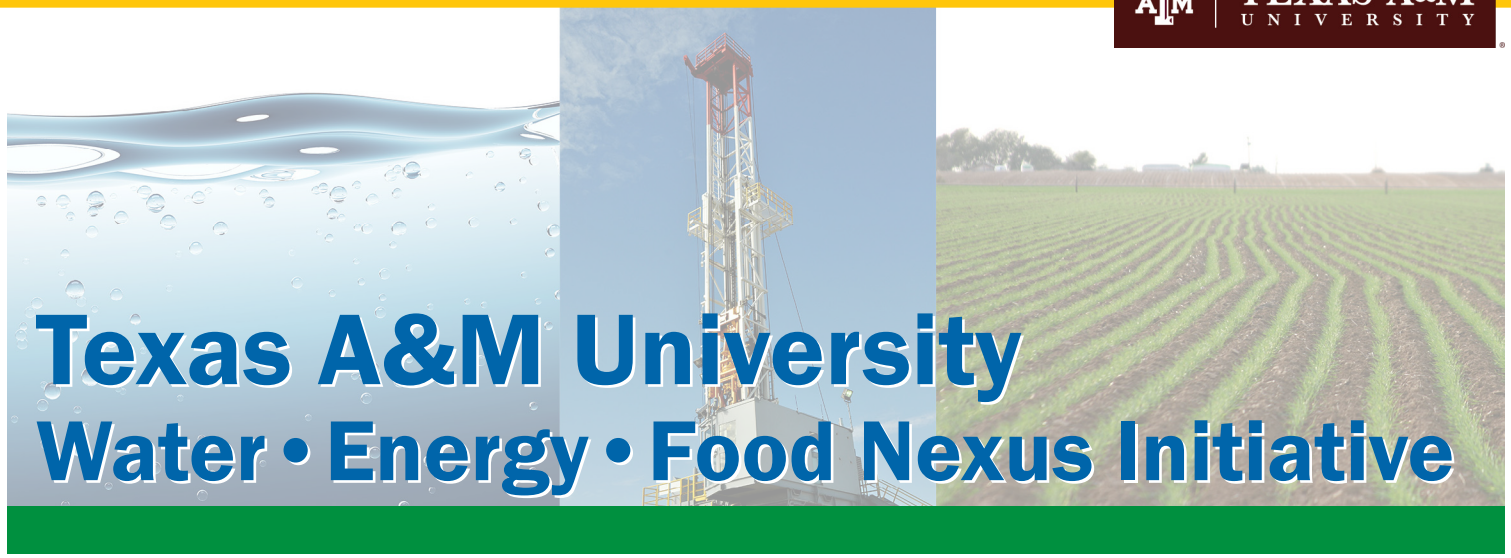

Texas A&M University
Water • Energy • Food Nexus Initiative

The interconnection of water, energy and food resources is highly complex and the availability of these resources is increasingly stressed by climatic, social, political, economic, demographic, technologic and other pressures. Sustainably addressing these challenges requires a better understanding of the nexus formed by the inter-connections between the resources and will lead to a more equitable allocation and improved management of them.

The Texas A&M University Water-Energy-Food Nexus Initiative is composed of Texas A&M University scientists who are committed to finding solutions to the nexus grand challenges. These scientists and educators will make up multidisciplinary teams that share their skills, knowledge and scientific abilities to produce the necessary analytics, grounded in state-of-the-art science, and able to provide a platform to facilitate inclusive stakeholder dialogues at local, regional and global levels.

TEXAS A&M UNIVERSITY
WEF NEXUS INITIATIVE

This informed dialogue will enable a better understanding of the full life-cycle footprints of food, water and energy resources, their products and services. This dialogue will enable improved, science-based, management of these critical resources and will assist policy makers in planning effectively to address the anticipated shortfalls in these primary resources in a changing world.

Initiative's Goals

- Facilitate science-based policy
- Raise awareness among academe, society, government and industry for holistic approaches to address grand challenges and sustainable development goals
- Identify and respond to national and global opportunities in research, education, outreach and policy implementation
- Assist in the effective management of primary resources

Texas A&M Water-Energy-Food Nexus Forum

In October, 2015 the Texas A&M University Water-Energy-Food Nexus Initiative held a forum with more than 200 Texas A&M scientists attending. The scientists broke up into five groups and examined five areas of the nexus:

- Energy–Water
- Water–Food
- Food–Energy
- Data and Analytics
- Resource Allocation/ Management/Trade-offs

Forum Outcomes

- Expand intellectual capacity of Nexus dialogue
- Demonstrate holistic solutions to water security in Texas
- Engage stakeholders (at home and abroad) in on-going activities and future plans

TAMU WEF Nexus Initiative Leadership Team

- **Rabi H. Mohtar, Texas A&M Engineering Experiment Station Research Professor, Biological and Agricultural Engineering and Civil Engineering, Dwight Look College of Engineering**, leads the WEF Nexus research group at Texas A&M. A hydrologist by training, Mohtar's professional interests have moved toward understanding the interrelationships of the Nexus and developing quantitative tools to assess sustainable resource allocation tradeoffs and empower dialogue between stakeholders, policymakers and science in an effort to ensure long term resilience and sustainable management of resources.
- **Jack Baldauf, Executive Associate Dean, Associate Dean for Research, Professor, College of Geosciences**, works to understand climate change by translating global processes to local consequences and mitigations. Emphasizing education of educators, students, policymakers and decision-makers, Baldauf's research focuses on Neogene Pacific paleoceanography and understanding variation in production, export productivity and dissolution and the relationship to climate change and the CO2 cycle.
- **Christodoulos A. Floudas, Director, Texas A&M Energy Institute, Professor, Chemical Engineering**, is an authority in mathematical modeling and optimization of complex systems. His research interests include multi-scale systems engineering for energy and the environment, process operations, local and global optimization, and computational chemistry and molecular biology.
- **Bruce McCarl, Regents Professor and Distinguished Professor, Agricultural Economics,** has focused his research efforts largely on policy analysis (mainly in climate change, climate change mitigation, ENSO analysis and Edwards Aquifer water) and the proper application of quantitative methods to such analyses. He teaches graduate courses in applied mathematical programming and applied risk analysis.
- **Elsa Murano, Director, Norman Borlaug Institute for International Agriculture and Professor, Department of Nutrition and Food Science**, conducts research and teaches food safety. She currently serves as a member of the Board for International Food and Agriculture Development, a presidentially-appointed position that advises the Administrator of the U.S. Agency for International Development within the State Department.
- **Arnold Vedlitz, Executive Associate Dean, Director Institute for Science, Technology & Public Policy, Bush School of Government and Public Service**, works in the area of natural resources management and decision-making, politics, science and technology policy as these relate to climate change. He research includes funding by National Science Foundation, the Department of Homeland Security, the Environmental Protection Agency, the National Oceanic and Atmospheric Administration, the Agency for Healthcare Research and Quality, the Texas Commission on Environmental Quality, and the Texas Department of Transportation.
- **John Tracy, Director, Texas Water Resources Institute**, as a civil engineer, Tracy has extensive experience relating to water resources management. His recent work has focused on the development and integration of research programs to effectively inform water resources management and policy.

Partners

- Dwight Look College of Engineering
- College of Agriculture and Life Sciences
- College of Geosciences
- George Bush School of Government and Public Service
- Texas A&M Engineering Experiment Station
- Texas A&M AgriLife Research
- Texas A&M University System

Join our Community of Practice
Share your research, sponsor a project, or to learn more:

TAMU WEF Nexus Initiative
306 Scoates Hall
College Station, TX 77843-2117

Tel. 979.458.9886; Fax. 979.862.3442
www.wefnexusinitiative.tamu.edu
wefnexus@tamu.edu