernild, and M. Sturm, 2007: Using high-resolution atmospheric and snow modeling tools to define pan-arctic spatial and temporal snow-related variations. Proceedings of the 16th Northern Research Basins International Symposium and Workshop, September, Petrozavodsk, Russia. *Talk*
- Hiemstra, C.A., and G.E. Liston. Snow Measurements and Modeling in Sagebrush Steppe. Ecological Society of America Annual Meeting. San Jose, California, August 2007. *Poster*
- Hiemstra, C.A., G.E. Liston, and J.E. Strack. Sagebrush and snow: Linking snow measurements and modeling. American Geophysical Union, Fall Meeting. San Francisco, California, December 2006. *Poster*
- G.E. Liston, **C.A. Hiemstra**, K. Elder, and D. Cline. Local- to basin-scale snow distributions for the Cold Land Processes Experiment (CLPX). American Geophysical Union, Fall Meeting. San Francisco, California, December 2006. *Talk*
- Malanson, G.P., P. Bourgeron, A. Bunn, D.R. Butler, L. Daniels, D. Fagre, **C. Hiemstra**, D. Liptzin, C.I. Millar, D.L. Peterson, L. Resler, W.K. Smith, D.F. Tomback, S.J. Walsh, and D. Weiss. 2006. Treeline dynamics and climate change. MTNCLIM 2006. Mt. Hood, Oregon, September 2006. *Talk*.
- Beltrán-Przekurat, A., R.A. Pielke Sr., J.O. Adegoke, C.L. Castro, **C. Hiemstra**, G. Leoncini, C. Marshall, T. Matsui, D. Stokowski, J. Strack, and A. Wang. On-going and new research directions in RAMS (at Roger Pielke Sr's group and friends). 6th RAMS/BRAMS/OLAM International Users Workshop. Ubatuba, Brazil, May 2006. *Talk*.
- Hiemstra, C.A., R.A. Pielke Sr., T.L. Sohl, K.A. Saylor, T.R. Loveland, and L.T. Steyaert. The influence of pre-settlement and current high plains land use and land cover on atmospheric, soils, and vegetation properties. American Geophysical Union, Fall Meeting. San Francisco, California, December 2005. *Poster*
- Hiemstra, C.A., G.E. Liston, J.E. Strack, and K. Elder. Measuring and modeling snow accumulation, movement, and ablation in Colorado shrublands. American Geophysical Union, Fall Meeting. San Francisco, California, December 2004. *Poster*
- Strack, J.E., G.E. Liston, **C.A. Hiemstra**, and R.A. Pielke Sr. Snow, shrubs, grasses, and Footprint Theory: Measuring moisture and energy fluxes in patchy landscapes. American Geophysical Union, Fall Meeting. San Francisco, California, December 2004. *Poster*

- Hiemstra, C.A., and R.A. Pielke Sr. Using GLOBE and other observations to validate meteorological models. 8th Annual GLOBE Conference. Boulder, Colorado, July 2004. *Talk*
- Hiemstra, C.A., G.E. Liston, and R.A. Pielke Sr. Comparing Local Analysis Prediction System (LAPS) diagnoses with observations. American Geophysical Union, Fall Meeting. San Francisco, California, December 2003. *Poster*
- Liston, G.E., C.A. Hiemstra, J.E. Strack, and K. Elder. Vegetation and snow cover: Spatial patterns of shrubland and grassland snow. American Geophysical Union, Fall Meeting. San Francisco, California, December 2003. *Talk*
- Hiemstra, C.A., W.A. Reiners, and G.E. Liston. Spatial relationships between snow and ecosystem properties in a Wyoming alpine treeline ecotone: Linking simulations and observation. 70th Annual Meeting of the Western Snow Conference. Granby, Colorado, May 2002. *Talk*
- Hiemstra, C.A., W.A. Reiners, and G.E. Liston. Linking physical models and ecosystem processes in a Wyoming alpine treeline ecotone: Simulation, validation, and extrapolation. U.S. International Association for Landscape Ecology Annual Meeting. Lincoln, Nebraska, April 2002. *Talk*
- Hiemstra, C.A., G.E. Liston, and W.A. Reiners. Snow redistribution and ablation in a Wyoming alpine treeline environment: Implications for understanding ecosystem processes. American Geophysical Union, Fall Meeting. San Francisco, California, December 2001. *Poster*
- Hiemstra, C.A., and W.A. Reiners. The spatial distribution of litter decomposition over the heterogeneous landscape of a Wyoming forest-alpine tundra ecotone. Ecological Society of America Annual Meeting. Madison, Wisconsin, August 2001. *Poster*
- Hiemstra, C.A., G.E. Liston, and W.A. Reiners. Wind redistribution of snow at treeline in the Medicine Bow Mountains, Wyoming. 4th International Conference on Integrating GIS and Environmental Modeling. Banff, Alberta, Canada, September 2000. *Poster*
- Hiemstra, C.A., G.E. Liston, and W.A. Reiners. Wind redistribution of snow at treeline in the Medicine Bow Mountains, Wyoming. Ecological Society of America Annual Meeting. Spokane, Washington, August 1999. *Talk*
- Hiemstra, C.A., G.E. Liston, and W.A. Reiners. Wind redistribution of snow at treeline in the Medicine Bow Mountains, Wyoming. American Geophysical Union, Fall Meeting. San Francisco, California, December 1998. *Poster*
- Hiemstra, C.A., S.M. Ogle, C.L. Fastie, and W.A. Reiners. Subalpine ribbon forest morphology, tree growth, and spatial patterns in the Medicine Bow Mountains, southeast Wyoming. Ecological Society of America Annual Meeting. Baltimore, Maryland, August 1998. *Talk*
- Hiemstra, C.A., G.E. Liston, and W.A. Reiners. Interaction between topography and vegetation in the distribution of wind-blown snow at treeline in the Medicine Bow Mountains, Wyoming. U.S. International Association for Landscape Ecology Annual Conference. East Lansing, Michigan, March 1998. *Poster*

Hiemstra, C.A., S.M. Ogle, and W.A. Reiners. Terrain analysis and vegetation distribution at Wind Cave National Park, South Dakota. Ecological Society of America Annual Meeting. Albuquerque, New Mexico, August 1997. *Talk*

Hiemstra, C., A. Kroenke, D. Pascual, A. Sheil, and J. Schalles. Spectral reflectance of five Iowa lakes with moderate to high algal productivity. Great Plains Limnological Conference. Chadron, Nebraska, September 1995. *Talk*

STUDENT THESES AND DISSERTATIONS ASSISTED

M.S.

Anne Sawyer, Colorado State University, 2007
Andy Baltensperger, Colorado State University, 2008
Molly Tedesche, Colorado State University, in progress

Ph.D.

John E. Strack, Colorado State University, 2006
Jeff Deems, Colorado State University, 2007
Eric A. Sproles, Oregon State, in progress

ACADEMIC SERVICE

- Web Site Development, Department of Botany & Biology Program, University of Wyoming (2001–2002)
- Graduate Student Representative for Ecosystem Ecologist Search Committee, University of Wyoming (2001)
- Graduate Student Representative to Botany Faculty, University of Wyoming (1999–2000)

INTERVIEWS AND PRESS

- O'Dowd, P. 2008. The impacts of early snowmelt. *Open Spaces*, Wyoming Public Radio. 25 January.
- O'Dowd, P. 2008. West's main water source getting drier. *Marketplace*, National Public Radio. 30 April.

REVIEWER

- *Arctic*
- *Arctic, Antarctic, and Alpine Research*
- *BioScience*
- *Ecology and Society*
- *Ecohydrology*
- *Geographical Analysis*
- *International Journal of Remote Sensing*
- *Journal of Geophysical Research-Atmospheres*
- *Landscape Ecology*
- *NASA Terrestrial Hydrology Program*

- *National Science Foundation*
- *U.S. Civilian Research and Development Foundation (CRDF)*

PROFESSIONAL AFFILIATIONS

- American Geophysical Union (1998–present)
- Ecological Society of America (1996–present)

HONORS

- J.E. Church Memorial Award for Best Student Presentation (Western Snow Conference, 2002)
- NASA-Mich. State Univ. Professional Enhancement Award (International Association for Landscape Ecology, 2002)
- Edwin Payson Memorial Scholarship, University of Wyoming, 2001
- NASA Earth System Science Fellowship, University of Wyoming, 2000–2002
- Phi Kappa Phi, University of Wyoming, elected 1998
- *summa cum laude*, Creighton University, 1996
- Superior Senior Seminar Presentation, Creighton University, 1996
- Environmental Science Program Honors, Creighton University, 1996
- Creighton Superior Academic Achievement Award, Creighton University, 1996
- Omicron Delta Kappa, Creighton University, elected 1995
- NASA Summer Research Fellowship, Creighton University, 1995

REFERENCES

- Glen E. Liston, Ph.D. liston@cira.colostate.edu
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