Kelvin K. Droegemeier

1 March 2021

Presidential Search Committee
Louisiana State University
Baton Rouge, LA 70803

Dear Search Committee Members,

I am deeply honored to have been nominated for the position of President, Louisiana State University system and flagship campus, and with great enthusiasm I submit this letter of interest.

Having had the privilege of interacting with a number of scholars from LSU during the past two decades, and seeing LSU at work via other activities with which I have been involved (such as the National Science Board; see below), I am keenly aware of the strength of the flagship campus and the system as a whole (not to mention recent football games in which LSU handed losses to my university!). Yet I believe for many reasons LSU is poised to go to an entirely new level, serving as the undisputed center of gravity of higher education in Louisiana and one of the Nation's top tier higher education systems.

Hailing from an EPSCoR jurisdiction in which I led the development of Oklahoma's strategic plan, I have spent my entire 35-year career in higher education and have been fortunate to develop and teach many courses, mentor students, lead large national research centers, serve as Vice President for Research (VPR), and co-found a private company. I also have been blessed to serve in a number of other leadership positions, including two six-year terms on the National Science Board (one under President Bush and one under President Obama, with the last four years as Vice Chairman), and two years as Oklahoma Cabinet Secretary of Science and Technology.

Most recently, I served two years in The White House as Director of the Office of Science and Technology Policy (OSTP) and Science Advisor to the President. In these latter roles, I coordinated planning, prioritization, and policymaking for more than two dozen Federal agencies which conduct or support research and development with combined budgets of more than $130 billion. A good deal of this work involved universities, and at OSTP I created the first ever Assistant Director for Academic Engagement. While at OSTP, I also served for two and a half months as Acting Director of the National Science Foundation.

In combination, these and other activities have given me experience as a teacher and mentor, university executive officer, organization board chair and vice chair, expert witness at congressional hearings, recruiter of companies, contract negotiator, creator of a company, fundraiser, coordinator of international activities, cabinet official working with state executive and legislative branches, and head a Federal agency developing policy in collaboration with numerous other agency heads and Congress at the highest levels of Government. Additionally, while at The White House, I coordinated with the presidents and chancellors of public and Land-grant institutions, and deans of medical schools and CEOs of hospitals, to understand their challenges in dealing with the COVID pandemic and to coordinate with other organizations, especially the Office of Management and Budget, on regulatory relief and additional funding.

The COVID pandemic has taught us a great deal, but most of all, I believe it has demonstrated clearly the wisdom of investing in all aspects of higher education, as well as our capability to accomplish amazing things on time scales, and in ways, previously thought impossible. Strong, visionary leaders therefore need to guide higher education not back to where it was prior to the pandemic, but rather to use the lessons learned from the past several months to get to a much better place. A place of broader participation where the potential of every individual is recognized and realized. A place of big ideas and a greater willingness to take intellectual risks. A place of transformational learning, greater efficiency and affordability, collaborative engagement across disciplines, sectors and ideologies, and a clear value proposition for the public good. And finally, a place where all scholarly disciplines of a comprehensive research university – those which garner large external funding and those which do not – are valued, resourced, and used to improve and enrich the human condition here at home and around the world.

Achieving these and other goals requires recognizing the traditional business models of public higher education, and the social contract it has with its many constituencies, are changing. This is not something to fear, but rather a driver of positive change to be embraced. Higher education needs to re-think models of co-investment with alumni and other partners, more effectively leverage corporate engagement for mutual benefit to both education and research, and play a greater role in local and regional economic and community development. And collegiate athletics remains one of the most powerful mechanisms for developing leaders and building enduring bonds across multiple generations whose lives have been shaped, and whose hearts have been touched, by the institution.

We obviously are living in a time of unprecedented change, challenge, and opportunity for higher education and society more generally. So much of our future depends not only upon higher education performing the many roles required of it, but also in serving as one of the few remaining beacons of shared values. These include ethical behavior, honesty, rigorous debate with civility and respect, finding common ground on difficult challenges, diversity and inclusion, accountability, and personal responsibility. These uncompromising values underpin my approach to life and leadership and should be reflected in our systems of higher education.

The LSU system provides a unique environment – in a region of our Country that far too often is overlooked – in which multiple generations having diverse backgrounds, cultures, identities, dreams, perspectives, and experiences uniquely converge. The future path for LSU should ensure it is not simply one of many, but rather one to which many turn for inspiration. My entire career has been about driving transformative change and elevating individuals and organizations to levels beyond what were imagined. I would be thrilled with the opportunity to bring this approach and its outcomes to LSU.

Thank you for considering this letter of interest, and I look forward to hearing from you.

Sincerely,

Kelvin K. Droegemeier
Regents' Professor of Meteorology
Weathernews Chair Emeritus
Roger and Sherry Teigen Presidential Professor
The University of Oklahoma

Curriculum Vitae
Kelvin K. Droegemeier

Personal Information

Born September 23, 1958 in Ellsworth, Kansas
Married Lisa K. Roevekamp on August 27, 1983
Children: None

Education

B.S. in Meteorology with Special Distinction, University of Oklahoma, 1980
M.S. in Atmospheric Science, University of Illinois at Urbana-Champaign, 1982
Ph.D. in Atmospheric Science, University of Illinois at Urbana-Champaign, 1985
Advisor: Professor Robert B. Wilhelmson
Dissertation Title: *The Numerical Simulation of Thunderstorm Outflow Dynamics*

Professional Employment

Director, White House Office of Science and Technology Policy (OSTP), 11 January 2019-19 January 2021 (leave of absence from University of Oklahoma)
Acting Director, National Science Foundation, 31 March – 22 June 2020 (while also serving as Director of OSTP)
Vice President for Research, University of Oklahoma, 2009-2018
Weathernews Chair Emeritus of Applied Meteorology, University of Oklahoma, 2009-Present
Director Emeritus, Center for Analysis and Prediction of Storms, University of Oklahoma, 2006-Present
Associate Vice President for Research, University of Oklahoma, 2005-2009
Weathernews Chair in Applied Meteorology, University of Oklahoma, 2005-2009
Director, Sasaki Institute, University of Oklahoma, 2005-2009
Roger and Sherry Teigen Presidential Professor, University of Oklahoma, 2004 (life)
Co-Founder and Deputy Director, Center for Collaborative Adaptive Sensing of the Atmosphere (CASA) (NSF Engineering Research Center), University of Oklahoma (in partnership with University of Massachusetts at Amherst, Colorado State University, University of Puerto Rico at Mayaguez) 2003-2008

Regents' Professor, University of Oklahoma, November, 2001 (life)
Professor, School of Meteorology, University of Oklahoma, July 1998-Present
OU Associates Foundation Presidential Professor, University of Oklahoma, 1998-2002
Founder and Director, Environmental Computing Applications System (research and educational supercomputing center), University of Oklahoma, 1996-2001
Co-Founder (1989) and Director (1994-2006), Center for Analysis and Prediction of Storms (CAPS) (NSF Science and Technology Center), University of Oklahoma
Associate Professor, School of Meteorology, University of Oklahoma, 1991-1998
Director of Model Development Program, Center for Analysis and Prediction of Storms, University of Oklahoma, 1989-1994
Visiting Senior Fellow, Army High Performance Computing Research Center, University of Minnesota (Sabbatical) 1 January - 30 June 1992
Deputy Director, Center for Analysis and Prediction of Storms, University of Oklahoma July 1991-February 1992
Assistant Professor, School of Meteorology, University of Oklahoma, 1985-1991
Deputy Director for Research, Center for Analysis and Prediction of Storms, University of Oklahoma, 1989-1991
Graduate Research Assistant, University of Illinois, 1980-1985
Meteorological Technician, National Severe Storms Laboratory, 1978-1980
Meteorological Aide, National Severe Storms Laboratory, 1976-1978

Federal Government Appointments

Appointed by President George W. Bush to the National Science Board and confirmed by the U.S. Senate (2004-2010)
Appointed by President Barack H. Obama to the National Science Board and confirmed by the U.S. Senate (2011-2016) (Vice Chairman of the Board 2012-2016)
Appointed by President Donald J. Trump as Director, White House Office of Science and Technology Policy (OSTP) (11 January 2019-19 January 2021)
Designated by President Donald J. Frump as Acting Director, National Science Foundation (31 March – 22 June 2020) while also serving as Director, White House Office of Science and Technology Policy

State Government Appointments

Appointed by Oklahoma Governor Mary Fallin to the Governor's Science and Technology Council (2011-2019) and Chair of Sub-Committee on Research
Appointed by Oklahoma Governor Marry Fallin as Cabinet Secretary of Science and Technology, (2017-2019)

Security Clearances

Available upon request.

Company Creation

Co-Founder of Weather Decision Technologies, Inc. (1999), now a component of DTN.

Congressional Testimony

U.S. House of Representatives Subcommittee on Science in the Re-Competition of the NSF Supercomputing Centers (1996)
U.S. House of Representatives Appropriations Subcommittee on VA, HUD and Independent Agencies, on the Budgets of the NSF and NASA (2004)
U.S. House of Representatives Subcommittee on Energy and Environment, and Subcommittee on Research and Science Education, U.S. House of Representatives Committee on Science and Technology, Regarding the State of Hurricane Research and H.R. 2407, the National Hurricane Research Initiative Act of 2007 (2008)
U.S. Senate Committee on Commerce, Science and Transportation for the hearing on *Weathering the Storm: The Need for National Hurricane Research Initiative* (2009)
U.S. House of Representatives Subcommittee on Environment, in the U.S. House of Representatives Committee on Science, Space and Technology, hearing on *Restoring US Leadership in Weather Forecasting, Part 2*. (2013)
U.S. Senate Committee on Commerce, Science, and Transportation hearing on *America COMPETES: Science and the U.S. Economy* (2013)
U.S. Senate Committee on Commerce, Science, and Transportation hearing on *America COMPETES: Leveraging the U.S. Science and Technology Enterprise* (2016)
U.S. House of Representatives Appropriations Subcommittee on Labor, Health and Human Services, Education and Related Agencies hearing on *The Role of Facilities and Administrative Costs in Supporting NIH-Funded Research* (2017)
U.S. Senate Committee on Commerce, Science and Transportation, confirmation hearing to serve as Director, White House Office of Science and Technology Policy (2018)
U.S. House of Representatives Commerce-Justice-Science Appropriations Subcommittee hearing on President's FY20 Budget Proposal (2019)
U.S. House of Representatives Committee on Science, Space and Technology hearing on President's FY21 Budget Proposal (2020)

Professional Consulting

Sperry Commercial Flight Systems Group, Honeywell Corporation. (1989-1992)
Climatological Consulting Corporation (UAL Flight #585, Colorado Springs, Colorado, 1997)
American Airlines (AA Flight #242, Dickinson, North Dakota, 1997)
National Transportation Safety Board (NTSB) (AA Flight #903, Florida Peninsula, 1997-1998)
American Airlines (AA Flight #1420, Little Rock, Arkansas, 1999-2002)
American Airlines (AA Flight #587, New York, New York, 2002-2007)
Air France (AF Flight #358, Toronto, Canada, 2006-2008)

Continental Airlines (CAL Flight #1404, Denver, Colorado, 2009-2013)
Continental Airlines (CAL Flight #511, McAllen, Texas, 2010-2011)

Depositions Given as Expert Witness

American Airlines Flight #1420 accident deposition given 1 March 2001 in Dallas, Texas
Continental Airlines Flight #1404 accident deposition given 10 December 2010 in Dallas, Texas
Continental Airlines Flight #511 in-flight incident deposition given 31 May 2011 in Dallas, Texas
Continental Airlines Flight #1404 accident deposition given 21 June 2012 in Dallas, Texas
Continental Airlines Flight #1404 accident deposition given 13 September 2012 in Dallas, Texas

Selected Activities as Director of The White House Office of Science and Technology Policy (OSTP) and Science Advisor to the President (2019-2021)

Note: A summary of key science and technology accomplishments, and OSTP leadership during the Trump Administration, may be found at: https://trumpwhitehouse.archives.gov/wp-content/uploads/2020/10/Trump-Administration-ST-Highlights-2017-2020.pdf

Chair, National Science and Technology Council (NSTC)
NSTC reports produced while serving as Chair
- Report on Near-Earth Object Impact Threat Emergency Protocols (January 15, 2021)
- Recommended Practices for Strengthening the Security and Integrity of America's Science and Technology Research Enterprise (January 15, 2021)
- National Orbital Debris Research and Development Plan (January 15, 2021)
- Progress Report on the Implementation of the Federal STEM Education Strategic Plan (December 17, 2020)
- Pioneering the Future Advanced Computing Ecosystem Strategic Plan (November 18, 2020)
- Enhancing the Security and Integrity of America's Research Enterprise (October 15, 2020)
- Research and Development Needs for Improving Resilience to Electromagnetic Pulses (June 15, 2020)
- A Strategic Vision for America's Quantum Networks (February 7, 2020)
- Nuclear Defense Research and Development Strategic Plan for Fiscal Years 2020-2024 (December 2019)
- 2019 Federal Cybersecurity Strategic Plan (December 10, 2019)
- National Strategic Computing Initiative Update 2019 (November 14, 2019)
- National Artificial Intelligence R&D Strategic Plan: 2019 Update (June 21, 2019)

- National Space Weather Strategy and Action Plan (March 26, 2019)
- Coordinated Strategic Plan to Advance Desalination for Enhanced Water Security (March 22, 2019)

Co-Chair, Ocean Policy Committee
Member, National Space Council
Co-chair, Interagency Council on Advancing Meteorological Services
Chair, President's Council of Advisors on Science and Technology (PCAST)
Chair, National Research Strategy Development component of the PREVENTS Program
Led international engagements in S&T with G7 nations, Australia, and others
Initiated Joint Committee on the Research Environment (JCORE) within the NSTC
Co-authored FY20 and FY21 Federal Agency R&D Priorities Memo
Created Student, Post-Doc, and Early Career Professionals (SPEC) Subcommittee Within PCAST
Recommended Dr. Sethuraman Panchanathan to the President for Nomination as NSF Director
Recommended slate of candidates to the President for the National Science Board Class of 2020
Developed program to increase the competitiveness of HBCUs
Member, PREVENTS Task Force on Veteran Suicide Prevention
Gave commencement address at SDSMT
Gave commencement address at Penn State College of Earth and Mineral Sciences
Member, Federal Data Strategy Team
Member, President's Coronavirus Task Force
Led technical effort with OSTP and DOD to provide 100 MHz of mid-band spectrum for 5G auction

Selected Activities as Acting Director of the National Science Foundation (2020)

Member of Global Research Council Governing Board
Member, National Science Board
Chair, National Science Board Executive Committee
Member of Government/University/Industry Research Roundtable
Helped develop $2B budget request as part of Federal stimulus package
Initiated research and education efforts associated with the Trillion Trees project
Responded to several congressional inquiries (Sen Reed, Rep Shalala, Sen Wicker, Sen Alexander)
Represented NSF at the Global Research Council Board meeting (1 of 2 Vice Chairs)
Addressed Committee on Equal Opportunity in Science and Engineering (CEOSE)
Addressed Established Program to Stimulate Competitive Research (EPSCoR) PD/PI meeting
Gave input on the Schumer Frontier Act
Sent note to staff on George Floyd murder
Held discussion with Assistant Directors on George Floyd murder
Participated in Math and Physical Sciences Assistant Director search

Selected Activities as Vice President for Research, University of Oklahoma (2009-2018)

Achieved Carnegie R1 (Highest Research Activity) status (2011)
Led Aspire 2020 strategic planning process to create decadal roadmap for research and creative activity
Created new budgeting and commitment tracking/payment system in Office of the Vice President for Research (VPR)
Created the Center for Research Program Development and Enrichment in the VPR Office (works individually with faculty to scaffold their scholarly programs for the long term, build teams, identify funding, create opportunity)
Created the Broader Impacts in Research position in the VPR Office (diversity enhancement, engagement, education and outreach)
Created the Research Statistics and Analysis Group in the VPR Office (data analytics regarding all aspects of research enterprise)
Created the Office of Undergraduate Research reporting jointly to the VPR and Provost
Created the Defense/Security/Intelligence Research Initiative
Established Distinguished Faculty Fellow positions in the VPR Office
Created the VPR Advisory Committee
Created the Center for Applied Research and Development within the VPR Office (assists faculty in working with companies and mission agencies on applied R&D projects)
Established the University Strategic Organization Program (institutional investment in centers and institutes that are foundational to the University's scholarship enterprise)
Established the Faculty Challenge Grant Program
Created the VPR Awards Program
Created the Arts and Humanities Faculty Fellowship Program
Helped establish and fund the Humanities Forum
Created the Center for Autonomous Sensing and Sampling (reports to VPR)
Created the Recognition Program for Exceptional Achievements in Research and Creative Activity (incentive and reward salary bonus program for highly prestigious achievement)
Created the Faculty Leadership Academy
Created the monthly *President's R&D Highlights* publication
Oversaw production of the yearly Red Book of Federal Research Priorities for engaging the Oklahoma Congressional delegation
Created Faculty and Staff Publication Support Program (subvention, open access)
Established the National Institute for Risk and Resilience (reports to VPR)
Assisted with the construction of Four Partners Place, Five Partners Place, and the Radar Innovations Laboratory on the Research Campus
Oversaw construction and management of the Devon Energy Hall Clean Room
Chaired campus STEM Education Committee and organized a planning charrette
Coordinated several cluster hiring initiatives (radar, social science, environment)

Created and now Chair the Regional VPR/VCR Group (approximately 26 institutions among 12 states in the Midwest)
Established Memorandum of Understanding with Tsinghua University, Beijing, China
Established research engagement with Brazil via the OU in Rio Program
Assisted with recruitment of private companies to the Research Campus

Selected Activities as Oklahoma Cabinet Secretary of Science and Technology (2017-2019)

Chair, Oklahoma Science and Technology Council
Chair, Unmanned Systems Council
Oversight of Oklahoma Space Industry Development Authority (Oklahoma Spaceport)
Oversight of Oklahoma Center for the Advancement of Science and Technology
Member, Task Force on Updating Oklahoma Academic Standards for Computer Science
Member, Oklahoma Science and Technology Research and Development Board
Co-Organizer, Governor's Annual STEM Summit (keynote speaker in 2014)
Developer, Higher Education Access for Success Program
Developer, OneOklahoma concept for State's three major research universities
Coordinated with State Legislature on various initiatives and bills
Participated in recruitment of companies to Oklahoma, including direct foreign investment
Oversight of Oklahoma Center for the Advancement of Science and Technology
Member, Task Force on Updating Oklahoma Academic Standards for Computer Science
Member, Oklahoma Science and Technology Research and Development Board

Selected Activities on National Science Board (2004-2016)

Member, Vannevar Bush Award Selection Committee, National Science Board (2006)
Co-Chair, Hurricane Science and Engineering Task Force, National Science Board (2005- 2007)
[Publication: "Hurricane Warning - The Critical Need for a National Hurricane Research Initiative, available at http://www.nsf.gov/nsb/committees/archive/hurricane/initiative.pdf]
Member, Task Force on Transformative Research, National Science Board (2006-2007)
[Publication: "Enhancing Support of Transformative Research at the National Science Foundation," available at http://www.nsf.gov/nsb/documents/2007/tr_report.pdf]
Member, Vannevar Bush Award Selection Committee, National Science Board (2006-2007)
Chair, Task Force on Cost Sharing, National Science Board (2007-2009)
[Publication: **"**Investing in the Future: NSF Cost Sharing Policies for a Robust Federal Research Enterprise," available at http://www.nsf.gov/pubs/2009/nsb0920/nsb0920.pdf]

Chair, *ad hoc* Committee on Nominating for NSB Elections, National Science Board (2008)
Chair, Committee on Programs and Plans, National Science Board (2008-2010)
Member, National Science Board Executive Committee (2011-2016)
Chair, National Science Board *ad hoc* Committee on Nominating for NSB Elections (2011)
Member, National Science Board Sub-Committee on Facilities (2011-2014)
Co-Chair, National Science Board Task Force on Mid-Scale Research (2011-2012)
[Publication: "The National Science Foundation Support of Unsolicited Mid-Scale Research," available at http://www.nsf.gov/nsb/publications /2012/nsb1222.pdf**]**
Vice Chairman, National Science Board (2012-2016)
Member, National Science Board Task Force on Administrative Burdens (2012-2013)
Chair, National Science Board *ad hoc* Committee on Nominating for NSB Elections (2013)
Chair, National Science Board Committee on Science and Engineering Indicators (2014-2016)
[Publication: Multiple documents at http://www.nsf.gov/nsb/sei/index.jsp]
Chair, National Science Board *ad hoc* Task Force on NEON (2015-2016)

Fundraising and Development (University of Oklahoma)

Worked with President David L. Boren and CEO of American Airlines to establish the American Airlines Professorship in Meteorology
Worked with President David L. Boren and Dean John T. Snow to establish the Williams Chair in the School of Meteorology
Worked with President David L. Boren and Vice President for Research Lee Williams to raise $16M for the Stephenson Life Sciences Research Center
Worked with Dean John T. Snow to establish the Mark and Kandi McCasland Chair in the School of Meteorology
Led an initiative to obtain a $3M gift from a private family to create the National Alliance for Social-Behavioral Systems and Extreme Environmental Events
Presenter at various Office of Development fundraising events

Professional/Honorary Society Memberships and Service

Tau Beta Pi Engineering Society, University of Oklahoma (1978)
Mortar Board, University of Oklahoma (1979)
American Meteorological Society, Student Member (1976 – 1985)
Sigma Xi Scientific Research Society (1983)
American Meteorological Society, Full Member (1986)
American Association for the Advancement of Science (1985)
American Geophysical Union (1986)
American Association of University Professors (1985)

Vice-President, OU Chapter of Sigma Xi (1987)
President, OU Chapter of Sigma Xi (1988)
Fellow of the Cooperative Institute for Mesoscale Meteorological Studies (1986 – Present)
Society of Industrial and Applied Mathematics (1989)
American Institute for Aeronautics and Astronautics (1989)
Vice President, Central Oklahoma Chapter of the AMS (1997 – 1998)
Vice President, Central Oklahoma Chapter of the NWA (1997 – 1998)
Councilor of the American Meteorological Society (2004 – 2008)
Member, Council on Competitiveness Technology Leadership & Strategy Initiative (TLSI) (2016 – 2019)

Personal & Community Service and Leadership

Author of a 170-word, daily weather science column for the Daily Oklahoman newspaper (July, 1999-July 2001)
Board of Directors, Norman, Oklahoma Chamber of Commerce (2003-2006; 2009-2012)
Chair, Weather and Climate Team, Oklahoma Economic Development Generating Excellence (EDGE) Governor's Task Force (2003)
Member, Worship Team, Riverside Church, Norman, Oklahoma (1994-2009)
Deacon, Riverside Church, Norman, Oklahoma (2003-2005)
Co-Chair, Norman, Oklahoma Chamber of Commerce Weather Committee
Board of Advisors, Riverside Church, Norman, Oklahoma (2005-2007)
Board of Trustees, Riverside Church, Norman, Oklahoma (2007-2009)
Elder, Riverside Church, Norman, Oklahoma (2009-2010)
Head Usher, LifeChurch, Oklahoma City, Oklahoma (2013-2018)

Awards and Special Recognition

George Lynn Cross Scholarship, University of Oklahoma (1978 – 1979)
Dresser Engineering Scholarship, University of Oklahoma (1979 – 1980)
OU Engineering Dean's Student Advisory Council (1979 – 1980)
Tau Beta Pi Fellowship (1980)
Phi Kappa Phi Honor Society (1981)
University of Illinois Fellowship (1981 – 1982)
Outstanding Young Men of American (1982)
Outstanding First-time Presentation, 12th Conference on Severe Local Storms, San Antonio, TX, American Meteorological Society (1982)
University of Illinois Fellowship (1982 – 1983)
University of Illinois Fellowship (1983 – 1984)
Sigma Xi Research Paper Award, University of Illinois (1985)
Who's Who in Technology Today (1985)
OU Associates Distinguished Lectureship Award (1986)
Presidential Young Investigator, National Science Foundation (1987 – 1992)

Oklahoma State Senate Citation (1987)
Fellow of the NOAA Cooperative Institute for Mesoscale Meteorological Studies (1987-Present)
OU Associates Distinguished Lectureship Award (1987)
OU Associates Distinguished Lectureship Award (1988)
OU Associates Distinguished Lectureship Award (1989)
Professor of the Year, College of Geosciences (1991)
Discover Magazine Award for Technology Innovation to CAPS (computer software category) (1997)
Computerworld Smithsonian Award to CAPS (science category) (1997)
OU Associates Presidential Professorship (1998)
NSF Pioneer Award (2001)
Regents' Professorship, University of Oklahoma (2001)
Fellow of the American Meteorological Society (2002)
NOAATech 2002 Award for Best Use of Advanced Networks: "WSR-88D Radar Data over the Internet/NGI" (co-recipient, 2002)
Federal Aviation Administration Excellence in Aviation Award (2002)
Roger and Sherry Teigen Presidential Professorship (2004)
Invited Speaker for the Millennium Lecture Series, UTEP (2006)
Honorary Citizen of the State of Oklahoma (2008)
Fellow of the American Association for the Advancement of Science (2014)
University of Illinois Department of Atmospheric Sciences Distinguished Alumni Speaker (2016)
Rod Rose Award for best article in the *Journal of Research Administration* (2017)
Washingtonian Tech Titan (2019)
Public Service Award, Association of Independent Research Institutes (2019)
Indiana University Bicentennial Medal (2019)
Inaugural Recipient of Champion of Research Development Award, National Organization of Research Development Professionals (2020)
University of Illinois College of Liberal Arts and Sciences 2020 Alumni Achievement Award (2020)

Selected Departmental and University Service Activities

Undergraduate Advisor, School of Meteorology (1985-2009)
Member of Advisory Council, Cooperative Institute for Mesoscale Meteorological Studies (1987 - 1988)
Member, School of Meteorology Graduate Studies Committee (1988-1990)
Coordinator of Oklahoma Symposium on High-Performance Scientific Computing (1987)
Chairman, OU Campus Computing Advisory Committee (1987-1989)
Administrative Director, Geosciences Computing Network (1987-1989)
Member, EECS Faculty Search Committee (1989)
Member, Math Department Chair Search Committee (1989)

Chairman, School of Meteorology Graduate Studies Committee (1989-1990)
Facilitator for Course on Numerical Grid Generation, Televised from Mississippi State University (Spring 1990)
Member of the State of Oklahoma Supercomputer Advisory Committee (1990)
Coordinated purchase and installation of the CAPS computer system (1992)
Faculty Advisor to School of Meteorology Student Affairs Committee (1993)
Chairman, University of Oklahoma Task Force on Computer Networking (1994-1995)
Capstone Course Mentor (1994-1997)
Member, Engineering Dean Search Committee (1996-1998)
Member, Budget Council (1996-1998)
Member, School of Meteorology Committee A (executive committee) (1996-1998)
Chair of Environmental Computing Applications System Steering Committee and Director of ECAS (1996-1999)
Chair of School of Meteorology Budget Sub-Committee (1996-1997)
Member of OU Research Council (1997-2000)
Member, Faculty Senate Task Force on Intellectual Property (1998)
Vice Chair of OU Top 10 Scientists Group (1998)
OU Speakers Bureau (1997-1998)
Member, Search Committee for the Director of the Office of Research Administration (1998)
Member, Presidential Professorship Selection Committee (1998-2001)
Member, Conflict of Interest Advisory Committee (1998-2000)
Member, Technology Development Council Task Force on Computing (1998)
Chair of OU Research Council (1999-2000)
Initiated Effort to Create the American Airlines Endowed Professorship in Meteorology (1999)
Member, Graduate Studies Committee, OU School of Meteorology (1999-2001)
Member of Ad Hoc Undergraduate Committee, OU School of Meteorology (1999-2005)
Search Committee, Associate Vice President for Technology Development (2000)
Member of Lowry Chair Search Committee (1999-2001)
Member of Williams Chair Search Committee (2001-2002)
Chair of SoM Undergraduate Studies Committee (2001-2005)
Member, Board of Advisors, OU Supercomputing Center for Education & Research (2001-2017)
Member, OU Patent Advisory Committee (2003-2005)
Member, Two Faculty Search Committees in SoM (radar hires) (2003-2005)
Member, ECE Chair Search Committee (2004-2005)
Member, Search Committee for the Dean of the College of Earth and Energy (2005-2006)
Facilitator of Research Retreats for the College of Earth and Energy (2005)
Member, OU Renaissance Project Planning Committee (2006-2007)
Chair of Eddie Carol Smith Scholarship Selection Committee (2006)
Member, OU Research Cabinet (2006-2016)
Member, K20Center/Education College Faculty Search Committee (2006-2008)
Member, State of Oklahoma EPSCoR Committee (2007-2018)

Member, McCasland Chair Search Committee (2007-2008)
Member, Graduate College Outstanding Dissertation Award Selection Committee (2008)
Member, Task Force on Establishing a Doctoral Program, OU College of Architecture (2009)
Member, Selection Committee, Regents' Award for Superior Staff Performance (2010)
Member, OU University Club Board of Trustees (2013-2016)
President, OU University Club Board of Trustees (2014-2015)
Member, Search Committee, Director of the Oklahoma Geological Survey (2014)
Chair, State EPSCoR Subcommittee on Strategic Planning (2014-2015)
Co-Chair, Environmental Leadership Search Committee (2015-2016)
Member, OU Graduate Education Task Force (2015-2017)
Founding Director of OU Faculty Leadership Academy (2015)
Convocation Address to Graduate College, OU Health Sciences Center (2016)

Selected Professional Development and Service Activities

Summer Faculty Fellow, Minnesota Supercomputer Institute (1986)
Member, Joint Peer Review Board, National Center for Supercomputing Applications and Pittsburgh Supercomputer Center (1987-1991)
Member, American Meteorological Society STAC Committee on Severe Local Storms (1987-1990)
Member, NCAR Supercomputer Upgrade Panel (1989)
Visiting Scientist, Minnesota Supercomputer Institute (1990)
Program Co-Chairman, 16th AMS Conference on Severe Local Storms (1990)
Member, AMS Committee on Severe Local Storms (1987 - 1990)
Associate Editor, *Monthly Weather Review* (1991-1999)
Member, Review Panel, NSF High Performance Computing and Communications Program (1992)
Visiting Senior Fellow, Army High Performance Computing Research Center, University of Minnesota (1992)
Member, AMS/EPA Steering Committee on Air Quality (1992-1994)
Co-Organizer, Workshop on High-Performance Computing in the Geosciences, Les Houches, France (1993)
Member, US Weather Research Program Prospectus Development Team #1 (1994)
Member, University Relations Committee, University Corporation for Atmospheric Research (1995 - 2001)
Co-Organizer, 1st Joint US-Korea Workshop on Storm- and Meso-Scale Weather Analysis and Prediction (1996)
Member, University Governance Examination Team, University Corporation for Atmospheric Research (1996)
Member, US Weather Research Program Proposal Review Panel (1996)
Member, US Weather Research Program Scientific Steering Committee (1997-2001)
Co-Organizer, 2nd Joint US-Korea Workshop on Storm- and Meso-Scale Weather Analysis and Prediction (1997)

Member, National Centers for Environmental Prediction Review Panel for Aviation Weather Center (1998)
Co-Chair, US Weather Research Program Prospectus Development Team #9 (1998)
Member, Geosciences-2000 Working Group, National Science Foundation (1998-1999)
Member, User Advisory Council, National Computational Science Alliance (1998-2000)
Member, Scientific Computing Division Advisory Panel, National Center for Atmospheric Research (1998-2003)
Chair, University Relations Committee, University Corporation for Atmospheric Research (1998-1999)
Member, Planning Committee of the World Weather Research Program Sydney Olympics 2000 Forecast Demonstration Project (1998-2000)
Co-Organizer of the First Study Conference on Aviation Weather Hazards (1998)
Member of the Oklahoma Secretary of Science and Technology Development's Terabit Testbed Network Advisory Panel
Founder and Manager of Project CRAFT: The Collaborative Radar Acquisition Field Test (CRAFT) (1998-2006)
Gave Congressional Briefing on the 3 May 1999 Oklahoma Tornado Outbreak (1999)
Organizer and Chair, National Symposium on the Great Plains Tornado Outbreak of 3 May 1999 (2000)
Member, Organizing Committee, US Weather Research Program Workshop on Research Needs of the Private Sector (2000)
Organizer, Special Issue of the American Meteorological Society Journal *Weather and Forecasting* Devoted to the May 3rd Tornado Outbreak (2000-2001)
Leader, Analysis and Verification Team, Weather Research and Forecast (WRF) Model Project (2000)
Participant in the Higher Education Academy of the Oklahoma Educator's Leadership Academy (2000-2001)
Member, Advisory Committee, NSF Geosciences (GEO) Directorate (2001- 2005)
Member, Blue Ribbon Panel on Cyber Infrastructure, National Science Foundation (2001-2002)
Member, National Science Foundation Proposal Review Panel, 4th Science and Technology Centers Competition (2001)
Member, Board of Trustees, University Corporation for Atmospheric Research (2001-2008)
Member, Organizing Committee, Workshop on Cyberinfrastructure for Environmental Research and Education (2002)
Member, National Research Council Committee on Weather Forecasting Accuracy for FAA Air Traffic Control (2002)
Attendee, American Meteorological Society Summer Colloquium on Science and Public Policy (2002)
Adjunct Member of the National Weather Service Science and Technology Integration Plan (STIP) Observing Integrated Planning Team (ObsIPT) (2002)
Member, Organizing Committee, EPSCoR Workshop on Cyberinfrastructure (2002-2003)

Member, National Science Foundation Steering Committee for Cyberinfrastructure Research and Development in the Atmospheric Sciences (CyRDAS) (2002-2003)
Vice Chairman, Board of Trustees, University Corporation for Atmospheric Research (2003-2004)
Chair, US Weather Research Program CONDUIT/CRAFT Steering Committee (2003-2007)
Member, Advisory Committee, NSF Directorate for Computing Information Science and Engineering (CISE) (2003-2004)
Member, Review Panel, NSF Extensible Terascale Facility (ETF) proposal solicitation (2003)
Member, ad hoc Search Committee for a Senior Scientist at Howard University (2003)
Chairman of the Board of Trustees, University Corporation for Atmospheric Research (2004-2008)
Member, Advisory Committee, NCAR Data Assimilation Strategic Initiative (2004-2006)
Member, Sasaki Applied Meteorology Research Institute (SAMRI) Council (2004-2006)
Member of Southeastern Research Universities Association (SURA) High Performance Computing/Grid Planning Group (2004-2005)
Appointed by President George W. Bush to the National Science Board (2004-2010)
Councilor, American Meteorological Society (2004-2008)
Member, Weather Research and Forecasting (WRF) Model Research Advisory Board (2005-2006)
Member, National LambdaRail (NLR) Science Research Council (NSRC) (2005-2007)
Member, Data Center Blue Ribbon Panel, National Center for Atmospheric Research (2005-2006)
Member, Advisory Committee, National Center for Computational Sciences and the Computer Science and Math Division, Oak Ridge National Laboratory (2006)
Member, Scientific Advisory Board, Microsoft Research Corporation (changed to Microsoft External Research Advisory Board in January, 2009) (2006-2008)
Member, National Advisory Council, Renaissance Computing Institute (2007-2010)
Member, Program Committee for e-Science 2007 Conference (2007)
Member, TeraGrid Requirements Analysis Team (2007-2008)
Member, Board of Directors, National Weather Museum and Science Center (2009-2017)
Member of Search Committee for Director, National Center for Atmospheric Research (2008)
Chair, UCAR Review Panel for the NOAA Aviation Weather Center, Storm Prediction Center, Environmental Modeling Center, NCEP Central Operations (2008-2009)
Member, Board of Directors, Council on Governmental Relations (2009-2014)
Member, Program Committee for e-Science 2009 Conference (2009)
Member, Program Committee for the 10th IEEE/ACM International Symposium on Cluster, Cloud and Grid Computing (CCGrid 2010; 2009-2010)
Member, Board of Directors, Oak Ridge Associated Universities (ORAU) (2010-2013)
Member, Board of Directors, Oak Ridge Associated Universities (ORAU) Foundation (2010-2013)
Member, Advisory Committee, Computer Science and Mathematics Division, Oak Ridge National Laboratory (2010-2012)

Member, AAU Task Force on Strengthening the University-Government Research Partnership (2010-2018)
Member, Board of Trustees, Southeastern Universities Research Association (2011-2019)
Member, Presidential Search Committee, University Corporation for Atmospheric Research (2011)
Member, Oklahoma Governor's Science and Technology Council (2011-2019)
Vice Chairman, Board of Directors, Oak Ridge Associated Universities Foundation (2011-2013)
Member, Executive Committee, Association of Public and Land Grant Universities Council on Research Policy and Graduate Education (2011-2014)
Member, Board on Research Data and Information, National Research Council of the National Academies (2011-2015, 2016-2019)
Member, Search Committee for the Director of the NOAA National Weather Service (2012)
Chairman-Elect, Council on Research Policy and Graduate Education, Association of Public and Land Grant Universities (2012-2013)
Member, National Research Council Panel on Information Science at the Army Research Laboratory (2013-2015)
Chair, Development and Relations Committee, Southeastern Universities Research Association (SURA) Board of Directors (2013-2015)
Member, Board of Directors, Association of Public and Land Grant Universities (APLU) (2013-2014)
Member, NCAR Director Blue Ribbon Advisory Panel (2014)
Chairman, Council on Research (formerly Council on Research Policy and Graduate Education), Association of Public and Land Grant Universities (2013-2014)
Keynote Speaker, Governor Mary Fallin's Annual STEM Summit (2015)
Creator of and Host for the Inaugural Meeting of Central and Southern Plains Vice Presidents and Vice Chancellors for Research, University of Oklahoma (2014)
Member, Board of Directors, The Alliance for Science and Technology Research in America (ASTRA) (2014-2019)
Member Presidential Search Committee, University Corporation for Atmospheric Research (2015-2016)
Past-Chairman, Council on Research (Formerly the Council on Research Policy and Graduate Education), Association of Public and Land Grant Universities (2014-2016)
Member, NSF Search Committee for Director of Office of Integrative Activities (2015-2016)
Vice-Chairman of the Board of Trustees, Southeastern Universities Research Association (SURA) (2016-2018)
Member, NSF Assistant Director of Geosciences Search Committee (2016)
Leader of the Central and Southern Plains Vice Presidents and Vice Chancellors for Research Group and Chair of the Executive Committee (2014-2018)
Member, State of Oklahoma EPSCoR Executive Subcommittee (2015-2018)
Invited Participant, Future of OSTP Planning Meeting, Sponsored by the Baker Institute, Rice University (2016)

Member, Council on Competitiveness Technology Leadership and Strategy Initiative (2016-2019)
Chairman of the Board of Trustees, Southeastern Universities Research Association (SURA) (2018 – 2019)

Courses Taught at the University of Oklahoma (* indicates developed new)

Introduction to Meteorology (Undergraduate)
Atmospheric Dynamics I (Undergraduate)
Atmospheric Dynamics II (Undergraduate)
Mesoscale Meteorology (Undergraduate)
*Computational Fluid Dynamics I (Graduate)
*Computational Fluid Dynamics II (Graduate)
Convective Dynamics and Modeling (Graduate)
Numerical Weather Prediction (Graduate)
*Variational Data Assimilation (Graduate)
Physical Mechanics for Meteorology (Undergraduate)
*Severe and Unusual Weather (Undergraduate)
Advanced Synoptic Meteorology (Graduate)
Synoptic-Dynamic Meteorology (Undergraduate)
*Hazardous Weather Detection and Prediction (Senior Undergraduate/Graduate)
*Demystifying the Academic Research Enterprise – DARE (Online, All Disciplines, All Levels Undergraduate and Graduate)

Previous Externally-Sponsored Research Grants

NOAA	"Central Oklahoma Mesoscale Modeling and Analysis Project". Principal Investigator, $8,199. (6/15/86 to 8/15/86).
NSF	"Numerical Simulation and Observational Analysis of Thunderstorms and Subcloud Phenomena". Principal Investigator, $125,920. (7/15/86 to 7/14/88).
NOAA	"Central Oklahoma Mesoscale Modeling and Analysis Project". Principal Investigator, $12,891. (12/1/86 to 5/31/88).
Keck	Research Foundation - Proposal to Upgrade the Digital Image Processing Facilities of the Geosciences Computing Network. Co-Principal Investigator (with T.H.L. Williams), $350,000. (December, 1988)
OCAST	Oklahoma Center for the Advancement of Science and Technology, Computer System for Digital Image Processing and Graphic Visualization. Principal Investigator, $100,000 (November, 1989).

Honeywell Sperry Commercial Flight Systems Group, Air Transport Systems Division - "Development of an Expert System for the Honeywell Windshear Computer Using Data from a Numerical Thunderstorm Model. Part I. Computations Support". Principal Investigator, $8,095. Yr 1.

Honeywell Sperry Commercial Flight Systems Group, Air Transport Systems Division - "Development of an Expert System for the Honeywell Windshear Computer Using Data from a Numerical Thunderstorm Model. Part I. Computations Support". Principal Investigator, $8,900. Yr 2.

NSF "Convective Modeling and Predictability Studies". Principal Investigator, $177,606. (2/15/89 to 7/1/91).

NSF "Simulation of Meso- and Convective-Scale Dynamics". Presidential Young Investigator Award. Principal Investigator. (Funded 1987-1992)

- 1st year funding, including NSF and industrial match: $247,040 (1987-1988)
- 2nd year funding, including NSF and industrial match: $137,984 (1988-1989)
- 3rd year funding, including NSF and industrial match: $142,500 (1989-1990)
- 4th year funding, including NSF and industrial match: $ 99,500 (1990-1991)
- 5th year funding, including NSF and industrial match: $100,000 (1991-1992)

NSF "Center for Analysis and Prediction of Storms (CAPS)". Science and Technology Research Center. Co-Principal Investigator (with D. Lilly) and Deputy Director for Research, $4,900,000. (1988 - 1993, first 5 of 11 years).

NSF "Center for Analysis and Prediction of Storms (CAPS)". Science and Technology Research Center. Co-Principal Investigator (with D. Lilly, F. Carr, and T. Gal-Chen) and Deputy Director, $8,617,076. (1992 - 1997).

FAA "Parameter Retrieval from Doppler Radar Observations and Development of Related Mesoscale Prediction Models". Co-Principal Investigator (with D. Lilly and T. Gal-Chen), $295,092. (1991-1993).

NSF "Further Development of the CAPS Advanced Regional Prediction System". Principal Investigator (supplement to CAPS grant from Army Atmospheric Sciences Laboratory), $17,529. (1992).

EDR	“Numerical Simulation of Fog Formation in Complex Terrain Using the ARPS Model”. Principal Investigator, $63,633, (Nov 1993 - Oct 1994). Year 1 of 3 Years.
NSF	"Dynamics and Predictability of Convective Storms". Principal Investigator, $118,100 (1 Jul 1993 - 30 Jun 1994)
EDR	“Numerical Simulation of Fog Formation in Complex Terrain Using the ARPS Model”. Principal Investigator, $78,869 (Nov 1994 - Oct 1995). Year 2 of 3 years.
FAA	“Supplement to the Center for Analysis and Prediction of Storms (CAPS)” Principal Investigator (with J.T. Lee), $292,262.
NSF	"Center for Analysis and Prediction of Storms (CAPS)". Principal Investigator (with D. Lilly, F. Carr, J. Straka, and Q. Xu), $1,586,383.
AMR Corp	“Project Hub-CAPS: Developing a Prototype Storm-Scale NWP System for Commercial Aviation. Principal Investigator, $342,630, year-1 of 3 years (1 July 1996 - 31 June 1997).
NSF	"Dynamics and Predictability of Convective Storms". Principal Investigator, $118,791 (year 3 of 3 years: 31 December 1995 - 30 Jun 1997).
EDR	“Numerical Simulation of Fog Formation in Complex Terrain Using the ARPS Model”. Principal Investigator, $55,490 (Nov 1994 - Oct 1996). Year 3 of 3 years.
NSF	“Center for Environmental Applications of the Oklahoma Mesonet”. Co-Principal Investigator. $1,010,000 (EPSCoR Program).
NSF	“Joint US-Korea Workshop on Storm- and Meso-Scale Weather Analysis and Prediction.” PI, $44,394, 1 year.
Rome Labs	“Mesoscale Modeling of Lake Effect Snow.” PI (with D. Jahn as Co-PI), $33,897, 1.5 years.
NSF	"Center for Analysis and Prediction of Storms (CAPS)". Principal Investigator (with F. Carr, J. Straka, A. Shapiro, K. Brewster, M. Xue), $1,592,810. (year 9 of 11)
NSF	“Research Experiences for Undergraduates at the Oklahoma Weather Center”. Co- Principal Investigator, $72,695 (Fall 1997 - Spring 1998).

NSF	"Center for Analysis and Prediction of Storms (CAPS)". Principal Investigator (with F. Carr, J. Straka, A. Shapiro, K. Brewster, M. Xue), $1,582,616. (year 10 of 11)
Various	“A Proposal to Upgrade the Cray J90 Supercomputer at the OU Environmental Computing Applications System (ECAS).” Principal Investigator, $233,000, 1 year (1 July 1997-31 June 1998). Funded by University of Oklahoma, AMR Corporation/American Airlines, Oklahoma State Regents for Higher Education.
NSF	“Acquisition of Equipment to Create the Environmental Computing Applications System”. Principal Investigator, $580,000 (1 September 1995 - 31 August 1998).
AMR Corp	“Project Hub-CAPS: Developing a Prototype Storm-Scale NWP System for Commercial Aviation. Principal Investigator, $327,600, year-3 of 3 years (1 July 1996 - 31 June 1999).
NSF	"Center for Analysis and Prediction of Storms (CAPS)". Principal Investigator (with F. Carr, J. Straka, A. Shapiro, K. Brewster, M. Xue), $1,379,226. (year 11 of 11).
OSRHE	"Enhancement of the CAPS Storm-Scale Numerical Weather Prediction System and Real Time Access to Level II NEXRAD Radar Data." Principal Investigator, $256,000, 2 years. Funded by Oklahoma State Regents for Higher Education
FAA	"Explicit Modeling of Convection in the Terminal Area." Principal Investigator, $25,000, 1 year (Oct 1998 - Oct 1999).
NSF	"The Oasis Project: Oklahoma Atmospheric and Surface-Layer Instrumentation System." Co-Principal Investigator, $1,509,729, 3-years.
NSF	“Center for Environmental Applications of the Oklahoma Mesonet”. Co-Principal Investigator. $23,469 (EPSCoR Program).
NSF	"Research Experiences for Undergraduates at the Oklahoma Weather Center". Co-Principal Investigator, $150,000, 2 years.
FAA	"Comparison of Deterministic Thunderstorm Prediction with the Statistical Growth and Decay Tracker. Principal Investigator, 1 year, $60,000. Funded.
NSF	"National Symposium on the Great Plains Tornado Outbreak of 3 May 1999." Principal Investigator, 1 year, $15,255.

NSF	"National Symposium on the Great Plains Tornado Outbreak of 3 May 1999." Principal Investigator, 1 year, $5,000. Funded by the Oklahoma EPSCoR Program.
KMA	"Continued Development of the Advanced Regional Prediction System for the Korean Meteorological Administration." Co-Principal Investigator, 1 year, $60,000.
AMR Corp	"Continued Enhancement of the Hub-CAPS Forecast System." Principal Investigator, 1 year, $25,000.
Williams	"Advanced Weather Forecasting for Energy." Principal Investigator, 5 years, $8,090,518. Funded by Williams Energy Marketing and Trading Company. Project was terminated due to the Enron scandal and associated disruption of energy marketing and trading industry; approximately $4.5M of the planned $8.1M were expended.
WDT	"Enhancement of the Advanced Regional Prediction System (ARPS) for Commercial Application." Principal Investigator, 1 year, $135,243. Funded by Weather Decision Technologies, Inc.
NOAA	"A Prototype Regional Fine-Scale Numerical Weather Analysis and Prediction System Using NEXRAD Radar Data." Principal Investigator, $474,200, 1-year.
NSF	“A Probabilistic Framework for Assessment and Interpretation of Quantitative Precipitation Forecasts from Storm-Scale Models.” (USWRP Program). Co-Principal Investigator (with E. Foufoula-Georgiou, University of Minnesota), $334,171, 3 years.
NOAA	"Moving Realtime WSR-88D Base Data Over The NGI." Co-Principal Investigator, 1 year, $198,000.
METRI	"Assimilation of X-Band and WSR-88D Doppler Radar Data into a Mesoscale Forecast System." Principal Investigator, 1 year, $22,500.
NOAA	" A Real-time, NGI-Based, Direct Digital Ingest and Archive of WSR-88D Base Data as a Prototype for a National System." Co-principal investigator, 3 years, $540,000.
HRL	“Observing System Simulation Experiments for Airborne Weather Sensors.” Principal Investigator (4/15/05-6/14-05), $33,560.
NSF	"Research Experiences for Undergraduates at the Oklahoma Weather Center." Co-Principal Investigator, 2 years, $163,467.

ATSC	"Preparation of SBIR Proposal on the Calibration of Ensemble Forecasts of Atmospheric Dispersion." Co-Principal Investigator, 3 months, $4,677.
NSF	"MRI: Acquisition of an Itanium Cluster for Grid Computing." Co-Principal Investigator, 3-years, $340,000.
NSF	"On the Optimal Use of WSR-88D Doppler Radar Data for Variational Storm-Scale Data Assimilation." Co-Principal Investigator, 3-years, $599,846.
ATSC	"Calibration of Fine-Scale Ensemble Forecasts for On-Demand Probabilistic Dispersion Modeling." Principal-Investigator, 6 months, $6,468.
NSF	"Collaborative Research: ITR Linked Environments for Atmospheric Discovery (LEAD)." Principal Investigator (OU portion of 9-institutional collaborative proposal is $1,875,709. Total grant is $11,250,000.
NSF	"Collaborative Research: ITR Linked Environments for Atmospheric Discovery (LEAD) – Supplement" Co-Principal Investigator, $119,346.
NSF	"Advancing Biotechnology and Climatology (ABC): Educating for Economic Growth in Oklahoma." Co-Principal Investigator, 3-years, $598,559.
ATSC	"Technical Support for the WRF Ensemble Reforecast System." Co-Principal Investigator (funded from DTRA), 2-years, $56,290.
NSF	"Engineering Research Center for Collaborative Adaptive Sensing of the Atmosphere (CASA)." Co-Principal Investigator and Deputy Director (OU portion of total budget for first 5 years is $5,478,109). (Total budget to date is $23,160,030.)
NOAA	"Life and Death Decisions: "An Integrative Approach to Understanding and Mitigating the Impacts of Extreme Weather." Principal Investigator, 1 year, $50,000. Funded (2014-2015)
NOAA	"A Partnership to Develop, Conduct and Evaluate Realtime High-Resolution Ensemble and Deterministic Forecasts for Convective-Scale Hazardous Weather." Principal Investigator, 3 years, $374,825. (2007-2010)

NSF "Assimilation of Doppler Radar Data for Storm-Scale Numerical Prediction Using an Ensemble-based Variational Method." Co-Principal Investigator, 3 years, $199,990. (2008-2011)

FAA "Weather Processors Support Task: Rightsizing NextGen Weather Observation Network." Principal Investigator, 2 years, $186,667. (2009-2011)

NOAA "Development of a Digital Collaboration for the Alliance for Integrative Approaches to Extreme Environmental Events." Principal Investigator, 1 year, $48,544. (2017-2018)

NOAA/NSSL "Development of a Digital Collaboration for the Alliance for Integrative Approaches to Extreme Environmental Events, Phase I: Scoping and Functional Requirements Development." Principal Investigator, 1 year, $35,482. (2017-2018)

Previous Internally-Sponsored Research Grants

OU Associates Research and Creative Activity Fund - "Central Oklahoma Mesoscale Modeling and Analysis (COMMA) Project, Phase II". Principal Investigator, $22,110. (1988)

CAPS "Initialization of a Convective Cloud Model From Observations". Principal Investigator (with C. Hane and C. Ziegler), $42,020 (2/1/90 to 2/1/91).

CAPS "Initialization of a Convective Cloud Model From Observations". Principal Investigator (with C. Hane and C. Ziegler), $59,762 (2/1/91 to 1/31/92).

OU "Instructional and Advising Improvement". Co-Principal Investigator (with F. Carr), $28,771.

CAPS "Initialization of a Convective Cloud Model From Observations". Principal Investigator (with C. Hane and C. Ziegler), $35,994 (2/1/92 to 1/31/93).

OU "Meteorological Classroom Visualization". Co-Principal Investigator (with K. Crawford), $13,375. (Funded for $9,125 on 13 April 1994).

VPR "Support for CAPS' P/R and Marketing Specialist", $10,000 (1998-2000)

Philanthropic Support for Research

ImpactWx "The Alliance for Integrative Approaches to Extreme Environmental Events." Account Sponsor, $3,000,000. (2018-2020).

Service as Chair of Graduate Student Committees (Degrees Completed)

Richard Carpenter (M.S., 1988) *Application of the Piecewise Parabolic Method to Meteorological Modeling* (with C.E. Hane)
Kimberly Carver (M.S., 1990) *The Origin of Rotation in Numerically Simulated Dry Convection*
Steven Lazarus (M.S., 1990) *The Influence of Helicity on the Stability and Morphology of Numerically Simulated Storms*
Kriste Lyon Paine (M.S., 1991) *A Comparison of Two Methods for Dynamic Grid Adaption in Two-Dimensional Scalar Transport*
William McPherson (M.S., 1991) *Sensitivity of Numerically Simulated Downbursts to the Horizontal Radius of the Initial Rain Disturbance*
Renee McPherson (M.S., 1991) *Predictability Experiments of a Numerically Modeled Supercell Storm*
James T. Johnson (M.S., 1992) *Investigation of Outflow Strength Variability in Florida Downburst-Producing Storms.*
Michael Babcock (M.S., 1992) *Aircraft Trajectory Analyses Through Simulated Microbursts*
Yong Li (Ph.D., 1994) *On the Topological Complexity of the Cost Function in Variational Data Assimilation*
Hao Jin (M.S., 1994) *Numerical Study of Cold-Air Damming* (with Q. Xu)
Richard Carpenter (Ph.D., 1994) *Entrainment and Detrainment in Numerically Simulated Cumulus Congestus Clouds* [Dissertation won the OU Outstanding Dissertation Prize in the Science and Engineering Category.]
David Jahn (M.S., 1995) *Simulation of Convective Storms in Environments with Independently-Varying Bulk Richardson Number Shear and Storm-Relative Helicity*
Seon-Ki Park (Ph.D., 1996) *Sensitivity Analysis of Deep Convective Storms*
Steven Lazarus (Ph.D., 1996) *Assimilation and Prediction of a Florida Multicell Storm Using Observed Single-Doppler Data*
Edwin Adlerman (M.S., 1997) *Numerical Simulation of Cyclic Mesocyclogenesis*
DeWayne Mitchell (M.S., 1997) Observations of Convection Initiation During CaPE 1991: A Case Study (Co-Chair with M. Eilts)
Stephen Weygandt (Ph.D., 1998) *Retrieval of Initial Forecast Fields from Single Doppler Observations of a Supercell Thunderstorm* (Co-Chair with Alan Shapiro)
Jason Levit (M.S., 1998) *A Simple Diabatic Initialization Technique for Storm-Resolving Models*
Xuechao Yu (M.S., 1999) *On Quantitative Precipitation Forecasting Using High Resolution Non-Hydrostatic Models*

Yvette Richardson (Ph.D., 1999) *The Influence of Horizontal Variations in Vertical Shear and Low-Level Moisture on Numerically Simulated Convective Storms*

Matthew W. Miller (M.S., 2000) *The Determination of Usefulness of Precipitation Forecasts and Probabilistic Precipitation Verification Using SAMEX 1998 Ensemble Data* (E. Kalnay principal supervisor)

Ernani de Lima Nascimento (Ph.D., 2002) *Dynamic Adjustment in an Idealized Numerically Simulated Bow echo.*

Hee-Dong Yoo (Ph.D., 2003) *The Impact of Radar Data Assimilation on the Chorwon Yonchon 1996 Heavy Rainfall Event.*

Janelle Janish (M.S., 2003) *Relationships Between Baroclinically-Generated Horizontal Vorticity and Mesocyclone Intensity as Revealed by Single-Doppler Velocity Retrievals Using WSR-88D Data*

Edwin Adlerman (Ph.D., 2003) *Numerical Simulations of Cyclic Storm Behavior: Mesocyclogenesis and Tornadogenesis*

Nicki Levit (M.S., 2004) *High-Resolution Storm-Scale Ensemble Forecasts of the 28 March 2000 Fort Worth Tornadic Storms*

Adam Lopes (M.S.P.M., 2004) *Forecasting Aircraft Turbulence: A Historical Perspective and New Approaches for Forecasting Aircraft Turbulence through Mesoscale Numerical Weather Prediction.*

Melissa Bukovsky (M.S., 2004) *Initiation and Propagation of Convection in Forecast Models Using Convective Parameterizations* (co-chair with J. Kain)

Jessica Proud (M.S., 2006) *Optimal Sampling Strategies for Tornado and Mesocyclone Detection Using Dynamically Adaptive Doppler Radars*

Ashton Robinson (M.S., 2007) *Impact of Low-Altitude Radar Data on Storm-Scale Numerical Weather Prediction*

Derek Rosendahl (M.S., 2008) *Identifying Precursors to Strong Low-Level Rotation Within Numerically Simulated Supercell Storms: A Data Mining Approach* (co-chair with Amy McGovern)

Bob Fritchie (M.S., 2009) *Detection of Hazardous Weather Phenomena Using Data Assimilation Techniques.*

Guoqing Ge (Ph.D., 2011) *On the Further Studies of Suitable Storm-Scale 3DVAR Data Assimilation for the Prediction of Tornadic Thunderstorms* (Co-advisor with Jidong Gao)

Service on M.S. Committees (Degrees Completed, Excluding Own Students)

Chuan-Lau Hwang, M.S. in Meteorology, 1987
A Comparison of Sigma-Coordinate and Pressure-Coordinate Primitive Equation Systems in a Regional Model

Stephen Allen, M.S. in Meteorology, 1988
An Investigation into the Gravity Current Aspects of a Cold-Air Outbreak using Variational Analysis Technique

Guang Ping Lo, M.S. in Meteorology, 1989
Observing Systems Experiments using FGGE/MONEX Data: Impact on numerical prediction of cyclones

Yu-Chieng Liou, M.S. in Meteorology, 1989
Retrieval of Three-dimensional Wind and Temperature Fields from One Component Wind Data by using the Four-dimensional Data Assimilation Technique

Daniel Zacharias, M.S. in Meteorology, 1989
A Case Study of the 10 Day 1985 Tornado Outbreak in Northern Kansas

Yvette Richardson, M.S. in Meteorology, 1993
Verification of NMC Short-Range Models Using Wind Profiler Data

David Dowell, M.S. in Meteorology, 1993
A Comparative Study of Two Supercells: Airborne Doppler Analyses

Gordana Sindic-Rancic, M.S. in Meteorology, 1994
Test of an Advanced Passive Scalar Advection Scheme for Numerical Weather Prediction

Yiping Wang, M.S. in Meteorology, 1994
The Effects of Sampling Error on Satellite IR and Microwave Rainfall Estimates Over the Open Ocean

Daniel Bickford, M.S. in Meteorology, 1994
Effects of Wind Filling in the Near-Environment of a Numerical Storm Simulation

Yunyun Lu, M.S. in Meteorology, 1994
Large-Scale Wind Field Retrieval Using Kinematic Models and a Reflectivity Conservation Equation

Travis M. Smith, M.S. in Meteorology, 1994
Three Dimensional Visualization of WSR-88D Data

John Krause, M.S. in Meteorology, 1995
Application of the Bratseth Technique to Mesoscale Objective Analysis

Robert D. Duncomb, Jr., M.S. in Meteorology, 1996
Verification of VORTEX '94 Forecasts

David S. Andrus, M.S. in Meteorology, 1996
An Observational and Modeling Study of Two EMVER-93 Gulf of California Surge Events

Andrew C. Wood, M.S. in Meteorology, 1997
Analysis of Supercell Storms on 8-9 June, 1994 in Northeastern Colorado

John J. Mewes, M.S. in Meteorology, 1997
Quantitative Verification of Non-Hydrostatic Model Forecasts of Convective Phenomena

Scott Ellis, M.S. in Meteorology, 1997
Hole-Filling Data Voids in Meteorological Fields

Jeffrey B. Basara, M.S. in Meteorology, 1998
The Relationship Between Soil Moisture Variation Across Oklahoma and the Physical State of the Near-Surface Atmosphere During the Spring of 1997

Christopher M. Stock, M.S. in Meteorology, 1998
Intercomparison of Icing Aviation Impact Variable Forecasts Produced During Realtime Mesoscale Numerical Weather Prediction

Dan Bikos, M.S. in Meteorology, 1998
Simulation of a Great Lakes Lake-Effect Snow Event

Eric Kemp, M.S. in Meteorology, 1999
Comparative Assessments of Mesoscale Aircraft Icing and Turbulence Forecasts from the Advanced Regional Prediction System

Justin Lane, M.S. in Meteorology, 2000
A Climatology of Heat Bursts as Detected by the Oklahoma Mesonet: October 1993 Through September 1998

Derek Arndt, M.S. in Meteorology, 2001
The Lasting Effects of Mesoscale Convective Systems Over Eastern Oklahoma during August 1994

Nicole P. Kurkowski, M.S. in Meteorology, 2002
Assessment of Implementing Satellite-Derived Land Cover Data in the Eta Model

Thomas A. Jones, M.S. in Meteorology, 2002
Verification of the NSSL Mesocyclone Detection Algorithm: A Climatological Perspective

Kevin McGrath, M.S. in Meteorology, 2003
Mesocyclone Climatology of The Southern Great Plains of The United States Using the National Severe Storms Laboratory's Mesocyclone Detection Algorithm

Geoffrey Stano, M.S. in Meteorology, 2003
A Case Study of Convective Initiation on 24 May 2002 during the IHOP Field Experiment

Kodi Nemunaitis, M.S. in Meteorology, 2003
Validation of the North American Land Data Assimilation System (NLDAS) Using Data from Oklahoma Mesonet Sites

Andrew A. Taylor, M.S. in Meteorology, 2003
Adjusting Model Output Statistics (MOS) Temperature Forecasts Using Linear Regression of Observations Against Past Errors

Elaine Godfrey, M.S. in Meteorology, 2003
A Study of the Environment and Intensity of Tornadoes from Quasi-Linear Convective Systems.

Christy Carlson, M.S. in Professional Meteorology, 2004
A 1% Temperatures Climatology for the Continental United States

Robert Weinzapfel, M.S. in Professional Meteorology, 2004
High-Resolution Numerical Simulations of a Flooding Rainfall Event in Houston, Texas Associated with Tropical Storm Allison, June 2001

Suresh Marru, M.S. In Electrical Engineering, 2004
A Grid-Enabled Scientific Workbench for Integrated Predictive Earth System Simulation

Nathan Snook, M.S. In Meteorology, 2006
Sensitivity of Tornadic Thunderstorm and Tornadogenesis in Very High Resolution Numerical Simulations to Variations In Model Microphysical Parameters

Patrick Marsh, M.S. In Meteorology, 2007
Assessment of the Severe Weather Environment in North America Simulated by a Global Climate Model

Brittany Dahl, M.S. In Meteorology, 2014
Sensitivity of Vortex Production to Small Environmental Perturbations in High-Resolution Supercell Simulations

Service on Ph.D. Committees (Degrees Completed, Excluding Own Students)

Eugene McCaul, Ph.D. in Meteorology, 1988
The Dynamics of Simulated Convective Storms in Hurricane Environments

Jose Rodriguez Azara, Ph.D. in Aerospace Engineering, 1988
Substitution Theory for Compressible Flows

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Carlyle Macedo, Ph.D. in Computer Science, 1990
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Juanzhen (Jenny) Sun, Ph.D. in Meteorology, 1992
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Jiyu Zhan, Ph.D. in Physics, 1993
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Litao Deng, Ph.D.in Meteorology, 1993
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Yu-Chieng Liou, Ph.D. in Meteorology, 1995
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Pengfei Zhang, Ph.D. in Meteorology, 1997
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