

2018 China-US Joint Eco-environmental Symposium

Advances in Critical Needs for the Nexus of Food, Energy, and Water Systems

October 24-28, 2018

Table of Content

Introduction of Conference.....	1
Introduction of Host Institutions.....	2
Organizers and Committee.....	10
Conference Venue.....	14
Meeting Agenda.....	15





Introduction of Conference

INTRODUCTION OF CONFERENCE

Climate change, urbanization, population growth, and accelerating consumption of energy and natural resources bring great challenges for regional and global sustainable development. It is becoming imperative how society can best integrate across the natural and built environments to provide a growing demand for food, energy and water while maintaining key ecosystem functions and services. The U.S. and China have the largest economies and drive the rates and patterns of global resource utilization, energy consumption, and environmental degradation. The US and China share responsibility for developing realistic goals, effective strategies, and practical protocols for the best solutions for global energy, climate, food, and environmental problems that transform the production and use of limited energy and ecosystem resources. Sustainable development is dependent on these two nations exchanging perspectives to develop a joint agenda for international solutions to future needs, and lead the world in implementing innovative technologies. China and the U.S. share important experiences in tackling environmental problems encountered in the history of economic and social development. A mutual lesson-learning between the U.S. and China at the levels of science, technology, and policy could help both countries and other nations to avoid risks and create opportunities for developing joint efforts to tackle uncertain challenges. US-China collaboration can create new economic opportunities through technology development, transfer and commercialization within the goals of clean and sustainable development—a realization of a series of bilateral environment and energy agreements signed at the annual meetings of the US-China Strategic Economic Dialogue (SED).

SYMPOSIUM GOALS AND OBJECTIVES

The symposium aims to promote a crosscutting research coordination network, which was established in 2017 between China and the U.S., with the goal to facility collaborative research at the nexus of food, energy and water systems (FEWS). The conference will address potential solutions to an array of FEWS challenges, promote international team development, plan research initiatives and proposals, and stimulate forward-looking education and workforce development. Attendees will have the opportunity to engage industry and government leaders and other stakeholders for developing problem-based transdisciplinary research initiatives, which may be jointly funded by the NSF and the NSFC.

INTRODUCTION OF HOST INSTITUTIONS

Nanjing University

Founded in 1902, Nanjing University is one of the oldest and most prestigious institutions of higher learning in China. With the motto of 'Sincerity with Aspiration, Perseverance and Integrity,' this university carries the spirit of constant striving for educational and academic excellence. In the past 116 years, Nanjing University has cultivated a great number of talents, contributing greatly to the national prosperity and the revitalization of the Chinese nation.

Through recent years' development, this century-old university has gained new and vital vigor while meeting unprecedented historical challenges and opportunities. Currently we have three campuses: Gulou in the city center, Pukou on the northern bank of the Yangtze River, and Xianlin International Campus in the east suburb of the city. As a key comprehensive university with an array of outstanding faculty members, it has enjoyed coordinated development in humanities, social sciences, natural sciences, technological sciences, life sciences, modern engineering and management and so on. In the meantime, it has continuously improved quality of teaching, research, social service and all other areas. According to different rankings and in terms of various indexes of academic strength and comprehensive academic performance, Nanjing University is always one of the leading universities in China.

In 1999 and 2006, Nanjing University was chosen in the first group of a limited number of high-level research universities for prioritized support by the Central Government of China under the '985 Project'. Our mission is to build this university into a world renowned institution enjoying an international reputation and maintaining our own academic characteristics. We aim to be a cradle for preparing innovative talents for the future, a frontier for activities giving insight to the unknown world, seeking truth, providing scientific grounds for solving important problems encountered by humanity; we aim to be an important source of innovation and technology transfer and a bridge for cooperation and exchange between different cultures and civilizations. These beliefs well fit the objectives of JRCEEC, and now Nanjing University plays a leading role in the program.

School of the Environment at Nanjing University

As one of the earliest institutions dedicating to environmental education and research in China, School of the Environment at Nanjing University is a leading player in environmental research in China. During the past 5 years, the school has been involved in over 500 projects from National Water Pollution Control and Treatment Major Project, national 863 Program, national 973 Program, and National Science Foundation of China, totaling more than ¥500 million. Researchers in the school published >1000 SCI papers (95 in ES&T and other top journals) and obtained 345



Introduction of Host Institutions

national patents and 32 international patents. Over the past 10 years, the school received 8 honors from National Natural Science Awards, State Technological Invention Award, and National Science and Technology Progress Award, and more than 10 other awards from both national and local governments.

The School of the Environment consists of three departments: Department of Environmental Science, Department of Environmental Engineering, and Department of Environmental Planning and Management. It has established cooperation with many international universities, organizations and enterprises. The school has 12 English courses for undergraduate and graduate students, and offers several English short courses in summer. In 2015, collaborating with >10 top universities and research institutes, the school established the International Institute for Environmental Studies, further expanding its role in international stage.

The school has established >10 research platforms, including State Key Laboratory of Pollution Control and Resource Reuse, National Engineering Research Center for Organic Pollution Control and Resource Reuse, National Experimental Teaching Center for Environmental Science and Engineering, and Jiangsu Province Industrial Technology Research Institute for Water Pollution Control and Resource Reuse. To meet the needs of environmental protection in China, the school has developed an integrated innovative chain of 'basic education - fundamental research - technical development - serving the society'.

Yixing Environmental Research Institute of Nanjing University

Yixing Environmental Research Institute of Nanjing University is a research-oriented institute established by Nanjing University, Yixing municipal government and Yixing Industrial Park for Environmental Science & Technology. The objective of the institute is to provide a platform for innovative technology development, talent training and networking information communication.

In the past five years, the institute has undertaken several major scientific projects in the field of water pollution control and resource reuse funded by national 863 Program, 973 Program and Sci-Tech Supporting Program. Meanwhile, it has authorized 112 National Invention Patents, 18 American/European Union Invention Patents, and 10 Software Copyrights and presided over the preparation of 5 International Standards, 7 National Standards, 3 Industry Standards, and 12 Group Standards Projects, etc.

China Yixing Industrial Park for Environmental Science & Technology

China Yixing Industrial Park for Environmental Science & Technology (ES&TP) is the national Hi-Tech Industrial Development Zone which was approved by State Council in 1992, is also the unique National Hi-Tech Industrial Development Zone features developing environmental protection industry. Through the unique charm of landscape in south Yangzi and rich culture of environmental protection, ES&TP habits

Introduction of Host Institutions

unique brand influence. Five major areas of "Water, Gas, Sound, Solid, Instrument" go hand in hand, and ES&TP continue to strengthen the cooperation with more than 20 countries and regions including the United States, Japan, Germany, Netherlands, Finland, Singapore, Hong Kong, Taiwan, etc., to form the close research cooperation with more than 80 colleges and universities, such as Nanjing University, Harbin Institute of Technology and Tsinghua University, to establish the institute of environmental technology, R&D centers and industrial base. A modern industrial park which integrates R&D, manufacturing, engineering, construction, operations services take shape. The future ES&TP will be a business new town which has intensive headquarters economy, and active technical finance, a vitality new town which combines industry and town, integrates cultural and ecology, a capital of Chinese environmental industry which attacks global attention and has core competitiveness.

State Key Laboratory of Pollution Control and Resource Reuse

Located in the Yangtze River delta, the State Key Laboratory of Pollution Control and Resource Reuse is based on environmental science and engineering disciplines of Tongji University and Nanjing University, which covers 3 state key disciplines and 7 doctoral programs in environmental engineering, environmental science and municipal engineering. The main research areas of the laboratory include: (1) Environmental behavior and ecological effects of pollutants; (2) Theory and technology of water pollution control; (3) Solid waste treatment and resource reuse; (4) Environmental remediation and watershed pollution control.

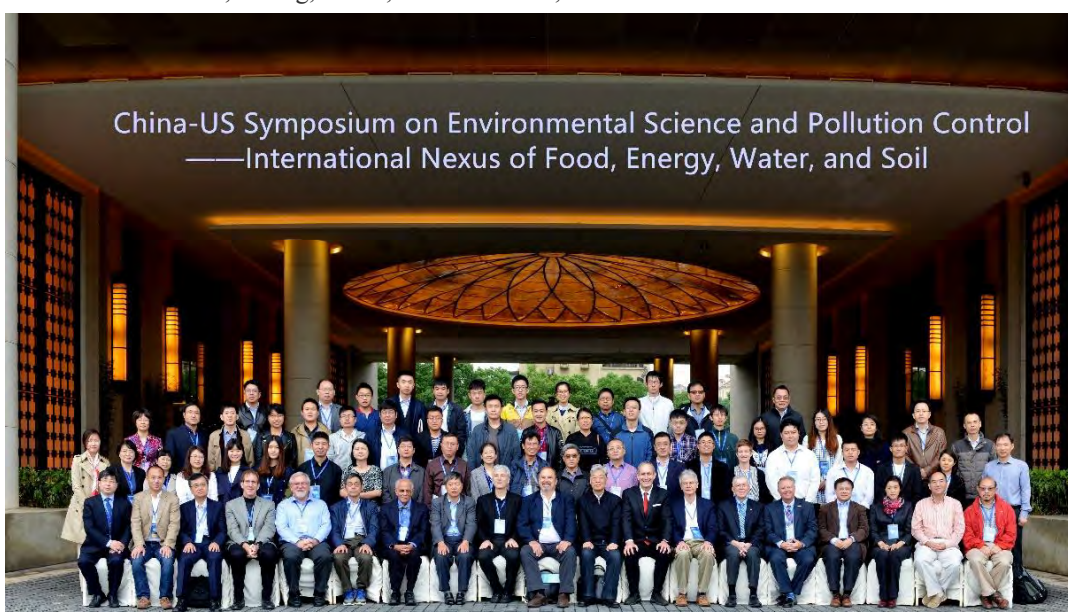
JRCEEC WORKSHOPS

As part of its mission "to promote research collaboration, academic exchange, student education, and technology training and transfer," the China-US Joint Center holds annual workshops and periodic topical workshops. The links below provide additional information on the workshops held to date:

- [2017 Annual Workshop](#) - "The Food-Energy-Water Systems (FEWS) Research Network," Franklin Marriott Cool Springs, Franklin, Tennessee, USA, December 7-9, 2017



- [2016 Annual Workshop](#) - "International Nexus of Food, Energy, Water, and Soil," Howard Johnson Garden Plaza Hotel, Yixing, China, October 27-29, 2018



JRCEEC Workshops

- [2015 Annual Workshop](#) - "Critical Zone Science, Sustainability, and Services in a Changing World," Beck Agricultural Center (Purdue University) and the Holiday Inn Lafayette-City Center, West Lafayette, in. U.S.A., October 22-24, 2015



- [2014 Annual Workshop](#) - "Water, Energy, and Ecosystem Sustainable Development," Anhui Jinling Grand Hotel, Hefei, China, October 26-28, 2014





JRCEEC Workshops

- [2013 Annual Workshop](#) - "Environmental Health and Green Development," the Park Vista Hotel, Gatlinburg, Tennessee, USA, November 18-19, 2013



- China-US Joint Workshop on [Biogeochemistry of Carbon and Nitrogen](#), Shenyang Agricultural University, China, June 27-28, 2013 (organized by JRCEEC's Collaborative Research Group of Biogeochemistry)
- US-China Workshop on [Advances in Environmental Microbiology and Biotechnology](#), hosted by Nanjing University, Nanjing, China, May 31-June 1, 2013
- Special Forum - "[Frontiers in Environmental Research](#)," hosted by the Chinese Academy of Sciences' Institute for Soil Sciences, June 1, 2013
- Summer Workshop 2013-UT undergraduates and Haslam Scholars Kenna Rewcastle and Imani Chatman spent six weeks in Shenyang, China completing a soil science research project.
- Summer Workshop 2013-Bioreporters and their applications for the detection of toxicity and endocrine disrupting chemicals in the environment, May 20-June 10, 2013
- China-US Joint Workshop on [Systems Biology for Environmental Sustainability](#), Shenyang, China, May 27-28, 2013
- Special Forum China - [US Ecopartnership for Environmental Sustainability](#), Beijing, China, May 24, 2013

JRCEEC Workshops

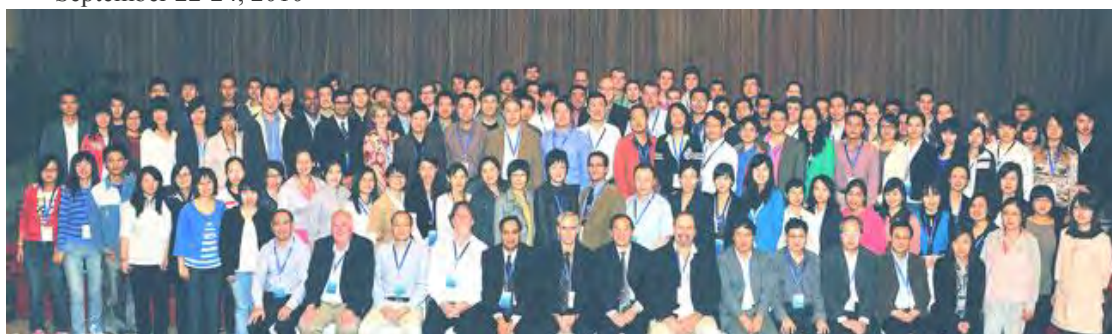
- [2012 Annual Workshop](#) - "Land Use, Ecosystem Services, and Sustainable Development," Shenyang, China, September 17-19, 2012



- [2011 Annual Workshop](#) - "Global Sustainability Issues in Energy, Climate, Water, and Environment," Purdue University, West Lafayette, Indiana (USA), September 26-29, 2011



- [2010 Annual Workshop](#) - "Energy, Ecosystem, and Environmental Change," Beijing, China, September 22-24, 2010



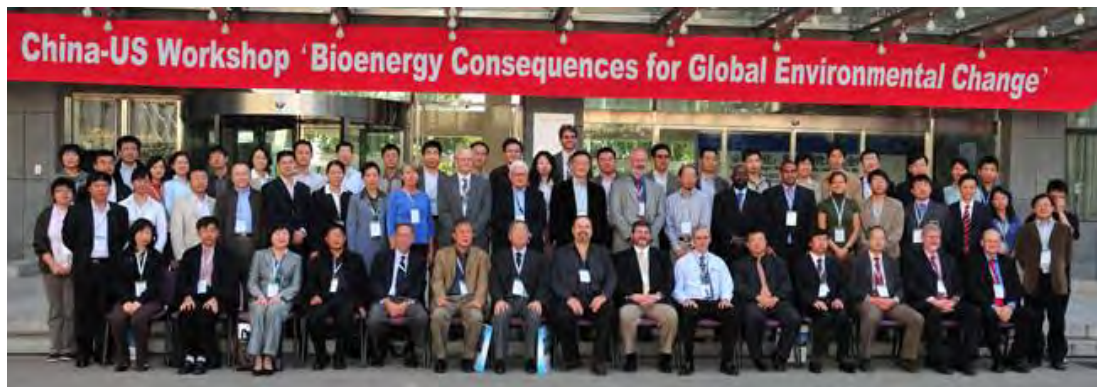
- [2010 Topical Workshop, No. 1](#) - "Sustainable Management of Soil and Water Resources, Shenyang, China, January 5-8, 2010
- [2010 Topical Workshop, No. 2](#) - "Biotechnology of Bioenergy Plants," Beijing, China, September 19-21, 2010.

JRCEEC Workshops

- [2009 Annual Workshop](#) - "The Climate-Energy Nexus," Oak Ridge, Tennessee, USA, November 11-13, 2009



- [2008 Annual Workshop](#) - "Bioenergy Consequences for Global Environmental Change," Beijing, China, October 15-17, 2008



- [2007 Annual Workshop](#) - "Environmental Aspects of Bioenergy Production and Sustainability," Knoxville, Tennessee, USA, September 11-13, 2007



Organizers and Committee

HOSTS

- Nanjing University, China
- China-US Joint Research Center for Ecosystem and Environmental Change

ORGANIZERS

- School of the Environment, Nanjing University
- State Key Laboratory of Pollution Control and Resources Reuse, China
- Yixing Environmental Research Institute of Nanjing University

SUPPORTING ORGANIZERS

- The University of Tennessee
- Oak Ridge National Laboratory
- Chinese Academy of Sciences
- China Agricultural University
- Nanjing Agricultural University
- Southern University of Science and Technology
- Renmin University of China
- Peking University

MAIN PARTICIPATING INSTITUTIONS

- University of Science and Technology of China
- Chinese Academy of Sciences
- Chinese Academy of Agricultural Sciences
- Tsinghua University
- Jiangsu Industrial Technology Research Institute
- Hohai University
- University of Science and Technology of China
- Beijing Normal University
- Beijing Institute of Technology
- Tongji University
- Chinese Academy of Forestry Sciences
- East China University of Science and Technology
- Harvard University
- Princeton University
- University of California
- Pennsylvania State University
- Purdue University
- Washington State University
- Texas A&M University
- University of Illinois at Urbana Champaign
- Michigan State University
- The Chronicle Group, USA



Organizers and Committee

- University of Alaska Fairbanks
- University of Wisconsin Madison
- University of New Hampshire
- University of Delaware
- Oregon State University
- John Hopkins University
- University of Arkansas
- Rutgers University
- Tennessee Department of Environment and Conservation

SPONSORS

- U.S. National Science of Foundation
- National Natural Science Foundation of China
- China Yixing Industrial Park for Environmental Science & Technology
- Agilent Technologies Inc.

PARTICIPANTS

The symposium invited approximately 150 recognized scientists, 80 program directors, and 10 industry leaders from the U.S. and China to give ~70 oral presentations, three roundtable discussions, and three field trips.

SCIENTIFIC COMMITTEE

Chairs:

Dr. Gui-Bin Jiang (Chinese Academy of Sciences)

Dr. Jun Chen (Nanjing University)

Dr. Gary S. Saylor (The University of Tennessee)

Members:

Dr. Shu Tao, Academician of Chinese Academy of Sciences; Professor, Peking University

Dr. Chao Wang, Academician of Chinese Academy of Engineering; Professor, Hohai University

Dr. Gui-Rui Yu, Professor, Institute of Geographic Science and Natural Resources, Chinese Academy of Sciences

Dr. Hong-Qiang Ren, Professor, Nanjing University

Dr. Xiu-Ping Liu, Davison Director, National Natural Science Foundation of China

Dr. Da-Peng Li, Program Director, National Natural Science Foundation of China

Organizers and Committee

Dr. Jun Bi, Professor, Nanjing University

Dr. Han-Qing Yu, Professor, University of Science and Technology of China

Dr. Gan-Lin Zhang, Professor, Institute of Soil Science, Chinese Academy of Sciences

Dr. Yan Zhu, Professor, Nanjing Agricultural University

Dr. Lixiao Zhang, Professor,

Dr. James Jones, Program Director, U.S. National Science Foundation; Member of the U.S. National Academy of Sciences

Dr. Frank Loeffler, Governor's Chair Professor, The University of Tennessee and ORNL

Dr. Terry Hazen, Governor's Chair Professor, The University of Tennessee and ORNL

Dr. Virginia Dale, Professor, The University of Tennessee; Corporate Fellow, ORNL

Dr. Tim Rials, Professor, The University of Tennessee

Dr. Julie Carrier, Professor, The University of Tennessee

Dr. Bradley Gaolach, Professor, Washington State University

Dr. Jennifer Turner, Director of China Program Director, Woodrow Wilson Center for International Scholars, USA

Dr. Bruno Basso, Professor, Michigan State University

Dr. Yan Jin, Professor, University of Delaware

Dr. Markus Flury, Professor, Washington State University

Dr. William Schnabel, Professor, University of Alaska

Dr. Marty Matlock, Professor, University of Arkansas

Dr. Kendra Abkowitz, Assistant Commissioner, Tennessee Department of Environment and Conservation

Dr. George Garden, Chief Engineering, Tennessee Department of Environment and Conservation

ORGANIZING COMMITTEE

Chair:

Dr. Hong-Qiang Ren (Dean of School of the Environment, Professor, Nanjing University)

Members:



Organizers and Committee

Dr. Cheng Gu (Professor, Nanjing University)

Dr. Jun-Guo Liu (Professor, Southern University of Science and Technology)

Dr. Huan-Guang Qiu (Professor, Renmin University of China)

Dr. Jie Zhuang (Professor, The University of Tennessee/Chinese Academy of Sciences)

Dr. Xu-Xiang Zhang (Professor, Nanjing University)

Ms. Sherry Redus (The University of Tennessee)

CONTACT INFORMATION:

Dr. Xu-Xiang Zhang: E-mail: zhangxx@nju.edu.cn, Mobile: 86 13913388213

Dr. Kan Li: Email: likan@nju.edu.cn, Mobile: 86 15951873428

Conference webpage: www.fews.org.cn

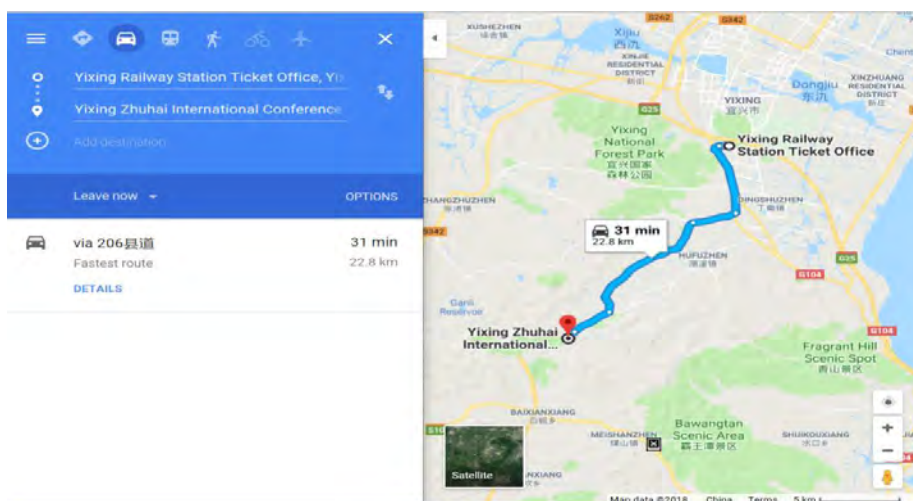


Conference Venue

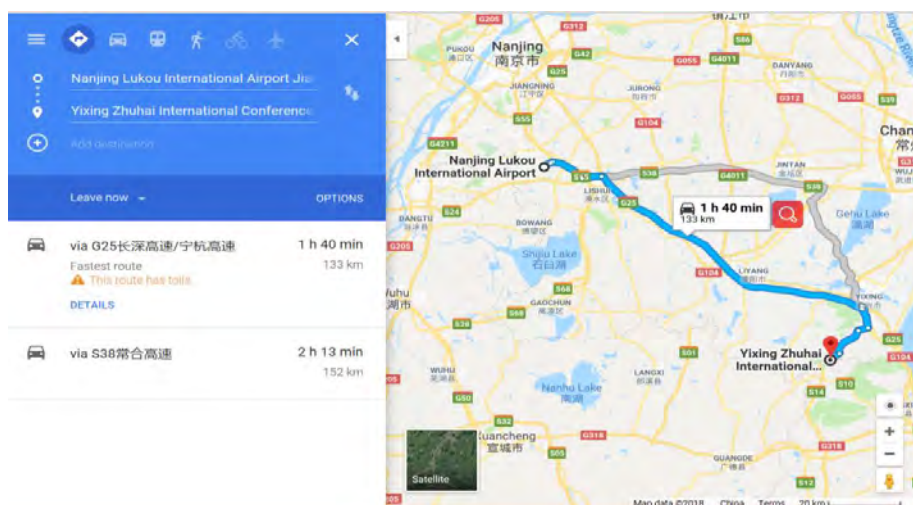
Conference Venue

Participants will stay at the Yixing Bamboo International Conference Center located in Zhuhai Village, Hutun Town, Yixing, Jiangsu Province, China. Detailed hotel information is available via hotel telephone 86-0510-80308888 and webpage <http://www.yxzhgj.com/>. The organizers will arrange transportation during Oct 24-28. The transportation from Yixing Railway Station, Nanjing Lukou International Airport, Sunan Shuofang International Airport Station/Airport to the Bamboo International Convention Center in Yixing is as follows:

1. Yixing Railway Station: 30-40 minutes' drive;



2. Nanjing Lukou International Airport: about 1 hour 40-50 minutes' drive;





Meeting Agenda

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Wednesday, October 24, 2018	
10:00-23:00	Registration at Hotel Lobby
18:00-20:00	Social Mixer in Hotel Bar

Thursday Morning, October 25, 2018	
7:00- 8:15	Breakfast at Hotel
8:15-12:00	Opening Ceremony and Keynote Speeches Place: Zhuyue Hall
8:15- 8:50	Welcome and Opening Remarks (Moderator: Jun Bi) <ul style="list-style-type: none"> • Hailin Xue, Nanjing University • Tim Rials, The University of Tennessee • Guibin Jiang, Chinese Academy of Sciences • Gary Saylor, The University of Tennessee • Xiuping Liu, National Natural Science Foundation of China • James Jones, National Science Foundation, USA • Xufeng Zhu, Yixing Industrial Park of Environmental Protection Technology
8:50- 9:00	Overview Presentation: “Food-Energy-Water Systems Transdisciplinary Environmental Research Network” Frank Loeffler, The University of Tennessee & Oak Ridge National Laboratory
9:00-9:20	Group Picture & Tea Break
9:20- 10:00	Keynote: “Climate Change and Pollution Perspectives: Opportunities for Broad Collaboration Across the FEWS Agenda” Gary Saylor, The University of Tennessee, USA
10:00-10:40	Keynote: “Evaluation of Air Pollutant Trend in China” Shu Tao, Peking University, China
10:40-11:20	Keynote: “Nexus Approaches to Enhancing Agriculture Sustainability” Bruno Basso, Michigan State University, USA
11:20-12:00	Keynote: Critical Zone Science in China: Recent Progress and Research Opportunities Ganlin Zhang, Institute of Soil Science, Chinese Academy of Sciences (CAS)
12:00-13:30	Lunch Keynote: “Beyond the Brink...The Nexus is on Track” James Thebaut, The Chronicles Group, USA
12:00-13:30	Lunch at Hotel Cafeteria

Meeting Agenda

Thursday Afternoon, October 25, 2018	
13:30-17:45	Workshop 1: Agricultural Sustainability and Revolution Place: Room Zixiage Chairs: Bruno Basso, Michigan State University Junguo Liu, South University of Science and Technology
13:30-13:35	Chairs' Introduction
13:35-14:05	Keynote: "Green Water, the Rhizosphere, and Food Security" Yan Jin, University of Delaware
14:05-14:35	Keynote: "Challenges and Opportunities in Implementing WEF Nexus" Junguo Liu, Southern University of Science and Technology
14:35-14:55	"Biodegradable Plastic Mulches in Agriculture: Degradation and Impact on Soil Quality" Markus Flury, Washington State University
14:55-15:15	"Farmer Decisions on Nitrogen Fertilizer Use" Jinhua Zhao, Michigan State University
15:15-15:35	"The Fall Armyworm Threat to Food Security and Transgenic Crops" Juan Luis Jurat-Fuentes, The University of Tennessee
15:35-15:55	"Water Resources Change in Response to Climate Change on the Tibetan Plateau and Its Implications to Food and Energy" Cuo Lan, Institute of Tibetan Plateau Research, CAS
15:55-16:15	"Environmental Impacts in the Dairy-Energy-Water Nexus" Andrea Hicks, University of Wisconsin Madison
16:15-16:35	"Water Soluble Fullerene Enhance Photosynthesis of Cucumber Plant" Lijuan Zhao, Nanjing University
16:35-16:55	Tea Break
16:55-17:45	Chair's Reporting to Summarize Workshop Results
18:00-19:30	Banquet at Zhuhai Hall



Meeting Agenda

Thursday Afternoon, October 25, 2018	
13:30-17:45	Workshop 2: Climate Adaptation, Water Resources and Disaster Control Place: Room Ziyun Chairs: Charles Sims, The University of Tennessee Dongmei Zhou, Nanjing University/Institute of Soil Science, CAS
13:30-13:35	Chairs' Introduction
13:35-14:05	Keynote: "Planning for a Resilient Future: Development and Application of an Extreme Weather Event Vulnerability Assessment Framework in Tennessee" Kendra Abkowitz, Tennessee Department of Environment and Conservation
14:05-14:35	Keynote: "How Downscaled Climate Dynamics Influence Investments in FEW Infrastructure" Charles Sims, The University of Tennessee
14:35-15:05	Keynote: "The Global and Contiguous US (CONUS) Distribution of Nitrogen Deposition and Its Exceedance in a Changing Climate" Joshua Fu, The University of Tennessee
15:05-15:25	"Climate Change and Water Resource Management in China" Xiaojun Wang, Nanjing Hydraulic Research Institute, Ministry of Water Resources
15:25-15:45	"Streamflow in the Columbia River Basin: Quantifying Changes over the Period 1951-2008 and Determining the Drivers of Those Changes" Mingzhou Jin, The University of Tennessee
15:45-16:05	Effects of Warming on Cd Uptake and Translocation in Soil-Rice System Dongmei Zhou, Nanjing University/Institute of Soil Science, CAS
16:05-16:25	"China's Opportunities to Mitigate Diet-Related Climatic Burden" Guobao Song, Dalian University of Technology
16:35-16:55	Coffee/Tea Break
16:55-17:45	Chair's Reporting to Summarize Workshop Results
18:00-19:30	Banquet at Zhuhai Hall

Meeting Agenda

Thursday Afternoon, October 25, 2018	
13:30-17:45	Workshop 3: Stakeholder-targeted Ecosystem Services and Health Place: Room Zijin Chairs: Jenna Tilt, Oregon State University Xinde Cao, Shanghai Jiaotong University
13:30-13:35	Chairs' Introduction
13:35-14:05	Keynote: "Considering the Nexus between Food-Energy-Water Systems Helps Identify Ways to Make Them More Resilient" Virginia Dale, The University of Tennessee/Oak Ridge National Laboratory
14:05-14:35	Keynote: "Lessons from the Field: Creating a Collaborative, Stakeholder-driven Approach to Food, Energy, and Water Adaptation and Resilience Planning" Jenna Tilt, Oregon State University
14:35-14:55	"Multi-stakeholder Engagement in FEWS Research" Marty Matlock, University of Arkansas
14:55-15:15	"Influences of Urban Expansion on Regional Ecosystem Services and Hotspots Identification" Weiping Chen, Research Center for Eco-Environmental Sciences, CAS
15:15-15:35	"Contaminants of Emerging Concern in Wastewater Irrigation and Food Production" Steven Ripp, The University of Tennessee
15:35-15:55	"A Novel Mode of Aerobic Granular Sludge Process with Air Recycling for Stable Operation and Alginate-Like Exopolysaccharides (ALE) Recovery in The Future" Liang Zhu, Zhejiang University
15:55-16:15	"Antimony Adsorption on {001} TiO₂" Chuanyong Jing, Research Center for Eco-Environmental Sciences, CAS
16:15-16:35	"Isobutanol Production by <i>Klebsiella Pneumonia</i>" Jian Hao, Shanghai Advanced Research Institute, CAS
16:35-16:55	Tea Break
16:55-17:45	Chair's Reporting to Summarize Workshop Results
18:00-19:30	Banquet at Zhuhai Hall



Meeting Agenda

Thursday Afternoon, October 25, 2018	
13:30-17:45	Workshop 4: Green Infrastructure & Community Sustainability Place: Room Ziyu Chairs: Bradley Gaolach, Washington State University Hefa Cheng, Peking University
13:30-13:35	Chairs' Introduction
13:35-14:05	Keynote: "Performance Evaluation of Green Infrastructure for Water Sustainability" Benji Jiang, Institute of Environmental Engineering, Taiwan University
14:05-14:35	Keynote: "Direct and Indirect Intersections of FEWS and Urban Green Infrastructure" Bradley Gaolach, Washington State University
14:35-14:55	"Effects of Nitrate Reduction on Structure and Function of Dehalogenating Community" Jun Yan, Institute of Applied Ecology, CAS
14:55-15:15	"The Efficiency of Alternative Energy, Primarily Hydropower, at Displacing Conventional Coal-generated Electricity in China" Hefa Cheng, Peking University
15:15-15:35	"Tennessee's Plant Optimization Program: Emphasizing Nutrient Optimization and Energy Efficiency" George Garden, Tennessee Department of Environment and Conservation
15:35-15:55	"Intelligent Urban Metabolic Systems for Green Cities of Tomorrow: an FEW Nexus-based Approach" Luis Rodriguez, University of Illinois at Urbana Champaign
15:55-16:15	"Strengthening the Scientific Basis for Decision Making about Dams" Weiwei Mo, University of New Hampshire
16:15-16:35	"MicroFEWs: Investigating Food-Energy-Water Relationships in Remote Cold Region Communities" William Schnabel, University of Alaska Fairbanks
16:35-16:55	Tea Break
16:55-17:45	Chair's Reporting to Summarize Workshop Results
18:00-19:30	Banquet at Zhuhai Hall

Meeting Agenda

Thursday Afternoon, October 25, 2018	
13:30-17:45	Workshop 5: Socio-economic Sustainability of Natural Resources Utilization Place: Room Jinzhu Chairs: Julie Carrier, The University of Tennessee Lixiao Zhang, Beijing Normal University
13:30-13:35	Chairs' Introduction
13:35-14:05	Keynote: "Aligning Research and Government Policies to Advance Science in the Food, Energy and Water Nexus" Frank Felder, Rutgers University
14:05-14:35	Keynote: "Connecting Stakeholders in Sustainability Initiatives: The Influence of Network Exchange Brokers" Wendy Tate, The University of Tennessee
14:35-14:55	"A Study on Securing a Sustainable FEWS" Fangqin Cheng, Shanxi University
14:55-15:15	"Reducing Resource Use and Waste at The Seafood-Energy-Water Nexus" Roni Neff, Johns Hopkins University
15:15-15:35	"Changing Urban Diet and Related Energy-Food Footprints" Lixiao Zhang, Beijing Normal University
15:35-15:55	"A Novel Closed-Circuit Circulation System about Integrated Ethanol-Methane Fermentation Process Based on The Subcritical Water Pretreatment of Lignocellulosic Biomass" Xin Lv, North West Agriculture and Forestry University
15:55-16:15	"Shale Gas-producing Wastewater Reutilization in FEWS" Baicang Liu, Sichuan University
16:15-16:35	"Biomass Stabilization: Phosphorus Fixation and Utilization" Tao Zhang, China Agricultural University
16:35-16:55	Tea Break
16:55-17:45	Chair's Reporting to Summarize Workshop Results
18:00-19:30	Banquet at Zhuhai Hall



Meeting Agenda

Friday Morning, October 26, 2018	
8:30-11:35	Workshop 6: FEWS Research Perspectives on Technical Solutions Place: Room Zixiage Panel: Mark Radosevich (Chair), The University of Tennessee Jingkuan Wang (Co-Chair), Shenyang Agricultural University Wei Zhang, Michigan State University Xinghua Xia, Beijing Normal University Marty Matlock, University of Arkansas Frank Felder, Rutgers University George Garden, Tennessee Department of Environment and Conservation
8:30-8:35	Chairs' Introduction
8:35-8:55	"Case Study: The Practice of Advanced Concepts of Low-Carbon, Green Technologies in Wastewater Treatment Plant" Yunhua Kong, CSD Environment
8:55-9:15	"From Complexity to Decisions on the Ground: Decoding Uncertainty and Risk in FEWS Systems" Marty Matlock, University of Arkansas
9:15-9:35	"Response of Lake/Reservoir Water Quality to Climate Change" Xinghui Xia, Beijing Normal University
9:35-9:55	Tea Break
9:55-10:15	"Real-time Cellular Monitoring Using a Synthetic Luciferase Enables Novel Human Health Applications" Dan Close, 490 BioTech, USA
10:15-10:35	"One Health in the Nexus of Food, Energy and Water Systems" Wei Zhang, Michigan State University
10:35-10:55	"Integrated Advances in Food, Energy, and Water Through Biological Control of Sugarcane Wilting Disease" Mark Radosevich, The University of Tennessee
10:55-11:15	"Learning to Digest Plant Biomass from Insects: Insights from Primitive Hexapods" Juan Luis Jurat-Fuentes, The University of Tennessee
11:15-11:35	"Controllable Preparation of Functional Crystalline Materials for Food and Water Treatment" Jianxin Chen, Hebei University of Technology
12:00-13:30	Lunch at Hotel Cafeteria

Note: Each presentation has 10 minutes for talk and 10 minutes for questions and comments

Meeting Agenda

Friday Morning, October 26, 2018	
8:30-11:35	Workshop 7: FEWS Research Perspectives on Resources Sustainability Place: Room Zijin Panel:: Roni Neff (Chair), John Hopkins University Ganlin Zhang (Co-Chair), Chinese Academy of Sciences Markus Flury, Washington State University James Thebaut, The Chronicles Group Guohua Xu, Nanjing Agricultural University Virginia Dale, The University of Tennessee Weiping Chen, Chinese Academy of Sciences Zhen Lei, Pennsylvania State University
8:30-8:35	Chairs' Introduction
8:35-8:55	“Case Study: Changzhou Food Waste Comprehensive Treatment BOT Project” Jinfeng Zhang, WELL E, China
8:55-9:15	“Conservation Tillage for Sustainable Food, Energy and Water Systems: Linked Econometric and Process Based Models” Zhen Lei, Pennsylvania State University
9:15-9:35	“Long-Term Effects of Biodegradable Plastic Mulch on Soil Health” Markus Flury, Washington State University
9:35-9:55	Tea Break
9:55-10:15	“The Sustainable/Plant-Based Diets” Roni Neff, Johns Hopkins University
10:15-10:35	“Valorization of Biomass via Catalysis in Condensed-phase Media” Hongfei Lin, Washington State University
10:35-10:55	“Environment-Enhancing Technology for Energy Production , Nutrients Recovery and Wastewater Utilization” Zhidan Liu, China Agricultural University
10:55-11:15	“Mechanisms of Biochar Effects on Soil Thermal Properties” Guohua Xu, Nanjing Agricultural University
11:15-11:35	“Smart Nanofertilizer and Nanopesticide : An Efficient Solution for Improving Crop Yields” Lijuan Zhao, Nanjing University
12:00-13:30	Lunch at Hotel Cafeteria

Note: Each presentation has 10 minutes for talk and 10 minutes for questions and comments



Meeting Agenda

Friday Morning, October 26, 2018	
8:30-11:35	Workshop 8: FEWS Research Perspectives on Modeling Communication Place: Room Jinzhu Panel: Luis Rodriguez (Chair), University of Illinois at Urbana Champaign Mingzhou Jin (Co-Chair), The University of Tennessee Andrea Hicks, University of Wisconsin Madison William Schnabel, University of Alaska Fairbanks Yan Jin, University of Delaware Weiwei Mo, University of New Hampshire Jinhua Zhao, Michigan State University
8:30-8:35	Chairs' Introduction
8:35-8:55	"A Virtual Resource Center Enabling Graduate Innovations at the Nexus of Food, Energy, and Water Systems" Luis Rodriguez, University of Illinois at Urbana Champaign
8:55-9:15	"Coupled FEWS Modeling for Sustainability of the Global Crop Supply Chain with a Focus on China – US Interactions" Mingzhou Jin, The University of Tennessee
9:15-9:35	"Sustainable Design of Urban Decentralized Water and Energy Systems" Weiwei Mo, University of New Hampshire
9:35-9:55	Tea Break
9:55-10:15	"Developing the Impact Assessment and Prediction Platform of Food, Energy, and Water (IAPP-FEW) Through Computational Modeling" Joshua Fu, The University of Tennessee
10:15-10:35	"Soil: A Key Part of FEWS Nexus" Yan Jin, University of Delaware
10:35-10:55	"Calibration and Application of Model of Food-Energy-Water Coupling System" Lei Duan, Tsinghua University
10:55-11:15	"Species-specific Sensitivity to Tetrabromobisphenol A (TBBPA) in Two Ecologically Different Earthworms" Rong Ji, Nanjing University
11:15-11:35	"Resilience Assessment for the WPE Nexus—A Case Study of Hehuang Region, China" Rihui An, Wuhan University
12:00-13:30	Lunch at Hotel Cafeteria

Note: Each presentation has 10 minutes for talk and 10 minutes for questions and comments

Meeting Agenda

Friday Afternoon, October 26, 2018	
13:30-17:00	Workshop 9: FEWS Convergence: From Talk to Action Place: Room Zixiage (all participants) Chairs: Frank Loeffler, The University of Tennessee Cheng Gu, Nanjing University
13:30-13:35	Chairs' Introduction
13:35-14:05	Reporting by Proposal Workshop Chairs
14:05-14:45	White Paper Presentation: "Conceptualizing an Environmental Framework for US-China Research Collaborations on the Food, Energy, and Water Nexus" Frank Loeffler, The University of Tennessee/Oak Ridge National Laboratory
14:45-15:30	Discussion on Meeting Outcome
15:30-16:45	Discussion on Action Plan
16:45-16:55	Conference Summary Bradley Gaolach, Washington State University
16:55-17:00	Closing Remarks and Conference Ends Cheng Gu, Nanjing University
17:30-19:00	Dinner at Hotel Cafeteria

Saturday, October 27	
8:00-18:00	Learn from Practice Place: Changzhou City Leader: Kan Li, Nanjing University
8:00-9:40	Travel to Site
9:40-10:10	Facility Tour 1: A Major S&T Project — National Water Pollution Control and Treatment Demonstration Site 1: Dispersal Rural Wastewater Treatment Project in Luoyang Town
10:10-11:00	Stakeholder Engagement: Local Leader's Perspectives on China's Eco-environment Actions and Local Needs for Technical Support
11:00-12:30	Lunch
12:30-13:30	Facility Tour 2: A Major S&T Project — National Water Pollution Control and Treatment Demonstration Site 2: The Eco-farming System in Xueyan Town
13:35-15:35	Facility Tour 3: Eco-treatment and Energy Utilization of Municipal Solid Waste: Practice and Exploration of Non-incineration Solution
15:35-17:15	Travel Back to the Conference Hotel in Yixing
17:30-19:00	Dinner at Hotel Cafeteria

Sunday, October 28	
Departure & Post-conference Activities	

List of Attendants

List of Attendants from the U.S.

Name	Agency	Title/Position
Andrea Hicks	University of Madison Wisconsin	Assistant Professor
Bradley Gaolach	Washington State University	Director, WSU Metropolitan Center for Applied Research & Extension at Washington State University
Bruno Basso	Michigan State University	Associate Professor
Charles Sims	The University of Tennessee	Associate Professor
Dan Close	Oak Ridge National Laboratory	Staff Scientist
Frank Felder	Rutgers	Research Professor
Frank Loeffler	The University of Tennessee	Professor
Gary Sayler	The University of Tennessee	Professor Emeritus
George Garden	Tennessee Department of Environment and Conservation	Chief Engineer
Hongfei Lin	Washington State University	Associate Professor
James Jones	National Science Foundation	Staff Directory
Jenna Tilt	Oregon State University	Assistant Professor
Jennifer Turner	Woodrow Wilson Center	Director, China Environment Forum
Jessica McCord	The University of Tennessee	Research Associate
Jie Zhuang	The University of Tennessee	Professor
Jim Thebaut	The Chronicles Group	President/CEO
Jinhua Zhao	Michigan State University	Professor; Director
Joshua Fu	The University of Tennessee	Professor

2018 China-US Joint Eco-environmental Symposium
Advances in Critical Needs for the Nexus of Food, Energy, and Water Systems

List of Attendants

Juan Luis Jurat-Fuentes	The University of Tennessee	Associate Professor
Julie Carrier	The University of Tennessee	Professor
Kendra Abkowitz	Tennessee Department of Environment and Conservation	Assistant Commissioner
Lei Zhen	Pennsylvania state university	Associate Professor
Luis Rodriguez	University of Illinois	Associate Professor
Mark Radosevich	The University of Tennessee	Professor
Markus Flury	Washington State University	Professor
Marty Matlock	University of Arkansas	Professor
Mingzhou Jin	The University of Tennessee	Professor, Associate Head, and Director
Regan Wagner	The University of Tennessee	Graduate Research Assistant
Roni Neff	Johns Hopkins University	Assistant Professor
Steven Ripp	The University of Tennessee	Research Associate Professor
Tim Rials	The University of Tennessee	Professor
Virginia Dale	The University of Tennessee	Adjunct Professor
Wei Zhang	Michigan State University	Associate Professor
Weiwei Mo	University of New Hampshire	Assistant Professor
Wendy Tate	The University of Tennessee	Professor
William Schanbel	University of Alaska Fairbanks	Director
Xiaolong Liang	The University of Tennessee	Ph.D. Student
Yan Jin	University of Delaware	Professor
Yongchao Yin	The University of Tennessee	Doctoral Student

List of Attendants

List of Attendants from China

Name	Agency	Title/Position
Baicang Liu	Sichuan University	Associate Professor
Benji Jiang	Taiwan University	Professor
Caiyun Deng	Beijing Normal University	Master Student
Chuanyong Jing	Research Center for Eco-Environmental Sciences, CAS	Professor
Cuo Lan	Institute of Tibetan Plateau Research, CAS	Professor
Da Chen	Jinan University	Professor
Dapeng Li	National Natural Science Foundation of China	Program Director
Dongmei Zhou	Nanjing University/Institute of Soil Science, CAS	Professor
Fan Ding	Shenyang Agricultural University	Associate Professor
Fangqin Cheng	Shanxi University	Professor
Gang Liu	Hohai University	Associate Professor
Ganlin Zhang	Institute of Soil Science, CAS	Professor
Genxing Pan	Nanjing Agricultural University	Professor
Guibin Jiang	Research Center for Eco-Environmental Sciences, CAS	Academician
Guirui Yu	Institute of Geographic Science and Natural Resources, CAS	Professor
Guobao Song	Dalian University of Technology	Associate Professor
Guohua Xu	Nanjing Agricultural University	Professor
Hailin Xue	Nanjing University	Vice President
Hanqing Yu	University of Science and Technology of China	Professor

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Haoxi Ben	Southeast University	Professor
Hefa Cheng	Peking University	Professor
Hongrui Wang	Beijing Normal University	Professor
Huanguang Qiu	Renmin University of China	Professor
Huayong Wu	Institute of Soil Science, CAS	Research Assistant
Huimin Wang	Hohai University	Professor
Ji li	China Agricultural University	Professor
Jian Hao	Shanghai Advanced Research Institute, CAS	Associate Professor
Jianxin Chen	Hebei University of Technology	Professor
Jinfeng Zhang	Jiangsu WELLE Environmental Co., Ltd	Deputy General Manager
Jingkuan Wang	Shenyang Agricultural University	Professor
Jingwen Chen	Dalian University of Technology	Professor
Jiping Shi	Shanghai Advanced Research Institute, CAS	Professor
Jun Yan	Institute of Applied Ecology, CAS	Professor
Junguo Liu	Southern University of Science and Technology	Professor
Lei Duan	Tsinghua University	Professor
Li Liu	Shanghai Advanced Research Institute, CAS	Associate Professor
Liang Zhu	Zhejiang University	Associate Professor
Lijuan Zhao	Nanjing University	Professor
Lingen Wang	Institute of Geographic Science and Natural Resources, CAS	Ph.D. Student
Lixiao Zhang	Beijing Normal University	Professor
Qiufeng Wang	Institute of Geographic Science and Natural Resources, CAS	Associate Professor

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List of Attendants

Rihui An	Wuhan University	Student
Shu Tao	Peking University, China	Academician
Shuxin Gong	Beijing Normal University	Undergraduate
Taisheng Du	China Agricultural University	Professor
Tao Zhang	China Agricultural University	Associate Professor
Wei Lou	Wuhan University	Associate Researcher
Weiping Chen	Research Center for Eco-Environmental Sciences, CAS	Professor
Wenbin Zhu	Institute of Geographic Science and Natural Resources, CAS	Associate Professor
Xiaojun Wang	Nanjing Hydraulic Research Institute, Ministry of Water Resources	Researcher
Xiaozhi Xiang	Institute of Geographic Science and Natural Resources, CAS	Master Student
Xin Lv	North West Agriculture and Forestry University	Professor
XinDe Cao	Shanghai JiaoTong University	Professor
Xinghui Xia	Beijing Normal University	Professor
Xiuping Liu	National Natural Science Foundation of China	Davison Director
Yan Zhu	Nanjing Agricultural University	Professor
Yonglong Lv	Research Center for Eco-Environmental Sciences, CAS	Professor, Academician of TWAS
Yuanchun Zhou	Nanjing University	Associate Researcher
Zhidan Liu	China Agricultural University	Associate Professor

For Notes



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