

CURRICULUM VITAE

JOHN SCOTT GREENE

EDUCATION

Doctorate in Geography, University of Delaware, 1994

Emphasis on applied climatology, environmental impacts of climate and climate change, and remote sensing and surface analysis of precipitation

Dissertation title: Analysis of Precipitation Variability and Satellite-Derived Rainfall Using a Spatial Synoptic Classification.

Master of Arts in Geography, University of Hawaii, Manoa, 1990

Emphasis on the climate of the Pacific and statistical techniques in climatology.

Thesis title: Raingage Network Selection in Queensland, Australia: Applications to Satellite Rainfall Estimation Models.

Bachelor of Arts, double major in Applied Mathematics and Geography, University of California, Berkeley, 1987

EXPERIENCE

August 1997 - June 2001, Assistant Professor, July 2002 – June 2007, Associate Professor, July 2007-Present, Professor, July 2015-Present, Associate Chair, Department of Geography and Environmental Sustainability, University of Oklahoma

July 2003 - Present, Co-Director, Oklahoma Wind Power Initiative

July 2001-June 2012, Director, Environmental Verification and Analysis Center

My current research includes a variety of statistical and applied climatological research focused on the broad theme of analysis of climatic and environmental hazards. Specific examples include examination of the impacts of extreme climatic events (e.g., drought, heat waves) upon agriculture and human health (projects funded by the State of Oklahoma, NOAA, and the EPA); the development of statistical methods to study variability in precipitation patterns across Oklahoma and the tropical Pacific (projects funded by the DoD and NOAA); and research and outreach associated with issues of renewable energy and sustainability in Oklahoma and the Southern Great Plains (projects funded by the State of Oklahoma, US Department of Energy, and the EPA).

Much of my efforts over the past several years has been as director of the Environmental Verification and Analysis Center (EVAC), and the Oklahoma Wind Power Initiative (OWPI). I have been responsible for overseeing activities of the centers, interacting with a variety of local and state officials, and for coordinating outreach and educational activities. For any given year, we have supported in the past anywhere from approximately 5-20 local researchers, faculty, support staff, and students, and another dozen researchers through subcontracts.

September 1993 - August 1995: Research Associate, Center for Climatic Research, University of Delaware

I managed a range of EPA-funded projects related to climate, climate change, and human health. I supervised approximately 10 researchers, student assistants, and clerical staff, and drafted reports and grant proposals. I also maintained the Synoptic Climatology Lab and performed a variety of computer programming.

PROFESSIONAL AFFILIATIONS:

Association of American Geographers

Climatology, Education, and Energy and Environment Specialty Groups
Mentor for the Climate Mentors program of the Climate Speciality Group

International Society of Biometeorology

(In the past I have served as Executive Secretary, Editor of *Biometeorology Bulletin*, moderator of Biometnet listserve, and writer of ISB News section of the International Journal of Biometeorology [IJB], and currently serve on Editorial Advisory Board of the IJB)

National Council for Geographic Education

President, Board of Directors, Oklahoma Alliance for Geographic Education

Affiliate, QUEST (Quantifying Uncertainty in Ecosystem Studies)

Affiliate, Synoptic Climate Lab, School of Medicine, University of Miami

Adjunct, Department of Geography, Oklahoma State University

Affiliate, Southern Plains Impact Planning Program, University of Oklahoma.

Volunteer for Climate Voices

HONORS AND AWARDS

Tromp Scientific Award (This award is the highest honor of the International Society of Biometeorology, and is given to one individual every three years for outstanding research in biometeorology)

University of Oklahoma Teaching Scholars Initiative Award (awarded by the university for outstanding teaching)

University of Oklahoma Outstanding Research Award

University of Oklahoma presidential international travel award

NASA Global Change Fellowship

Alpha Phi Omega 20th century leadership award

Oklahoma Journal Record “Innovator of the Year – On the Brink” Award

For 2012 and 2013, I was also a finalist for the Henry Bellman Sustainability award

Oklahoma Wind Power Initiative (the program for which I was Director) has received the following awards:

Excellence in academic achievement award from the American Wind Energy Institute

The Wind Working Group of the year award “in recognition of continued leadership in outreach to Oklahoma wind stakeholders” from the US Department of Energy.”

The EDGE Grant business plan won the OG&E Positive Energy Award, and placed second in the Oklahoma state business plan competition

COURSES TAUGHT

Analytic Methods in Geography

Climate, History, and Society

Environmental Change (co-taught)

Freshman Mentoring

Geotechniques

Global Climate Change

Global and Regional Climatology

Introduction to Interdisciplinary Perspectives on the Environment (co-taught)

Introduction to Physical Geography

Principles of Meteorology

Quantitative Methods in Geography (aka Advanced Geographical Statistics)

Quaternary Environments

Social and Economic Impacts of Climate Change

Research Methods

The Climatic Challenge

Seminar in Environmental and Resource Geography

Seminar in Economic Geography

Sustainability and Society in the Southern Plains (co-taught; OU Dream Course)

Proseminar in Geography

Graduate Student Committees

I have been chair of three Ph.D. and eleven MA committees. In addition, I have served on over 35 other graduate student committees from Geography and other disciplines, including Meteorology, Sociology, Electrical Engineering, Political Science, Zoology, and Interdisciplinary Studies. I am also an adjunct professor in the Department of Geography at Oklahoma State University and have served on committees in that department as well.

Graduate Students Mentored

Haya Al-Husainan An analysis of the Wind and Solar Resources for the state of Kuwait, Ph.D. 2012

Haya Al-Husainan Wind resource analysis for the state of Kuwait, MA 2010

Daniel Berkowitz Examination of spatial biases in radar rainfall estimation for storms having potential to produce flash floods, MA, 2001

Matthew Biddle Warning Reception, Response and Risk Behavior in the 3 May 1999 Oklahoma City long-track violent Tornado, Ph.D. 2007

Stephanie Buway Renewable Energy Education and Awareness in Oklahoma, MA 2007

Becca Castleberry An analysis of the socioeconomic impact of wind farms in Western Oklahoma, MA 2017

Matthew Chatelain Analysis of Past and future trends of wind velocities and impacts of wind power resources across US high plains, MA 2011

Mark Geisken Economic impact of wind farm development in Oklahoma, MA, 2007

Danielle Girdner The Development and application of a land use diversity index for Oklahoma City, OK, MA 2014

Gary Heathman Estimating root zone soil water content using limited soils information and surface soil moisture data Assimilation, Ph.D. 2001

Stephanie Hoekstra How K-12 school district officials made decisions during 2011 National Weather Service Tornado Warnings, MA 2012

Amy Nichols How university administrators made decisions during National Weather Service Tornado Warnings in the Spring of 2011, MA 2012

Clare Reynolds Oklahomans' perception of Wind Energy, MA 2012

Jay Wimhurt Future projections the variability of the low-level jet and its implications for wind energy production in Oklahoma, MA 2019

PUBLICATIONS (only refereed publications listed, Through 09/2018: 59 total. In addition, I have written over 40 reports to federal granting agencies).

Castleberry, B.C., Gleidt, T., and J.S. Greene, 2016: Assessing Drivers and Barriers of Energy-Saving Measures in Oklahoma's Public Schools, *Energy Policy*, pp. 216-228.

- Castleberry, B., and J. S. Greene, 2018: Wind Power and Real Estate Prices in Oklahoma, *International Journal of Housing Markets and Analysis*, in press.
- Castleberry, B., and J. S. Greene, 2017: Impacts of wind power development on Oklahoma's public schools *J. Energ Sustain Soc*, 7: 34.
- Champion, S., J.S. Greene, S.E. Postawko, and M.L. Morrissey, 2014: Renewable Energy Education and Awareness in Oklahoma, *Energy Education Science and Technology Part B: Social and Educational Studies* Vol. 6(1): 55-68.
- Comer, D.E., and J.S. Greene, 2015 The Development and Application of a Land Use Diversity Index for Oklahoma City, OK, *Applied Geography*, 60:46-57.
- Cook, W. and J. Greene, 2018: Gridded Historical Sea-level Rainfall for the Tropical Pacific. Submitted to *J. Atmos. Oceanic Technol.* in press.
- Dong, J., Liu, J., Zhang, G., Basara, J., Greene, J.S., and Xiao, X., 2012: Climate change affecting temperature and aridity zones: A case study in Eastern Inner Mongolia, China from 1960-2008, *Theoretical and Applied Climatology*, 113 (3:4): 561-572.
- Greene, J.S., and M. Geisken, 2013: Socioeconomic Impacts of A Wind Farm Development: A Case Study of Weatherford, Oklahoma, *Energy, Sustainability, and Society*, 3(2):1-9.
- Greene, J.S., and Morrissey, M.L., 2013: Estimated Pollution Reduction from Wind Farms in Oklahoma and Associated Health Implications, *Journal of Renewable Energy*, Article ID 924920, 7 pages.
- Greene, J.S., M. Chatelain, Morrissey, M.L., and S. Stadler, 2012: Estimated Changes in Wind Speed and Wind Power Density over the Western High Plains, 1971-2000, *Theoretical and Applied Climatology*, 109:507-518.
- Greene, J.S., M. Chatelain, Morrissey, M.L. and S. Stadler, 2012: Projected Future Wind Speed and Wind Power Density Trends over the Western U.S. High Plains, *Atmospheric and Climate Sciences*, 2, 32-40.
- Greene, J.S., Kalkstein, L.S., K. R. Kim, J-Y. Choi, and D. G. Lee, 2016: The Application of the European Heat Wave of 2003 to Korean Cities to Analyze Impacts on Heat-Related Mortality, *International Journal of Biometeorology*, 60(2):231-243.
- Greene, J.S., and M.L. Morrissey, 2014, Socioeconomic impacts of wind farm development in Oklahoma, book chapter, *Wind Resources and Future Energy Security: Environmental, Social and Economic Issues*, Muyiwa S. Adaramola, ed, Apple Academic Press.
- Greene, J.S., Kalkstein, L.S., Mills, D., and Samenow, J., 2011: An examination of climate change on extreme heat events and climate/mortality relationships in large US cities, *Journal of Weather, Climate, and Society*, 3, 281-292.

- Greene, J.S., and M.L. Morrissey, 2011: Advanced Wind Resource Characterization and Stationarity Analysis for Improved Wind Farm Siting in *Wind Farm: Technical Regulations, Potential Estimation and Siting Assessment*, Suvire, G.O., ed.
- Greene, J.S., M.L. Morrissey, and S. Johnson, 2010: Wind Climatology, Climate Change, and Wind energy, *Geography Compass*, 4/11, 1592-1605.
- Greene, J.S., K. McNabb, R. Zwilling, and M. Morrissey, and S. Stadler, 2009: Analysis of Vertical Wind Shear in the Southern Great Plains and Potential Impacts on Estimation of Wind Energy Production, *International Journal of Global Energy Issues*, 23(1), 191-211.
- Greene, JS, M Klatt M Morrissey, and S Postawko, 2008: The Comprehensive Pacific Rainfall Database: An enhanced tool for research and education, *Journal of Atmospheric and Oceanic Technology*, 25(1), 71-82.
- Greene, JS, and E Maxwell, 2007: Climatic Impacts on Winter Wheat in Oklahoma and Potential Applications to Climatic Prediction, *International Journal of Biometeorology*, 52: 117-126.
- Greene, JS, B Paris, and M Morrissey, 2007, Analysis of Historical Changes in Extreme Precipitation Events in the Tropical Pacific, *Climate Research*, 34, 1-14.
- Greene, J.S., 2005 Biometeorology Bulletin, *International Journal of Biometeorology*, 50(1).
- Greene, J.S., 2005 (Contributing author) to *Climate Change Futures: Health, Ecological and Economic Dimensions*, published by Swiss Re and the United Nations Development Programme, edited by Paul Epstein.
- Greene, J.S., W.E. Cook, D. Knapp, M.L. Morrissey, K.D. Sterling, 2003: Determining the Accuracy and Limits of Predictability of Numerical Weather Prediction for Regional Tactical Military Operations, *Army Technical Report*.
- Greene, J.S., W.E. Cook, D. Knapp, and P. Haines, 2002: An Examination of the Uncertainty in Interpolated Winds and their Effect on the Validation and Intercomparison of Forecast Models, *Journal of Atmospheric and Oceanic Technology*, 19 (3): 397-401.
- Greene, J.S., and M.L. Morrissey, 2000: Validation and Uncertainty Analysis of Satellite Rainfall Algorithms, *The Professional Geographer*, 52 (2): 247-258.
- Greene, J.S., L.S. Kalkstein, H. Ye, and K. Smoyer, 1999: Relationships between Synoptic Climatology and Atmospheric Pollution at 4 US Cities, *Theoretical and Applied Climatology*, 62, 163-174.

- Greene, J.S., M.D. Klatt, W.E. Cook, and H.J. Johnson, 1999: Weather Modification on the Great Plains”(pp. 37-50), in *The Ogallala Aquifer, Steps to Sustainability*, Lori Triplett, ed., Great Plains Foundation, Overland Park, KS.
- Greene, J.S., and M.L. Morrissey, 1998: Evaluation and Validation of Simulated and Observed Climate Data, in *Climate Prediction for Agricultural and Resource Management*, L. Leslie and R. Munro, eds., Australian Academy of Sciences, Canberra.
- Greene, J.S., M.L. Morrissey, and R. Ferraro, 1997: Verification of a Scattering-Based Rainfall Algorithm over the Open Ocean, *Theoretical and Applied Climatology*, 56, 33 -44.
- Greene, J.S., and L.S. Kalkstein, 1996: Quantitative Analysis of Summer Air Masses in the Eastern United States and an Application to Human Mortality, *Climate Research*, 7:43-53.
- Greene, J.S., 1996: Analysis of Summertime Precipitation Intensity in the Eastern United States, *Physical Geography*, 17;401-418.
- Greene, J.S., and W.J. Reitveld, 2017, Dr. Solco Tromp and the Tromp Award, *International Journal of Biometeorology*, 61(1),19-22.
- Hayhoe, K.A., L.S. Kalkstein, S. Sheridan, and J.S. Greene, 2010: Climate change, heat waves, and health implications for Chicago” *Journal of Great Lakes Research*, 36, Supplement 2, 2010, 65-73.
- Hayhoe, K.A, and D Wuebbles, lead authors (JS Greene one of the contributing Authors, 2008: CLIMATE CHANGE AND CHICAGO: PROJECTIONS AND POTENTIAL IMPACTS, CITY OF CHICAGO
- Kalkstein, L. S., Greene, J.S., Mills, D., and Samenow, J. 2011: An evaluation of the progress in reducing heat-related human mortality in major U.S. cities, *Natural Hazards*, 1:113-119.
- Kalkstein, L.S., J.S. Greene, D. M. Mills, A. D. Perrin, 2008: Analog European Heatwaves for US cities to Analyze Impacts on Heat-Related Mortality, *Bulletin of the American Meteorological Society*,89(1):1-11.
- Kalkstein, L.S., K.E. Smoyer, J.S. Greene, H. Ye, S. Chang, and B.D. Barthel, 2001: The Impacts of Weather and Pollution on Human Mortality, *Publications in Climatology*.
- Kalkstein, L.S., and J.S. Greene, 1997: Evaluation of Climate/Mortality Relationships in U.S. Cities and Possible Impacts of a Climate Change, *Environmental Health Perspectives*, 105, 84-93.

- Kalkstein, L.S., C.D. Barthel, M.C. Nichols, and J.S. Greene, 1996: A New Spatial Synoptic Classification: Application to Air Mass Analysis, *International Journal of Climatology*, 16:983-1004.
- Kalkstein, L.S., P.J. Jamason, J.S. Greene, J. Libby, and L. Robinson, 1996: The Philadelphia Hot Weather Health Watch/Warning System: Development and Application, Summer, 1995, *Bulletin of the American Meteorological Society*, 77:1519 – 1528.
- Morrissey, M.L., HJ Diamond; M.J. McPhaden; H.P. Freitag; J. S. Greene, 2012: An Investigation of the Consistency of TAO Buoy-mounted Capacitance Rain Gauges along the Equatorial Tropical Pacific, *Journal of Oceanic and Atmospheric Technology*, 29(6):834-845
- Morrissey, M.L., and J.S. Greene, 2012: Tractable Analytic Expressions for the Wind Speed Probability Density Functions using Expansions of Orthogonal Polynomials, *Journal of Applied Meteorology and Climatology*, 51(7)1310-1320.
- Morrissey, M.L., Albers, A., J.S. Greene, and S.E Postawko, 2010: An Isofactorial Change-of-Scale Model for the Wind Speed Probability Density Function, *Journal of Atmospheric and Oceanic Technology*, 27(2): 257-273.
- Morrissey, M.L., W.E. Cook, J.S. Greene, 2010: An Improved Method for Estimating the Wind Power Density Function, *Journal of Atmospheric and Oceanic Technology*, 27(7): 1153-1164.
- Morrissey, M.L., and J.S. Greene, 2009: A theoretical framework for the sampling error variance for three-dimensional climate averages of ICOADS monthly ship data, *Theoretical and Applied Climatology*: 96(3), 235-248.
- Morrissey, M.L., and J.S. Greene, 2007: Ground validation for the Global Precipitation Climatology Project”p. 381-392 in *Measuring Precipitation from Space, EURAINSAT and the Future*, V. Levizzani, P. Bauer, T. J. Turk, eds, Springer Science, New York
- Morrissey, M.L., and J. S. Greene, 1998: Using the Oklahoma Mesonet to Develop and Test a Sampling Error Statistic for Meteorological Time Series”, *Journal of Geophysical Research*, 103, D8: 8979-8984.
- Morrissey, M.L., and J.S. Greene, 1998: Uncertainty Analysis of Satellite Rainfall Algorithms over the Tropical Pacific, *Journal of Geophysical Research*, 103: 19569-19576.
- Morrissey, M.L., J.A. Maliekal, J.S. Greene, and J. Wang, 1995: The Uncertainty of Simple Spatial Averages using Rain Gauge Networks, *Water Resources Research*, 31: 2011-2017.

- Morrissey, M.L., and J.S. Greene, 1993: Comparison of Two Satellite-Based Rainfall Algorithms Using Pacific Atoll Rainage Data, *Journal of Applied Meteorology*, 32: 411-425.
- Nandintsetseg, B. J.S. Greene and C.E. Goulden, 2007: Trends in extreme daily precipitation and temperature in the Lake Hövsgöl basin area, Mongolia, *International Journal of Climatology*, 27, 341-347.
- Patz, J., K. Strezepek, S. Lele, M. Hedden, J.S. Greene, S.I. Hay, B. Noden, L. S. Kalkstein, and J.Beier, 1998: Predicting Key Malaria Transmission Factors, Biting and Entomologic Inoculation Rates Using Modeled Soil Moisture in Kenya, *Tropical Medicine and International Health*. 3: 818-827.
- Sheridan, S; Kalkstein, L; Kalkstein, A; Greene, S, 2011: Heat-related Mortality and Heat Watch-warning Systems in the United States: Recent Developments *Epidemiology* 22 (1).
- Smoyer, K. E., L.S. Kalkstein, J.S. Greene, and H. Ye, 2001: The Impacts of Weather and Pollution on Human Mortality in Birmingham, Alabama and Philadelphia, Pennsylvania, *International Journal of Climatology*, 20(8): 881-897.
- Stadler, S., J. Dryden, and J. S. Greene, 2015: Climate Change Impacts of Oklahoma Wind Resources: Potential Energy Output Changes, *Resources*.
- Wimhurst, J.J and J.S. Greene, 2018: Update Analysis of Gauge-Based Sea Level Precipitation Patterns over the Equatorial Pacific Ocean, submitted to *Climate Research*
- Wuebbles, D., and 14 coauthors, 2008: *Climate Change and Chicago: Projections and Potential Impacts, An Assessment*, Publisher: City of Chicago, 454pp.
- Ye, H., L.S. Kalkstein, L.S. and J.S. Greene, 1995: The Detection of Climate Change in the Arctic: An Updated Report, *Atmospheric Research*, 37, 163-174.

Presentations (Invited talks and Conference Presentations)

I have participated in over **100** presentations for a range of conferences, including, for example, the annual meetings of the Association of American Geographers, the American Meteorological Society, the American Geophysical Union, the American Wind Energy Association, and the European Wind Energy Association, as well as variety of other locations, including the International Congress of Biometeorology, and many conferences and workshops in Geography, Renewable Energy, and Applied Climatology.

Presentations and lead or co-authored research talks for 2016 (as a representative example):

Keynote Speaker: The Power of the Wind – Challenges and Prospects of Wind Energy in Oklahoma, Cameron University

Invited Speaker: University of Oklahoma School of Law

Invited Paper: Frontiers of Energy Conference, Oklahoma State University

Submitted research papers:

Annual conference, American Meteorological Society

Annual conference, Association of American Geographers

Annual conference, Southwestern Association of American Geographers

TECHNOLOGY TRANSFER EXPERIENCE

In addition to publishing numerous papers on applied climatology and statistical methods and teaching a variety of courses, I have also previously served as a technical consultant to a wide range of public and private interests, including the U.S. National Climatic Data Center, the Australian Government (through the National Resource and Information Center), the Korean Meteorological Service, Louis-Berger Consulting (a multi-national engineering firm), the World Bank, the National Environmental Trust, Strategic Decisions, Inc., and the Dupont corporation. For example, for Dupont, I advised on a variety of topics related to analysis of surface conditions (e.g., wind, fog, temperature), as relevant to dispersal of applied pesticides. I have also given numerous invited talks on wind and renewable energy to a range of audiences from first graders to high school students to guest lectures at civic groups and universities to a briefing to the Governor of Oklahoma. In my capacity as director of the Oklahoma Wind Power Initiative, I have worked as a consultant for private wind energy companies, and also closely with state agencies to attract renewable energy manufacturer, and have also given expert testimony in legal cases associated with renewable energy. I have served on the scientific or technical advisory panels for a number of organizations, including the Wind Energy Institute, and the OSU-OKC wind technician program.

I have also been very active in the International Society of Biometeorology (ISB) ever since I was awarded the Tromp Award for outstanding biometeorological research. I have held a number of roles within the ISB, including: Executive Secretary; Editor of *Biometeorology Bulletin*, and the ISB news section of the International Journal of Biometeorology; and Scientific Steering committee member for the International Congress of Biometeorology

In addition, I have reviewed papers for: Annals of the AAG, International Journal of Climatology, Journal of Climate, Bulletin, American Meteorological Society, Boundary Layer Climatology, Journal of Science Education and Technology, Climate Research, Atmospheric Environment, Journal of Applied Meteorology, International Journal of Biometeorology, Southwestern Geographer, and Meteorologische Zeitschrift, and many others. I have also served as consultant and advisor and peer advocate for Pearson academic press to help them develop introductory physical geography textbooks and on-line course materials. I have also served as a methodological and statistical reviewer for research proposals and/or served on proposal review panels for: NSF, NIH, NOAA, EPA, the World Bank, the Hong Kong Research Agency, and the US Agency for International Development.

CURRENT AND PAST GRANT SUPPORT (TOTAL AMOUNT OVER \$10,000,000¹)

Principal Investigator (Total Amount over \$6,500,000)

The Assimilation, Analysis and Dissemination of Pacific Rain Gauge Data (PI) NOAA, 06/01/2017 – 09/30/2019, \$361,000

“Developing Metrics for the Socio-Economic Impact of Two Wind Farms in Oklahoma by the Oklahoma Wind Power Initiative” (PI), NextEra Energy, \$15,000, 10/1/12-6/30/13.

“The Oklahoma Anemometer Loan Program, Oklahoma State Energy Office, \$37,000, 10/22/09-06/30/10.

“The Renewable EDGE” (Principal Investigator), Oklahoma EDGE (Economic Development Generating Excellence) board, approximately \$3,500,000, 01/01/09-12/31/10.

“The Oklahoma Wind Power Initiative”, State of Oklahoma Department of Commerce, \$1,205,814, 7/1/03-6/30/11 (This represents a series of one-year grants).

“Assessing Wind Resources in Oklahoma”, US Department of Energy, \$239,772, 5/1/03-6/31/08 (This represents a series of one-year grants).

“Installation and analysis of wind resources for Native Americans”, US Department of Energy 03/01/03-03/31/10, \$26,000.

“Renewable Energies Educational Development (REED) for Enhanced Environmental Stewardship in Oklahoma and the Southern Great Plains (Principal Investigator), Environmental Protection Agency, \$48,345, 11/1/06-10/31/07.

“Funds to support outreach and activities of the Executive Secretary” , International Society of Biometeorology, \$15,000, 01/01/05-10/31/08

“Lake Hövsgöl, Mongolia Ecosystem modeling”, World Bank, \$5500, May, 2006.

“Wind Climatology and Wind Energy Resources in the Oklahoma Panhandle”, Ridge Energy Storage Company, 04/01/04-07/01/04. \$5,000.

“Merging of Mesonet and Remotely Sensed data for the Estimation of Water and Energy Fluxes” NASA, \$455,468, 11/1/97-10/31/02.

“Evaluation of the Oklahoma Demonstration Weather Modification program”, State of Oklahoma Water Resources Board, \$262,000 7/1/98-6/30/01.

“Determining the Accuracy and Limits of Predictability of Numerical Weather Prediction for Regional Tactical Military Operations”, Air Force Office of Scientific Research, \$500,300, 11/14/97 - 11/13/00.

¹Some values are approximate. Dollar values represent all costs associated with grant (e.g., salaries, travel, indirect costs, etc.)

Co-Principal Investigator

“Robust Control of Wind Power Generating Systems”, OU School of Engineering Seed Grant, \$10,000, 8/15/10-8/14/11

“Climate variability, Urban Floods, and Stakeholder Capabilities: Linking Severe Weather Impacts to Community Users with Modeling and Visualization” (\$250,000), 10/1/11-9/30/14 NOAA

“Wind Powering Oklahoma”, US Department of Energy, \$97,000, 09/01/09-08/31/11.

“Expansion and analysis of the Comprehensive Pacific Rainfall Database, NOAA, approximately \$1,800,000, 07/01/09-06/30/18

“Program Support Through the Assimilation, Analysis and Dissemination of Global Rainage Data Sets” NOAA \$1,201,600, 5/1/01-6/30/09 (This represents two three-year grants and one one-year on the similar and related topics).

“Participation in the GLOBE Atmospheric Science Experiments”, NSF, \$627,538, 8/1/99-5/31/03

“Open Ocean Verification of Satellite-Based Rainfall Algorithms for the Global Precipitation Climatology Project: Data Assimilation and Basic Research” NOAA \$337,600, 5/1/98 - 4/30/01.

“Expansion and Analysis of the Comprehensive Pacific Rainfall Data Base” NOAA \$55,032, 5/1/99-4/30/00.

“Climate Prediction, Information, and Policy Response: A Retrospective and Prospective Assessment of Drought Management in Oklahoma”, NOAA \$207,000 5/1/97 - 4/30/99.

“Remote Sensing Internship Program”, Space Imaging, \$56,497, 8/15/99-8/14/00.