Federation of Earth Science Information Partners

Guide to Winter Conference 2015

Earth Science and Data in Support of Food Resilience:
Climate, Energy and Water Nexus

January 6-8, 2015
Renaissance DuPont Circle Hotel
Washington, DC

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Program Overview

Welcome to the Federation of Earth Science Information Partners (ESIP) Winter Meeting 2015! ESIP is a broad-based, distributed community of data and information technology practitioners who come together to collaborate on coordinated interoperability efforts across Earth science communities.

The ESIP Federation, originally started at the recommendation of an NRC report in 1998, has flourished over the last 15 years. ESIP started out with 24 original members and now has more than 160. This meeting we will focus on the theme, "Earth Science and Data in Support of Food Resilience: Climate, Energy, Water Nexus".

The program is laid out by day, starting with the 'at-a-glance' page followed by session abstracts for that day. Sessions are color-coded by ESIP Collaboration Area – blue for information technology, green for societal benefit and orange for data stewardship. Sessions led by external groups are purple and all plenary sessions are yellow.

Wednesday morning, we will have the ESIP Assembly Meeting – required for voting reps, but open to anyone interested at 8am. It will be immediately followed by the 'State of the Federation', an update on ESIP activities and relevant sponsor and partner activities.

Acknowledgments

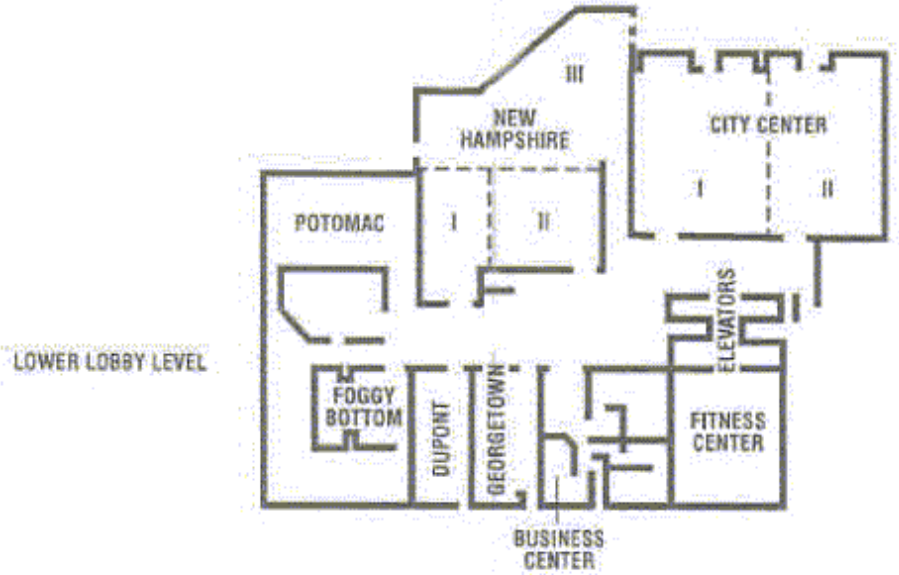
The Foundation for Earth Science gratefully acknowledges the support it receives from NASA and NOAA in making the ESIP Federation community and its meetings possible.

This meeting is a truly collaborative effort. We had over 40 people contribute and volunteer to lead sessions for this meeting. Thanks also to the ESIP Visioneers team, led by Bruce Caron. They honed the meeting theme, helped identify plenary speakers and ensured that we continue to innovate at every meeting.

Finally, we acknowledge the tremendous volunteer support we receive from you, members of our community. Your contributions and expertise make the ESIP Federation the dynamic organization it has become. At this meeting we will announce the 2015 ESIP leadership, so we'd also like to acknowledge all the 2014 ESIP Leadership:

- Peter Fox, President
- Emily Law, Vice President
- Type Reps: Sara Graves, Ken Keiser and Margaret Mooney
- Committee Chairs: Matt Austin, Bruce Caron, Ruth Duerr, Roberta Johnson, Tyler Stevens, Bill Teng, and Christine White
- Cluster & Work Group Chairs: Ed Armstrong, Richard Eckman, Corinna Gries, Ted Habermann, Nancy Hoebelheinrich, Thomas Huang, Beth Huffer, Steve Kempler, Chris Lenhardt, Chris Lynnes, Karen Moe, Tom Narock, Doug Newman, Ana Privette, Adam Shepherd, Anne Wilson, Phil Yang
- Student Fellows: Reid Boehm, Kevin Dobbs, Kelly Monteleone, Kyle Nelson, Sarah Ramdeen, Nic Weber
- Foundation for Earth Science Staff: Carol Meyer, Chuck Hutchinson, Erin Robinson, Annie Keyes and Dan Keyes

Hotel Map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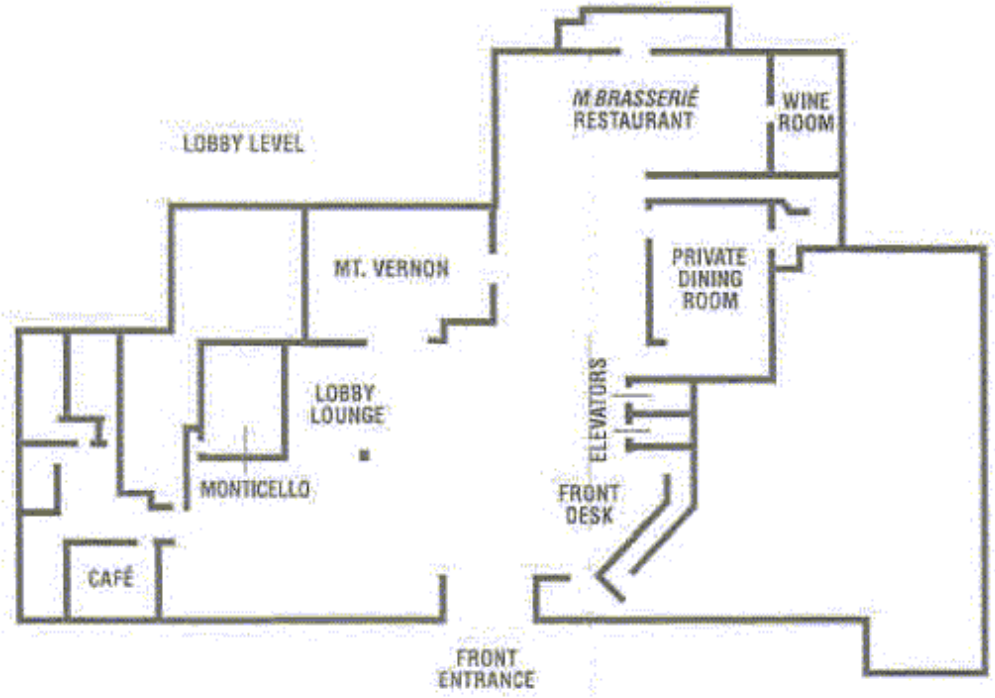
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WINE ROOM
MT. VERNON
PRIVATE DINING ROOM
LOBBY LOUNGE
ELEVATORS
MONTICELLO
FRONT DESK
CAFÉ
FRONT ENTRANCE

Special Events

Meeting Technology – Twitter, Facebook & the ESIP Connect App

As we have for the last several meetings, please tweet with the #ESIPFed hashtag. We will also be posting to the ESIP Facebook page (http://on.fb.me/1xw1RjL). Please share pictures there.

At this meeting we are experimenting with an ESIP app, ESIP Connect. This app has the same information that the printed program includes, but hopefully in a more convenient and easy to use format. Because of this, we are printing fewer full printed programs. The app also includes social feeds & a networking feature.

Birds of a Feather – ad hoc meeting space

Birds of a feather is free, unscheduled space available if a topic emerges that you'd like to continue a conversation or work collaboratively on a project. These rooms all have projectors and presenter computers in the room and can have a WebEx session, if needed.

Rooms available:
1/6 3:30-5:30 - Dining Room
1/8 10:30 -12 Foggy Bottom
1/8 1:30-3 Foggy Bottom
1/8 3:30-5 Foggy Bottom, Potomac and Dupont

ESIP 101

New to ESIP or just need a refresher on the alphabet soup that get's thrown around (What is a Type I, any way?)? Join us for ESIP 101 where we go through the basics of participating in ESIP. The ESIP Federation has grown its membership during the past several years and has evolved its activities during the same time. For those new to the ESIP Federation or anyone interested in learning more about its activities, join us for an overview presentation that will highlight the history, current activities, opportunities for involvement and how to become a partner.

Time/Place: New Hampshire, Lunch on Tuesday, January 6.

Poster Session & Reception

Please join us Tuesday, Jan 6 from 5-7:30 in City Center ballroom for a poster session and reception. Your nametag includes a ticket good for one drink of your choice. Posters abstracts are included in this program and can be found on the ESIP Commons (http://commons.esipfed.org/gallery/Winter%20Meeting%202015).

Time/Place: City Center, Jan 6, 5-7:30pm

ESIP Assembly Meeting

The ESIP Assembly will meet. Key points of business are (1) election of new ESIP leadership & caucuse to elect type reps to Finance, Partnership and Constituion and Bylaw committees (2) changes to the Foundation for Earth Science constitution and bylaws that may affect ESIP. We have the fortunate circumstance that we've had a tremendous amount of activity from our ESIP assembly voting reps. This means that we will need at least 50% of our active members to be present. If you are a voting rep or a proxy, please plan to attend. The agenda can be found on the Commons: http://commons.esipfed.org/node/7855

Time/Place: City Center, Wednesday, January 7, 8am

State of the Federation

The State of the Federation will have two parts - the first inward looking at ESIP and the second part will feature updates from sponsors and partners. This is a way for the community-at-large to very quickly understand what is going on. The ESIP section will be presented by ESIP President, Peter Fox, cover highlights from the last 6 months for collaboration areas including key developments and outputs as well as plans for 2015. The second half of the State of the Federation will include updates from ESIP Sponsors - NASA and NOAA and partners - USGS, RDA-US, EarthCube and GEO.

Time/Place: New Hampshire Wednesday, January 7, 9am

Martha Maiden Lifetime Achievement Award for Service to the Earth Science Information Community

In honor of Martha E. Maiden's leadership, dedication and tireless efforts to nurture the ESIP Federation into a vibrant and mature organization, this award was established in 2009 to recognize outstanding service to the Earth science information community. This award honors individuals who have demonstrated leadership, dedication and a collaborative spirit in advancing the field of Earth Science information.

This award is named for Martha E. Maiden, NASA Program Executive for Earth Data Systems. Ms. Maiden is widely credited for nurturing the ESIP Federation in its infancy and has overseen its growth and maturity. This award will be presented on a regular basis, but not less than one time each year.

Time/Place: Lunch on January 7

ESIP President's Award

This award honors individuals who have made significant contributions to the Federation in the previous year. This award will be given annually at the ESIP Winter Meeting. The awardees receive a plaque.

Time/Place: Lunch on January 7

Raskin Scholarship Award

In collaboration with Rob Raskin's family, the ESIP Federation and the Foundation for Earth Science remember Rob and his dedication to support the next generation of Earth science data and technology leaders through the Robert G. Raskin Scholarship. The scholarship is awarded annually to a current graduate or post-graduate student in the Earth or computer sciences who has an interest in community evolution of Earth science data systems. The Raskin Scholarship seeks to promote collaboration, research support, and exposure for talented students in the Earth or computer sciences. Special attention will be given to applicants demonstrating an interest in semantics, GIS, cyberinfrastructure and computing in the geosciences. The Scholarship will provide a stipend, travel support to the ESIP Federation summer meeting and an invited talk covering the winner's field of interest.

Time/Place: Lunch on January 7

Speaker Bios

John Bolten, NASA Goddard Space Flight Center

Dr. John Bolten received the M.S. and Ph.D. degrees in geology with an emphasis in hydrology and remote sensing from the University of South Carolina. His research focuses on the application of satellite-based remote sensing and land surface hydrological modeling for improved ecological and water resource management. He is has been involved in several water resources management efforts in the Middle East, Central and North Africa, Southeast Asia, and United States. He is currently serving as Associate Program Manager for Water Resources, NASA Applied Sciences Program. John has previously served as NASA GRACE Mission Applications Deputy Representative for Water and Coastal Resources, Chair of the American Geophysical Union's Hydrology Remote Sensing Technical Committee, and is a member of the Committee on Earth Observing Satellites (CEOS), Flood Disaster Pilot Risk Management Team. His most recent research includes the development of an improved hydrological decision support system for the Mekong River Commission, and a historical water budget analysis of the Lake Chad basin, and development of the operational global soil moisture product for the USDA Foreign Agricultural Service crop forecasting system.

Molly Brown, NASA Goddard Space Flight Center

Dr. Molly Brown is a geographer (University of Maryland) and a biologist (Tufts University), with international experience both in Africa (US Peace Corps) and in Hungary (as a student). Her interests are sustainability and climate change adaptation, communicating knowledge and information across scientific disciplines, bridging the public and private sectors, and understanding how information gets from data producers to data users.

She divides her time at NASA in three areas – long term climate data records, applied science projects, and the impact of climate variability on health outcomes and food security in the developing world. As we become more aware of the causes and impact of climate change, we need to understand how climate variability affects the poor in agricultural regions to obtain enough food for an active and healthy life. Examining how climate interacts with food markets and government policies is central to understanding how climate data can most be of use.

Satellite remote sensing can provide critical information for decision making in a wide variety of political and economic processes. Ensuring that the data is available and is used in the domains where it is most needed is the focus of applications programs at NASA. She and her colleagues at NASA Goddard, work to extend the impact of the nation's investment in technology to new communities and arenas, including insurance, disaster response, drought monitoring, flooding in mountainous areas, food access, and others.

At NASA, Molly works with Soil Moisture Active Passive (SMAP) and, ICESat-2 missions, running their applications programs with Vanessa Escobar and other colleagues at Goddard. She is also on the Science Team of the Carbon Monitoring System, focusing on applications. Through these roles, Molly works to ensure the usability and relevance of the satellite data to the broader science and end-user communities. Molly has also begun to work with the technology divisions of NASA on new sensors, such as sensors that can measure plant stress, crop residue, and crop yield.

Richard J. Driggers, National Security Council

Richard "Rick" Driggers joined the National Security Council on September 30, 2013. He currently serves as the Director for Data and Systems Integration Policy. Rick provides leadership and management of an interagency process to develop policies that will require agencies that own and operate tools and systems such as modeling capabilities, databases/repositories, vulnerability assessment tools, etc. that support the Critical Infrastructure Security and Resilience community to make them discoverable and more accessible across the Federal and State and local Government to maximize their utility and use. Rick is also the Executive Office of the President lead for development of the Climate Resilience Toolkit called for in the President's Climate Action Plan and Executive Order on Climate Preparedness. The toolkit will create a virtual climate-resilience toolkit that centralizes access to data-driven resilience tools, services, and best practices.

Previously, Rick served as the DHS National Protection and Programs Directorate Chief Technology Officer (CTO). As the CTO, Rick oversaw the areas of applied technologies, data management and governance, enterprise

architecture, geospatial information system, and portfolio management. Prior to that, he served as the Acting Director for the Infrastructure Security Compliance Division (ISCD) within the Office of Infrastructure Protection (IP). ISCD leads the national implementation of the Chemical Facility AntiTerrorism Standards (CFATS) to assess high-risk chemical facilities, promote collaborative security planning, and ensure that covered facilities meet risk-based performance standards. Rick also served as the Director, Infrastructure Information Collection Division and the Deputy Director, Risk Management Division within IP and the Deputy Director, Collection and Requirements Division within the Office of Intelligence and Analysis at the Department of Homeland Security.

Rick began his service to the nation when he enlisted on October 31, 1988 into the U.S. Air Force (USAF) as a Combat Controller assigned to the Air Force Special Operations Command. As a Combat Controller, Rick held several leadership and operational positions. He deployed as a component of U.S. Air Force Special Tactics Teams, U.S. Army Special Forces Operations Detachment Alpha Teams, U.S. Navy SEAL Platoons, and the British, Australian, and New Zealand Special Air Service (SAS) Troops. He served in the Middle East participating in operations Desert Shield/Desert Storm, Provide Comfort II and III, and Desert Thunder during the 1990s. Rick deployed to the Balkans to participate in operations Deny Flight and Joint Endeavor in the mid 1990s. He also participated in counter-drug operations in Central and South America. Rick's military service was cut short due to suffering multiple severe injuries during parachute operations.

His military awards and decorations include the U.S. Air Force Commendation Medal (5 awards), Joint Service Achievement Medal, (2 awards), U.S. Air Force Achievement Medal (5 awards), U.S. Army Achievement Medal (2 awards), National Defense Medal, U.S. Armed Forces Expeditionary Medal, and the NATO Medal. He has also earned the U.S. Army Jump Master Parachutist badge, the U.S. Army Special Forces (SF) Military Freefall Master Parachutist Badge, SF Combat Diver Badge, the U.S. Army Ranger Tab, and the Australian Army Parachute Badge from the 1st Squadron, Special Air Service Regiment.

He holds a B.S. in Applied Science and Technology and is a graduate of the Harvard Kennedy School of Government Senior Executive Fellows Program. Rick was appointed to the Senior Executive Service in 2011. Rick and his wife, Maria, have four fabulous kids; Christopher, Cole, Olivia, and Maxine. In his free time he enjoys being outdoors with his family and traveling.

Gary Eilerts, Famine Early Warning Systems Network, US Agency for International Development (USAID)

Gary Eilerts oversees management and implementation of U.S. Agency for International Development's Famine Early Warning Systems Network (FEWS NET), collaborating with international and national partners to provide on-the-ground information regarding food security issues in many areas of the world. He has led development of new FEWS NET program expertise in identifying climate change impacts in food insecure countries and in building new tools for monitoring the impacts of markets and trade on food security.

Previously, he worked with FEWS NET as a regional representative based in southern Africa. Eilerts has also held food security-related positions within the United Nations World Food Program's Vulnerability Analysis and Mapping Unit, the Food and Agriculture Organization, as well as in private voluntary organizations, consulting firms, and other international institutions. He has a post-graduate degree from the University of California at Los Angeles School of African Studies, and was a Peace Corps volunteer in Cote d'Ivoire.

Joseph Fiksel, Center for Resilience, Ohio State University

Dr. Joseph Fiksel is a faculty member in the Department of Integrated Systems Engineering at The Ohio State University, where he co-founded the Center for Resilience. From 2010 to 2014 he served as Special Assistant for Sustainability at ORD, working closely with the leadership to establish collaborative initiatives with EPA program and regional offices. He is an internationally recognized authority on sustainability and resilience, with over 25 years of research and consulting experience for government agencies, multi-national companies, and industry consortia. Dr. Fiksel received a B.Sc. from M.I.T. and a Ph.D. from Stanford University in Operations Research. He has held a number of positions in the private sector, and prior to joining Ohio State he was Vice President for Life Cycle Management at Battelle.

Molly Jahn, University of Wisconsin

Professor Molly Jahn leads a global alliance of research organizations focused on building and testing modern knowledge systems for sustainability. At the University of Wisconsin, she has been named a Wisconsin Institutes of

Discovery Fellow, and holds appointments in the Laboratory of Genetics, the Department of Agronomy, the Center for Sustainability and the Global Environment and the Global Health Institute. She holds adjunct appointments as senior faculty or research scientist at the US Department of Energy's Oak Ridge National Laboratory, Columbia University's Earth Institute and the University of Oxford's Martin School. She has previously served as dean of the University of Wisconsin's College of Agricultural and Life Sciences and Director of the Wisconsin Agricultural Experiment Station. In 2009-10, she was called to provide interim leadership as Deputy and Acting Under Secretary of Research, Education and Economics at the U.S. Department of Agriculture. She consults globally for business, governments, philanthropic organizations, and international multi-lateral institutions focused on agriculture, food, water and energy security, systemic risks originating in food system failures, life sciences and environment.

Fabien Laurier, Office of Science and Technology Policy

Dr. Fabien Laurier serves as Director of the National Climate Assessment and Lead for the Climate Data Initiative and the Climate Resilience Toolkit at the White House Office of Science and Technology Policy. He oversees federal agency activities for these initiatives and focuses on promoting greater integration between climate data, information, and tools. Prior to this assignment, Fabien was Advisor for Climate Change Adaptation at the White House Council on Environmental Quality, where he participated in the development of the President's Climate Action Plan and the implementation of Executive Order 13653: Preparing the United States for the Impacts of Climate Change.

Over the past several years, Fabien also worked in various capacities at the U.S. Global Change Research Program including as Acting Director (2009-2011), Deputy Director (2011-2012), and lead for the 2nd (2009) National Climate Assessment (2006-2009). Before joining USGCRP, Fabien was a researcher at the University of Maryland. His research included impact of "brown cloud" and intercontinental atmospheric transport on ocean chemistry as well as trace metals biogeochemistry in marine environment. Fabien received his Ph.D. in Chemical Oceanography from La Sorbonne Denis Diderot University (Paris, France, 2001).

Josh Lieberman, OGC Agriculture and Climate Working Group

Joshua Lieberman has worked with earth science information systems for more than 30 years. Originally trained as an Earth scientist, he did geological mapping, research, and mineral exploration in Alaska, the Alps, Greek Cyclades, Himalaya, and elsewhere, followed by a decade as an environmental scientist. Moving to the geospatial web world as VP of information architecture at Syncline, Inc., Josh worked on two major products, MapCiti and MapAccess, and led participation in a series of interoperability engineering projects with the Open Geospatial Consortium and other organizations. At Traverse Technologies and later as Senior Manager of geospatial analytics at Deloitte, Josh expanded his work to geosemantics, spatial data infrastructure, and advanced analytics for governmental and commercial clients. Presently he is a visiting researcher at Harvard, IP architect for OGC initiatives, and occasional teacher at UMBC. Within OGC, Josh co-chairs the Geosemantics group, serves on the OGC Architecture Board, and recently founded a domain working group focusing on geospatial standards in agriculture. Josh's research interests include geospatial ontology engineering, spatiotemporal analysis, and agricultural data science.

Tim Stryker, Office of Science and Technology Policy

Timothy Stryker serves as the U.S. Group on Earth Observations (USGEO) Program Director. In this capacity, he facilitates interagency coordination throughout the Federal government and manages USGEO's contribution to the intergovernmental Group on Earth Observations. Mr. Stryker has also served assignments at the U.S. Department of Commerce, the Office of Management and Budget, the Federal Communications Commission, and the U.S. Information Agency. Most recently, he served as Chief of Policy, Plans, and Analysis at the USGS Land Remote Sensing Program. Mr. Stryker received a degree in History from the University of Michigan and a Master's Degree in Foreign Service from Georgetown University

Mark Walbridge, US Department of Agriculture

Since October 2006, Dr. Mark R. Walbridge has served as the National Program Leader for the USDA/Agricultural Research Service's Water Availability & Watershed Management national research program, Natural Resources and Sustainable Agricultural Systems, Office of National Programs, Agricultural Research Service (ARS), Beltsville, MD. He directs research at approximately 25 ARS laboratories throughout the US on topics related to: 1) effective water management in agriculture; 2) erosion, sedimentation, and water quality protection; 3) improving conservation effectiveness; and 4) improving watershed management and ecosystem services in agricultural landscapes (http://www.ars.usda.gov/research/programs/programs.htm?NP_CODE=2110). Specific responsibilities include

managing the Long-Term Agro-ecosystem Research network (http://www.ars.usda.gov/ltar), ARS's Benchmark Research Watersheds, and research activities associated with the Conservation Effects Assessment Project. From November 2008 through September 2009, Dr. Walbridge served as Division Chief for Renewable Energy, Natural Resources and Environment, in the Research, Education, and Extension Office (REEO), in the Office of the Under Secretary for Research, Education, and Economics, USDA, where he coordinated relevant research and science-based activities across REE mission agencies.

Before coming to ARS, Dr. Walbridge was a Program Director for the National Science Foundation's Ecosystem Studies Program (Division of Environmental Biology, BIO Directorate) (2004-2006), Professor and Chair of the Department of Biology at West Virginia University (2001-2004), and Assistant/Associate Professor of Biology/Environmental Science & Policy at George Mason University (1989-2001). He was also the founding Editor-in-Chief of the journal Urban Ecosystems (1995-2004). Dr. Walbridge holds B.A. and M.S. degrees in Biology from West Virginia University, and a Ph.D. in Botany from the University of North Carolina. Dr. Walbridge's research career focused on the ecology and biogeochemistry of freshwater wetland and forest ecosystems, with particular interest in the cycling of phosphorus and associated elements. He has published more than 25 papers in the peer-reviewed literature.

Liangzhi You, International Food Policy Research Institute

Liangzhi You is a Senior Research Fellow at the International Food Policy Research Institute (IFPRI, www.ifpri.org) in Washington, DC, USA. His research focuses on assessing the impacts of technology changes in agricultural production and modeling agricultural land use systems, in particular on the evolution and drivers of change in agricultural systems, as well as on estimating the impact of climate change and climate variability on food security. Liangzhi earned a B.S. in hydraulic engineering from Tsinghua University, Beijing in 1990, and an M.S. in environmental economics and Ph.D. in civil and environmental engineering from Johns Hopkins University in 1999.

Remote Meeting Information

To join any of the online meetings:

1. Go to: https://esipfed.webex.com/mw0306ld/mywebex/default.do?siteurl=esipfed&service=1

2. Click join next to the meeting name, room names for breakout session, plenary and business meetings are explicit. (Note: There is a single session for breakout rooms each morning or afternoon).
3. Enter your name and email address If you are asked for a password, enter the access code given below, with no spaces or #.
4. To join the audio portion of the Conference meeting with
    a. Use your phone: Call-in toll-free number (US/Canada): 1-877-668-4493 Attendee access code followed by #
    b. Use the your computer, WebEx VoIP.

Jan 6 Plenary Session and ESIP 101 and Jan. 7 Business Meeting and Plenary

Access code/password: 23138379

Breakout Rooms

Room	Access Code	Room Specific Instructions
New Hampshire	23209855	http://commons.esipfed.org/taxonomy/term/1219
Potomac	23224916	http://commons.esipfed.org/room-location/potomac
Mt. Vernon	23237526	http://commons.esipfed.org/room-location/mt-vernon
Private Dining Room	23248943	http://commons.esipfed.org/taxonomy/term/608
Dupont	23225300	http://commons.esipfed.org/room-location/dupont
Foggy Bottom	23209460	http://commons.esipfed.org/room-location/foggy-bottom
New Hampshire (Plenary)	23138379	http://commons.esipfed.org/room-location/new-hampshire