



15th Annual Kentucky EPSCoR Conference
Experimental Program to Stimulate Competitive Research
Science's Grand Challenges

ABOUT THE PLENARY SPEAKERS



Nancy C. Martin
Chair,
KY Statewide EPSCoR Committee

Dr. Martin is a Professor of Biochemistry and Molecular Biology at the University of Louisville. Throughout her career, she has applied state of the art molecular biological techniques to make distinguished contributions in the areas of mitochondrial biogenesis, RNA enzymology and protein targeting. She holds an honorary degree from the University of Umea and has been elected a Fellow by the American Association for the Advancement of Science.

She served as Senior Vice President for Research at the University of Louisville from 1996 to 2006 and oversaw a tremendous expansion of research infrastructure and a more than four fold expansion of extramural funding. She implemented a number of new policies and procedures supportive of research and technology transfer, including creation of a Technology Transfer Office. In addition to her current faculty responsibilities, she serves on the ORAU board, the board of the Northern Kentucky University Research Foundation, Pradama (a biotech startup), the leadership team of the Kentucky Girls Collaborative in STEM (science, technology, engineering and math), on the Kentucky state-wide STEM taskforce and chairs the Kentucky Statewide EPSCoR Committee.



F. Richard Kurzynske
Director,
Kentucky EPSCoR Program

Dr. Kurzynske is the Director of Kentucky's Statewide EPSCoR Program. He shares this position part-time with his other responsibilities as a principal partner of the Cyrus Partnership, LLC, and Brigadier Development, LLC, business investment groups. Rick's background includes a decade in Chicago as a senior manager with a natural gas energy consortium that principally invested in the development and commercialization of energy related technologies

Rick moved to Lexington in 1992 when he became an officer of the Mason & Hanger Corporation, a Forbes 500 Company, which prior to its sale, principally provided technical and manufacturing services to the Federal government. Rick has been responsible for two high-tech startup companies, and has been an officer/director of more than 12 companies. He has an MBA from the Keller Graduate School of Business, and a Ph.D. in Civil Engineering (energy and environmental focus) from the University of Tennessee – Knoxville.



Randy Atkins

***Senior Program Officer for Media/Public Relations,
National Academy of Engineering, The U.S. National Academies***

Randy Atkins is the senior media/public relations officer for the U.S. National Academy of Engineering (NAE), where he assists journalists with coverage of stories about engineers and engineering. He led a high-profile effort, involving a blue-ribbon committee of leading technological thinkers chaired by former U.S. Secretary of Defense William J. Perry, to identify the 21st Century's "Grand Challenges for Engineering" -- ideas that are having wide-ranging impact.

Since 2003, Randy has been doing weekly reports called "Engineering Innovation" on the Washington, D.C. region's most listened-to radio station, WTOP (FM), an all-news format CBS affiliate, and on Federal News Radio, WFED (AM), for which he recently won the IEEE-USA Award for Distinguished Literary Contributions Furthering the Public Understanding of the Profession and the Society of American Military Engineers' Award for Journalism. He was involved in the conception and design of a nationwide workshop series called "News & Terrorism: Communicating in a Crisis" and is the project leader, working in collaboration with the U.S. Department of Homeland Security and the Radio Television Digital News Foundation.

Before joining the NAE, Randy worked as senior science writer at the American Chemical Society and senior media relations coordinator for the American Physical Society. Previously, he was a producer and reporter of the nationally-distributed Inside Science TV News and an on-air television reporter for NBC network affiliate WVVA-TV. Early in his career, Randy worked as a microbiologist in laboratories at the National Institutes of Health and the U.S. Department of Agriculture. He attended Bucknell University and the University of Florida and holds a degree in microbiology.



John A. Turner

***Research Fellow, Energy Sciences
National Renewable Energy Laboratory***

Dr. Turner is a Research Fellow at the National Renewable Energy Laboratory. He received his B.S. degree from Idaho State University, his Ph.D. from Colorado State University, and completed a postdoctoral appointment at the California Institute of Technology before joining the Laboratory (then the Solar Energy Research Institute) in 1979. His research is primarily concerned with enabling technologies for the implementation of hydrogen systems into the energy infrastructure. This includes direct conversion (photoelectrolysis) systems for hydrogen production from sunlight and water, materials for advanced fuel cell membranes, and corrosion protection for fuel cell metal bipolar plates. Other work involves the study of electrode materials for high energy density lithium batteries and fundamental processes of charge transfer at semiconductor electrodes.

He has twice received the Midwestern Research Institute President's Award for Exceptional Performance in Research. In addition, he has received the Hydrogen Technical Advisory Panel award for Research Excellence, an Idaho State University Outstanding Achievement Award (2006), and five Outstanding Mentor Awards from the US Department of Energy for his work with undergraduate students. He is the author or co-author of over 120 peer-reviewed publications in the areas of photoelectrochemistry, fuel cells, batteries, general electrochemistry and analytical chemistry. He is also a co-Editor of the Journal of Renewable and Sustainable Energy.



Michael A. Matthews
Program Manager/Analyst, Meteorologist
U.S. Dept of Homeland Security
Science & Technology Directorate

Michael Matthews has been a member of DHS Science and Technology (S&T) Directorate for the past five and a half years. Mr. Matthews has worked as a program analyst/manager in the Infrastructure and Geophysical Division where he manages two programs— the Southeast Region Research Initiative and the Kentucky Critical Infrastructure Protection Program. These programs cover much of the southeastern U.S. and focus on preparedness, response, and recovery as well as critical infrastructure protection and resilience.

Prior to Mr. Matthews's role in Homeland Security, he operated in several leadership positions in the National Weather Service as a meteorologist in charge of two National Weather Service offices. Prior to this, he was the weather service's National Program Manager for all public products and services and is credited for modernizing the highly visible suite of national public products and services. Before coming to Science and Technology, Mr. Matthews worked directly for the National Oceanic and Atmospheric Administration's Under Secretary for two years as the Executive Director of the Under Secretary's Decision Coordination and Program Coordination Office, where he managed and directed day-to-day front office operations in a fast paced and politically charged environment.

Mr. Matthews holds degrees in Meteorology and Business Administration, and obtained a Masters of Public Administration.



Albert H. Teich
Director of Science & Policy Programs,
American Association for the Advancement of Science

Dr. Teich is director of Science & Policy Programs at AAAS, a position he has held since 1990. He is responsible for AAAS programs in science and technology policy and serves as a key spokesman for AAAS on science policy issues.

Prior to joining the AAAS staff in 1980, he held teaching, research, and administrative positions at George Washington University, the State University of New York, and Syracuse University. He is the author of numerous articles and editor of several books, including *Technology and the Future*, a widely used textbook on technology and society now in its 11th edition.

Dr. Teich was elected a Fellow of AAAS in 1986. He is the recipient of the 2004 award for Achievement in Science Policy from the Washington Academy of Sciences and served as president of the Academy in 2008-09. He holds a B.S. degree in physics and a Ph.D. in political science, both from M.I.T



John W. D. Connolly
Director-Computational Sciences, University of Kentucky

Project Director-Kentucky NSF EPSCoR

www.kynsfepscor.org

Dr. Connolly is the Director of Center for Computational Sciences and Professor of Physics and Astronomy at the University of Kentucky. He is also Project Director for the Kentucky NSF EPSCoR Program. John has over 30 years of teaching and consulting experience. He's had over 90 technical publications in mathematical physics, computational methods, materials science, molecular physics and theoretical chemistry.



Eric A. Grulke
*Associate Dean for Research and Graduate Studies in the
College of Engineering, University of Kentucky*

Chair-Kentucky DOE EPSCoR

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Dr. Grulke has been the Associate Dean for Research and Graduate Studies in the College of Engineering at the University of Kentucky since 2003. In addition, he is the Director of the Electron Microscope Center. He joined the University of Kentucky as chair of the Department of Chemical and Materials Engineering in 1993. Dr. Grulke started an academic career at Michigan State University (1978), including three years as the College of Engineering's Associate Dean for Research. He worked in new process R&D for BFGoodrich Chemical from 1975-78. Dr. Grulke received chemical engineering degrees from The Ohio State University (BS (1971), MS (1972) and Ph.D. (1975)).

Dr. Grulke also served as a Congressional Engineering Fellow in the office of Senator Carl Levin, Michigan. He is the author of more than 130 articles in leading technology journals and has mentored students to forty graduate degrees. He is a senior U.S. editor of Polymer Handbook, now in its fourth edition. Dr. Grulke has been awarded three U.S. patents and is a registered professional engineer in the states of Ohio and Michigan.

Dr. Grulke is a current member of the Board of Directors, Engineering Research Council, American Society of Engineering Educators, serving as Secretary-Treasurer. Since 2005, he has served as the Chair of the Kentucky DOE-EPSCOR statewide committee. Dr. Grulke is also a member of the U.S. Technical Advisory Group on Standards for Nanotechnologies. He has been an evaluator for ABET since 2000, a proposal reviewer for NSF, DOE, NASA and the USDA and a manuscript reviewer for more than 20 journals.

Dr. Grulke holds professional memberships in AIChE, ACS, ASEE, MRS, and the Federation of Societies for Coatings Technology. Dr. Grulke's research interests involve applications of nanoparticles in fluids and polymers, and nanoparticle toxicity.



Suzanne Weaver Smith
Donald and Gertrude Lester Professor of Mechanical Engineering, University of Kentucky

Chair – Kentucky NASA EPSCoR
Director – Kentucky Space Grant Consortium
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Dr. Suzanne Weaver Smith joined the UK faculty in 1990. Her 20 years working in the aerospace industry started with modeling and testing the Fine Guidance Electronics of the Hubble Space Telescope at Harris Corporation in 1980. She has numerous NASA Center affiliations, including four summers at NASA Langley.

Suzanne received her PhD at Virginia Tech for research on vibration-based damage detection for structures such as the International Space Station, and her MS and BS degrees from Clemson University. She has collaborated on research projects and SBIRs with Boeing, Lockheed, ILC Dover, L-3 Communications, NextGen Aeronautics and others in the aerospace industry.

She was the lead advisor (with 7 other UK faculty) on the BIG BLUE Mars Airplane, which involved over 300 university students and over 400 low-altitude flight tests that demonstrated the feasibility of inflatable wings for extraterrestrial exploration. Technical developments of BIG BLUE have since been applied to DOD programs.

Dr. Smith is currently developing three modules for the NASA Space Systems Engineering Course (distributed nationwide). She is an award-winning researcher and educator, with recognition as an NSF Young Investigator and two-time winner of the UK CoE Henry Mason Lutes Award for Engineering Education.



Janet K. Lumpp
Professor of Electrical and Computer Engineering, University of Kentucky

Co-Chair – Kentucky NASA EPSCoR
Assistant Director – Kentucky Space Grant Consortium

Dr. Lumpp has been a professor of Electrical and Computer Engineering (ECE) at the University of Kentucky UK since 1993. She received her PhD from the University of Iowa, and earned her BS and MS degrees in Metallurgical and Materials Engineering from Purdue University.

Her research and teaching activities span a wide range of topics from lasers and microelectronics to K-12 education and carbon nanotubes. Dr. Lumpp conceived, developed and leads the Kentucky Electronics Education Project (KEEP), a program that uses microelectronics as a theme to connect core concepts in science, technology, engineering and math (STEM) education. She also leads the Education and Public Outreach efforts for Kentucky Space, including high-altitude balloon-launch workshops for K-12 teachers.

Dr. Lumpp established the Laser Processing Laboratory in ECE at UK and oversees the electronic assembly facilities. She recently concluded a four year research contract from the Army Research Lab on Advanced Carbon Nanotechnology with UK colleagues and collaborators at four other institutions. Dr. Lumpp has been the principal investigator on several KY NASA EPSCoR grants, KSGC awards and fellowships. She also has a strong funding record with the National Science Foundation through a Graduate Fellowship, Research Initiation Award, CAREER Award and as a faculty participant in the two NSF IGERT graduate training grants awarded to the University of Kentucky.