

Speakers and Panelists
Kansas NSF EPSCoR Statewide Conference
Energy, Climate and the Future: The Role of Kansas
October 4, 2010



Kristin Bowman-James

Kristin Bowman-James is University Distinguished Professor of Chemistry at The University of Kansas and Project Director of the Kansas National Science Foundation Experimental Program to Stimulate Competitive Research (EPSCoR). She received both undergraduate and Ph.D. degrees in Chemistry from Temple University in Philadelphia, after completing two years of research at the Israel Institute of Technology (Technion) in Haifa. In 1975,

Dr. Bowman-James was appointed Assistant Professor in the Chemistry Department at The University of Kansas and rose through the ranks, becoming the first woman to Chair the department from 1995-2001. In 2005 she was appointed statewide Project Director of the Kansas NSF EPSCoR.

Bowman-James' research is in the field of supramolecular chemistry, particularly involving synthetic macrocycles as ligands for both anions and transition metal ions. She is especially recognized for contributions to the field of anion coordination chemistry, which is involved with the design, synthesis, and characterization of receptors for anionic species. Bowman-James is a co-editor of the first book devoted exclusively to anion chemistry, *Supramolecular Chemistry of Anions*, published by Wiley-VCH.

In recognition of Bowman-James' contributions to chemistry, she received the Iota Sigma Pi Award for Professional Excellence (2002), the Kansas Dolph Simons Sr. Award for Research Achievement (2002), and the Midwest Award for Research in Chemistry provided by the St. Louis Section of the American Chemical Society (ACS) (2003). In 2010, she was named a Fellow by the ACS. She was inducted into the Temple University Gallery of Success in 2004. Bowman-James has also been active in promoting diversity. She serves on the Advisory Board of COACH, the Committee on the Advancement of Women Chemists, received the Midwest Regional Award for Diversity presented by the ACS Women Chemists Committee (2002), and co-Chaired the NSF/NIH-sponsored workshop: Chemists, Chemical Engineers, and Materials Scientists with Disabilities, held in Arlington, VA in February, 2009.



Linda O. Mearns

Linda O. Mearns is Director of the Weather and Climate Impacts Assessment Science Program (WCIASP), Head of the Regional Integrated Sciences Collective (RISC) within the Institute for Mathematics Applied to Geosciences (IMAGE), and Senior Scientist at the National Center for Atmospheric Research, Boulder, Colorado.

She served as Director of the Institute for the Study of Society and Environment (ISSE) for three years ending in April 2008. She holds a Ph.D. in Geography/Climatology from UCLA. She has performed research and published mainly in the areas of climate change scenario formation, quantifying uncertainties, and climate change impacts on agro-ecosystems. She has particularly worked extensively with regional climate models. She has most recently published papers on the effect of uncertainty in climate change scenarios on agricultural and economic impacts of climate change, and quantifying uncertainty of regional climate change. Mearns has been an author in the Intergovernmental Panel on Climate Change (IPCC) Assessments in 1995, 2001 and 2007, regarding climate variability, impacts of climate change on agriculture, regional projections of climate change, climate scenarios, and uncertainty in future projections of climate change. For the 2007 Report(s) she was lead author for the

chapter on Regional Projections of Climate Change in Working Group 1 and for the chapter on New Assessment Methods in Working Group 2. For the Fifth Assessment Report she is a lead author of Chapter 21 on Regions in WG2 and a Review Editor for the Introductory Chapter of WG1. She has also been an author on two Synthesis Products of the US Climate Change Science Program.

Mearns leads the multi-agency supported North American Regional Climate Change Assessment Program (NARCCAP), which is providing multiple high-resolution climate change scenarios for the North American impacts community. She is a member of the National Research Council Climate Research Committee (CRC) and Human Dimensions of Global Change (HDGC) Committee, and the NAS Panel on Adaptation as part of the America's Climate Choices Program. She was made a Fellow of the American Meteorological Society in January 2006.



Charles W. Rice

Charles (Chuck) W. Rice is a University Distinguished Professor in the Department of Agronomy at Kansas State University. He received his B.S. in Geography/Natural Environmental Systems from Northern Illinois University, and then earned his M.S. and Ph.D. from the University of Kentucky, in Soil Science and Soil Microbiology, respectively.

He was a member of the U.N. Intergovernmental Panel on Climate Change that received the Nobel Peace Prize in 2007, and he has been selected to again join other leading international scientists for the upcoming Fifth Assessment Report on Climate Change. Rice will serve as one of two lead authors from the U.S. for a chapter on agriculture. In 2009, he was honored by the American Society of Agronomy with the Environmental Quality Research Award for contributions that have enhanced the understanding of the relationship between environmental sciences and agriculture. In 2009, he was also honored with the Irvin Youngberg Award for Applied Science, one of the Higuchi Awards presented by KU. Rice is the current president-elect of the Soil Science Society of America, and will assume the role of president on Jan. 1, 2011.



Judy Wu

Judy Wu, University Distinguished Professor of Physics, University of Kansas, received her Ph.D in Physics from University of Houston in 1993 and joined the faculty of the Physics Department at KU shortly afterward.

Her Thin Film and Nanoscience group in at KU has been actively working at the interface between nanoscience and material science/physics. She specializes in synthesizing nanostructured materials (superconductors, semiconductors, dielectric, etc), fabricating nanoscale devices and characterizing physical properties of samples at microscopic scales. She has authored/coauthored more than 130 scientific publications, 3 book chapters, 6 US patents (4 awarded and 2 pending) and has given more than 80 invited/plenary lectures at national/international conferences and workshops. She was the Meredith Docking Scholar during 2000-2003, which recognizes exceptional young researchers at the KU and received a Kemper Award for Teaching Excellence in 2006.

Wu was elected to the Board of Directors for Applied Superconductivity Conference in 2002 and has served/chaired the Technical Committee and also worked as a lead editor for many years. She has been co-chairing the Materials Task Force on Kansas U.S. Sen. Pat Roberts' Advisory Committee for Science, Technology and the Future since 1999. She has also served on many review panels for DOE, NSF and DOD research programs and has organized/chaired numerous symposia/technical sessions at various national and international conferences.



Dietrich Earnhart

Dietrich Earnhart is a Professor of Economics at the University of Kansas, where he also serves as the Director of the Center for Environmental Policy, which is housed in the Institute for Policy and Social Research (IPSR). Earnhart received his Ph.D. in Economics from the University of Wisconsin – Madison in 1995, after receiving his M.S. in Economics from the same institution in 1991. He received his B.A. in Economics and Political Science from Yale University in 1987, where he graduated summa cum laude with Phi Beta Kappa membership.

At the University of Kansas, he teaches environmental economics, environmental policy analysis, comparative economics, and principles of economics. His research mainly focuses on environmental economic issues that involve legal dimensions, such as optimal strategies for enforcing environmental protection laws and the effects of regulatory factors on corporate environmental performance in the U.S. and Europe. His research also examines the valuation of environmental amenities; in particular, this line of his research combines revealed and stated preference valuation methods, i.e., actual and hypothetical decisions relating to environmental quality. His recent research focuses on farmers' land use decisions and the influences of climate change and emerging biofuel feedstock markets.



Daniel Wildcat

Daniel Wildcat is Professor of American Indian Studies and Dean of Natural and Social Sciences, Haskell Indian Nations University.

He is an accomplished scholar who writes on indigenous knowledge, technology, environment, and education. He received his B.A. in Sociology (with Honors) and also his M.A. in Sociology, from the University of Kansas, and he earned his Ph.D. from the University of Missouri. He completed NEH Fellowships at the Newberry Library, Chicago, and the University of California at Berkeley. He also completed a Mellon Doctoral Fellowship with the American Indian College Fund.

Wildcat is also co-director of the Haskell Environmental Research Studies Center, which he founded with colleagues from the Center for Hazardous Substance Research at Kansas State University. A Yuchi member of the Muscogee Nation of Oklahoma, Dr. Wildcat is the co-author, with Vine Deloria, Jr., of *Power and Place: Indian Education in America* (Fulcrum, 2001), and co-editor, with Steve Pavlik, of *Destroying Dogma: Vine Deloria, Jr., and His Influence on American Society* (Fulcrum, 2006). He also wrote *Red Alert! Saving the Planet with Indigenous Knowledge* (Fulcrum, 2009).

Known for his commitment to environmental defense and cultural diversity, Dr. Wildcat has been honored with the Heart Peace Award by the Kansas City organization, The Future Is Now.



George Crabtree

George Crabtree holds the ranks of Senior Scientist, Distinguished Fellow and Associate Division Director in the Materials Science Division at Argonne National Laboratory. He has won numerous awards for his research, including the Kammerlingh Onnes Prize in 2003 for his work on the physics of vortices in high temperature superconductors. This prestigious prize is awarded once every three years; Dr. Crabtree is its second recipient. He has won the University of Chicago Award for Distinguished Performance at Argonne

twice, and the U.S. Department of Energy's Award for Outstanding Scientific Accomplishment in Solid State Physics four times, a notable accomplishment. He has an R&D 100 Award for his pioneering development of Magnetic Flux Imaging Systems. He is a Fellow of the American Physical Society, a charter member of the Institute for Scientific Information's Highly Cited Researchers in Physics, and a Member of the U.S. National Academy of Sciences.

Dr. Crabtree has served as Chairman of the Division of Condensed Matter of the American Physical Society, as a Founding Editor of the scientific journal *Physica C*, as Divisional Associate Editor of *Physical Review Letters*, as Chair of the Advisory Committee for the National Magnet Laboratory in Tallahassee, FL, and as Editor of several review issues of *Physica C* devoted to superconductivity. He has published more than 350 papers in leading scientific journals, has collected over 14,000 career citations, and has given approximately 100 invited talks at national and international scientific conferences. His research interests include materials science, sustainable energy, nanoscale superconductors and magnets, vortex matter in superconductors, highly correlated electrons in metals. He has led workshops for the Department of Energy on hydrogen, solar energy, superconductivity, and materials under extreme environments, and has co-chaired the Undersecretary of Energy's assessment of DOE's Applied Energy Programs. He has testified before the U.S. Congress on the hydrogen economy and on meeting sustainable energy challenges.



Uma Venkateswaran

Uma Venkateswaran, EPSCoR Program Officer at the NSF, received her Ph.D. in Experimental Condensed Matter Physics in 1985 from the University of Missouri-Columbia. During 1985-1991, she was a Guest Scientist at the Max Planck Institute for Solid State Physics, Stuttgart, Germany, and a Research Associate at the State University of New York at Buffalo. In 1991, she joined the Physics Department at Oakland University in Rochester, Michigan as a faculty member.

Dr. Venkateswaran has taught several physics courses and carried out research in the area of optical properties of solids using spectroscopic and high pressure techniques. She has published more than 70 articles and made over 150 presentations at national and international conferences and institutions in the fields of semiconductors, ferroelectric oxides, fullerenes, and carbon nanotubes.

She was a Program Director in the Division of Materials Research, in the Condensed Matter Physics program and in the Office of Special Programs at the National Science Foundation before joining the EPSCoR Office in 2009.

As EPSCoR Program Officer, her responsibilities include the Research Infrastructure Improvement Program: Inter-Campus and Intra-Campus Cyber Connectivity (RII C2); the Research Infrastructure Improvement Program: Track-1 (RII Track-1); and Research Infrastructure Improvement Program: Track-2 (RII Track-2).



John Harrington, Jr.

John Harrington, Jr., is a Professor of Geography at Kansas State University. John arrived at KSU in 1994 after serving on the faculty at the University of Oklahoma, the University of Nebraska, New Mexico State University, and Indiana State University. He earned all three of his academic degrees in geography, with the Ph.D. coming from Michigan State in 1980.

Harrington's research interests lie in the areas of climatology, global change, and the application of GIScience to natural resource management. His interests in climate include the climate of the Great Plains and climate variability. Global change interests involve water and land resource availability for agriculture. In remote sensing and GIS, he has worked with the USDA Agriculture Research Service (ARS) National Agricultural Water Quality Laboratory on the scientific relationships behind the use of satellite imagery to estimate surface water quality. During the Sahelian drought in the late 1980s, Dr. Harrington worked with the Livestock Ministry in Niger to help set up a capability to map the annual grasslands. Dr. Harrington's team established the first operational GIS in Niger.

Since coming to Kansas, Harrington has been an active contributor to the Natural Resources and Environmental Sciences Secondary Major at K-State, served as department head in geography for six years, and served for 3.5 years as the Chair of the All-University GIScience Steering Committee. He has contributed to GCLP (Global Change in Local Places), HERO (Human Environment Regional Observatory), and ecological forecasting projects, and he is currently helping with the Impacts portion of the NSF EPSCoR effort on Climate Change.



J. Christopher Brown

J. Christopher Brown is an Associate Professor of Geography and Environmental Studies at the University of Kansas. He is also Director of the Environmental Studies Program.

His work spans the areas of ecology and biogeography, political ecology, and moral geography. Current projects include studies of environmental governance along the mechanized agricultural frontier of Amazonia; social movements, civil society, and the environment; and farmers' land-use decisions vis-à-vis changes in the bio-fuel economy in Brazil and the US Great Plains.

Among his publications are articles in the *Journal of Biogeography*, *Comparative Political Studies*, *Latin American Research Review*, *Political Geography*, *Progress in Development Studies*, *Ambio*, the *Professional Geographer*, and *Geoforum*.

Brown received his bachelor's and master's degrees from KU, in Biology and Latin American Studies, respectively. He earned his Ph.D. in geography from the University of California, Los Angeles.



Francis D'Souza

Francis D'Souza, Professor of Analytical and Supramolecular Chemistry, Wichita State University, received his BS and MS from Mysore University, Mysore, India and a Ph.D. from the Indian Institute of Science, Bangalore, India in 1992 under the direction of V. Krishnan.

After completing post-doctoral work at the University of Houston under Karl Kadish and Universite de Bourgogne, Dijon, France, under Roger Guilard, he joined the faculty of Wichita State University in 1994.

Dr. D'Souza's research is aimed towards developing molecular recognition-directed supramolecular compounds for various chemical/biochemical applications, especially supramolecular porphyrin/phthalocyanine and carbon nanomaterial systems for electron transfer, light energy harvesting and sensor applications. Development of biomimetic supramolecular solar cells is a specialty of his research group.

He has published nearly 200 research papers, 5 book chapters and over 200 conference presentations including several key note and plenary presentations. His research is supported by NSF, NSF-EPSCoR, NIH, ACS-PRF, and NATO grants. He has won several awards/honors including National Merit Scholarship, University Grants Commission Research Fellow, University Board of Trustees Young Faculty Scholar Award, Excellence in Research Award, Japan Society of Promotion of Science (JSPS) Professorship, and Fellow of the Electrochemical Society (ECS).

Dr. D'Souza is an associate editor of the *Journal of Porphyrins and Phthalocyanines* and on the editorial board of few other journals. He has served as Secretary, Vice-Chair and Chair of the Fullerene (FNCN) Division (1999-2008) and Board of Directors of the Electrochemical Society. He has been instrumental in establishing the Smalley Research Award and Young Investigator Award of the FNCN Division of ECS and in seeking monies to establish endowments.



Johannes Feddema

Johannes Feddema, Professor of Geography at the University of Kansas, is a climate scientist investigating the interactions between human activities at the Earth's surface and climate.

He obtained a B.A. degree in Biology and Geography, an M.S. degree in Geography and a Ph.D. degree in Climatology from the University of Delaware.

Early in his career, Feddema used water balance models to simulate climate impacts on water resources, and studied the climate impacts of land-use/land-cover change and human induced soil degradation. To better understand the feedbacks in the coupled human climate system he began to conduct similar experiments in Global Climate Models (GCMs). He is now working to create models and databases to assess the impacts of anthropogenic land cover change and urbanization in the National Center for Atmospheric Research (NCAR) Community Earth System Model (CESM).

Together with Gordon Bonan and Keith Oleson, they have incorporated an urban canyon model into the Community Land Model (CLM) component of CESM, are conducting a variety of experiments to better understand climate impacts on urban areas, and to evaluate the potential impacts of policies on urban climates.

He has published in a variety of journals including *Climate Research*, *Climate Dynamics*, *Climatic Change* and *Science* and was a contributing author to the third and fourth IPCC reports. Since 2006 he has held an Affiliate Scientist appointment with NCAR and was recently appointed to the Kansas Energy and Environmental Policy advisory group by the Governor of Kansas.



Val Smith

Val Smith, Professor of Ecology and Evolutionary Biology at the University of Kansas, earned his bachelor's degree in biology at KU and then earned his master's degree (Rutgers University) and Ph.D. (University of Minnesota) in Ecology.

He focuses his research on the relationships between resource supplies and the structure and function of biological systems. His primary area of expertise is in the area of phytoplankton ecology, and he is internationally recognized for more than three decades of research on the empirical modeling of water quality in freshwater and coastal marine ecosystems worldwide.

He has extensive experience in the quantitative comparative analysis of both aquatic and terrestrial ecosystems, and strong interests in the mechanisms that generate and maintain biological diversity. He is also interested in metabolic ecology, and the mechanisms that regulate the biogeochemical cycles of carbon, nitrogen, and phosphorus.

Smith recently expanded his research into the area of disease ecology, and is actively pursuing both empirical and experimental investigations of the relationships between host nutrition and the outcome of infectious disease in both plants and animals. In addition, he is actively involved in KU's Feedstock to Tailpipe Initiative (FTT), where he and the other members of the FTT algal production team seek to produce renewable, cost-effective biofuels from algae produced in wastewater-fed, outdoor bioreactors.



Joane Nagel

Joane Nagel is University Distinguished Professor of Sociology at the University of Kansas. She has served as Chair of the Sociology Department and Associate Dean of Social Sciences in the College of Liberal Arts at KU, and as Sociology Program Director at the National Science Foundation from 2002-2004. Her bachelor's degree (in English and Speech) and Master's degree (in Sociology) are from Bowling Green State University; and she earned her Ph.D in Sociology from Stanford University. She joined the KU faculty as an Assistant Professor in 1977 and has spent her entire academic career at KU, except for a year and a half as a Fulbright Senior Lecturer at the University of Liberia in West Africa and the two years at the NSF.

Nagel's research focuses on the politics of ethnicity and sexuality, and her current research is on the race, class, gender and sexual dimensions of global climate change. She is co-director with Dan Wildcat of the Haskell Environmental Research Studies Center and is also co-PI with Wildcat on the Climate Change in Indigenous Communities project. Nagel currently directs the NSF IGERT, C-Change (Climate Change, Humans, and Nature in the Global Environment) at KU.

Nagel teaches courses in the sociology of deviance, sociology of nationalism, ethnicity and sexuality, social research methods and design, and she has received several teaching awards including an Outstanding Mentorship award, a Kemper Fellowship for Teaching Excellence and a Louise Byrd Graduate Educator's Award.