

Celebrating

30 *years*
1985-2015



**ILLINOIS SUSTAINABLE
TECHNOLOGY CENTER**
PRAIRIE RESEARCH INSTITUTE

ISTC 30th Anniversary Celebration

November 9 & 10, 2015

Our Mission is to encourage and assist citizens, businesses, and government agencies to prevent pollution, conserve natural resources, and reduce waste to protect human health and the environment of Illinois and beyond.

ISTC integrates applied research, technical assistance, and information services to advance efforts in the areas of pollution prevention; water and energy conservation; and materials recycling and beneficial reuse.



ISTC 30th Anniversary Celebration Schedule

November 9, 2015

Morning Program - ISTC's History and Future

All events held in Illinois Ballrooms B & C at the I Hotel Conference Center, Champaign, unless otherwise noted.

8:00-8:30 AM Continental Breakfast and Networking

| | | |
|---------------|--|--|
| 8:30-8:40 AM | Welcome and Acknowledgements | Rick Winkel, UIUC Kevin O'Brien, ISTC Director |
| 8:40-9:10 AM | HWRIC to ISTC: Back to the Future All Over Again | Michael Barcelona |
| 9:10-9:40 AM | ISTC: The Early Years | David Thomas |
| 9:40-10:10 AM | 30 Years: Projects, Politics, and People | Gary Miller |

10:10-10:30 AM Refreshment Break and Networking

| | | |
|----------------|---|-----------------|
| 10:30-11:00 AM | Historical Hazards: Innovation and Application at the HWRIC | Craig Colten |
| 11:00-11:30 AM | ISTC and the Other Surveys: Working Together to Solve Illinois' Legacy Pollution Issues | Jeff Levensgood |

Midday Break

| | |
|---------------|---|
| 11:30-1:30 PM | Lunch (on your own) |
| 12:45-1:30 PM | ISTC Tour ISTC Building, One E. Hazelwood Dr., Champaign |

Afternoon Program - ISTC's History and Future (continued)

Emcee – Terry McLennand, PRI

| | | |
|--------------|---|---------------------------------|
| 1:30-2:10 PM | Incorporating Innovation into P2 and Sustainability | Timothy Lindsey |
| 2:10-2:35 PM | P2: Looking Back Towards the Future | Kevin Greene |
| 2:35-3:00 PM | Working with ISTC on Pollution Prevention: Past Accomplishments and Future Opportunities from a Federal Perspective | Jerri-Anne Garl |
| 3:00-3:25 PM | Sustainability Policy | Scott Bennett, State Senator |
| 3:25-3:30 PM | Wrap-up before Break and Keynote | Kevin O'Brien |
| 3:30-4:00 PM | Refreshment Break and Networking | |

Keynote Speakers

| | | |
|--------------|--|--------------------------------|
| 4:00-5:00 PM | A Brief History of Sustainability | Mark Ryan, New PRI Director |
| | ISTC's Solutions and Future Directions | Kevin O'Brien |

Evening Reception

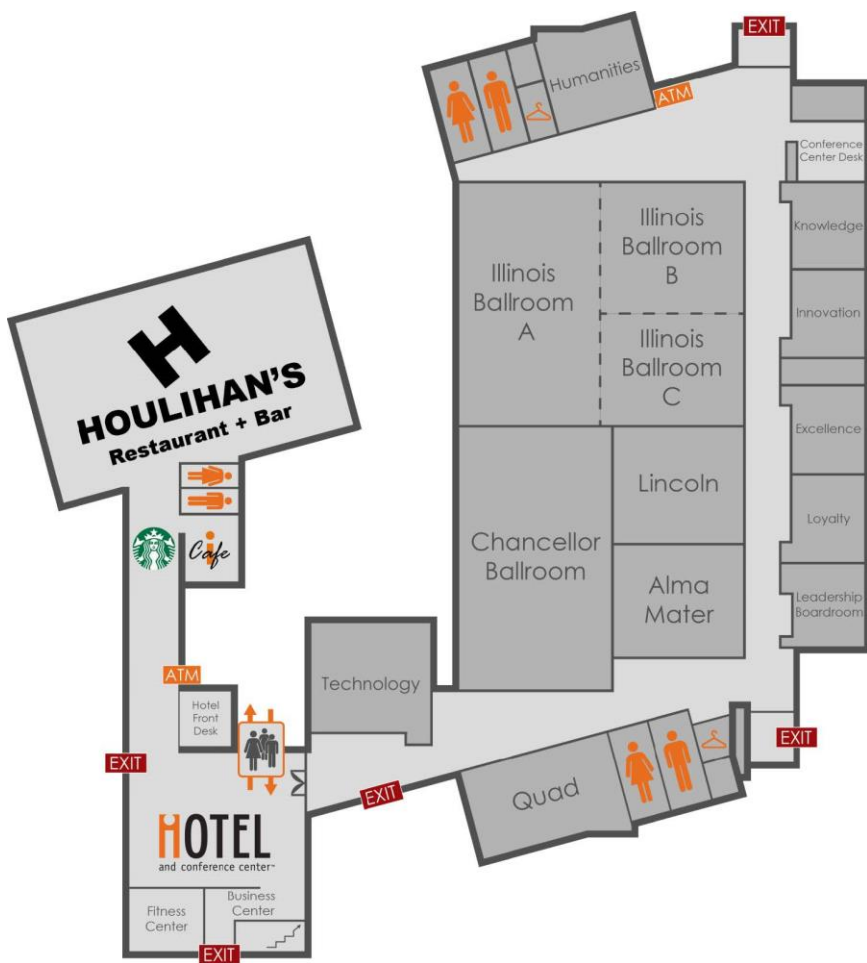
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| 5:00-6:30 PM | Networking & Refreshments |
| 5:30-6:00 PM | ISTC tour |

November 10, 2015

Morning Reception

ISTC Building, One E. Hazelwood Dr., Champaign

| | |
|---------------|--|
| 8:00-10:00 AM | Refreshments with Display Viewing and Networking |
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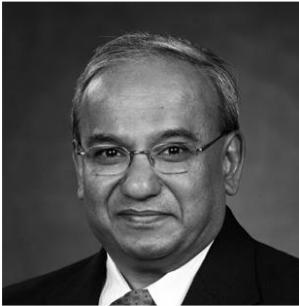
ISTC Directors



David Thomas, 1985-1997



George Vander Velde, 1998-2008



Manohar Kulkarni, 2010-2013



Kevin O'Brien, 2013-

An Abbreviated History of ISTC*

- 1984** The Hazardous Waste Technology Service Act mandated the IL Department of Energy and Natural Resources (DENR) to establish a Hazardous Waste Technology Exchange Service Program.
- 1985** Dr. Mike Barcelona of the Illinois State Water Survey (ISWS) was named interim director of the Program, which was initially housed with ISWS. The first staff, including Director Dr. David Thomas, was hired. The Program became known as the Illinois Hazardous Waste Research and Information Center (HWRIC).
- 1986** The Governor's Innovative Waste Reduction Awards (now the Illinois Governor's Sustainability Awards) were established. Research began on contaminants in Waukegan Harbor and other polluted sites in Illinois.
- 1987** HWRIC organized the state's first household hazardous waste collection drive in Champaign.
- 1988** Groundbreaking occurred for the new Hazardous Materials Laboratory, which would become the Center's headquarters in 1990.
- 1989** Legislation passed to officially change the name of the Program to HWRIC, and make it a division of the DENR (also the Center was designated as an allied organization at U of I). The Pollution Prevention (P2) Program was established at HWRIC.
- 1994** The Center's Chicago-based office opened, housing the Clean Manufacturing Program. The Center became a charter member and then host (in 1996) of the Great Lakes Regional Pollution Prevention Roundtable (GLRPPR). It continues in that role today.
- 1995** The Center and other State Surveys were transferred to the Illinois Department of Natural Resources. The Center became a major coordinator of the newly-established Printer's National Environmental Assistance Center (PNEAC).
- 1997** David Thomas resigned as director, and Dr. Gary Miller was named acting director. The Center's name was changed from HWRIC to the Waste Management and Research Center (WMRC). A Springfield office was opened to deal with state-owned contaminated lands.

**Many more details at <http://www.istc.illinois.edu/images/30Memento.pdf>*

- 1998** Dr. George Vander Velde was named director. The Chicago office relocated to Oak Brook. The Illinois River Project (aka Mud-to-Parks) began, under the guidance of Dr. John Marlin.
- 1999** The Southern Illinois technical assistance office was opened in Alton. The ADOP2T Program was initiated, establishing demonstration sites in industrial facilities.
- 2004** The first large-scale Mud-to-Parks project was launched. EPA funding piloted ADOP2T as a national program to diffuse innovative and sustainable technologies into targeted sectors (e.g., printed wiring board, metal finishing). WMRC opened a technical assistance office in Peoria.
- 2005** The Biodiesel Initiative began. The Center continues research on various green energy projects today.
- 2007** The Center's Sustainability Seminar series began. Over 120 seminars have occurred to date. They are archived on the ISTC website.
- 2008** Dr. George Vander Velde retired, and Dr. Gary Miller was named interim director. The Governor transferred the Center and Surveys to the U of I. The Center was officially named the Illinois Sustainable Technology Center.
- 2009** Dr. Gary Miller resigned, and Dr. John Marlin was named acting director. The Sustainable Electronics Initiative was established.
- 2010** Dr. Manohar Kulkarni became director of ISTC.
- 2011** The Illinois Conservation of Resources and Energy (ICORE) Program was developed to assist underserved regions in Illinois. It continues today.
- 2012** The Indoor Climate Research and Training (ICRT) Program became part of ISTC, focusing on energy efficiency of residential buildings and indoor air quality. Dr. David Thomas was named interim operating director of the Center.
- 2013** The state legislature established a State Pollution Prevention Scientist position at ISTC, filled by Dr. Kishore Rajagopalan. Dr. Kevin O'Brien became director of the Center.
- 2014** The One Billion Gallon H₂O Challenge was initiated to promote water conservation in businesses and other organizations. The "Zero Waste Illinois" initiative was established. The Illinois Green Office Challenge was launched in central Illinois.

Speakers



Michael Barcelona

Michael Barcelona won a scholarship to St. Mary's College in Winona, Minnesota, where he earned a B.S. in chemistry. Upon graduation, he attended Northeastern University in Boston and earned an M.S. in chemistry. He followed his love of the sea to the University of Puerto Rico at Mayaguez and received his Ph.D. in marine chemistry. From there, he was a postdoctoral research associate at the California Institute of Technology in Pasadena, CA, in environmental engineering. Three years later, he accepted a position at the Illinois State Water Survey (ISWS). While at ISWS, he became head of the Water Chemistry Group, and, in 1985, he helped found the Illinois Hazardous Waste Research and Information Center (now ISTC). In 1989, he became a professor at Western Michigan University (WMU) where he directed the Institute for Water Sciences and expanded his research efforts to develop groundwater remediation approaches. In 1994, Dr. Barcelona became a research scientist in the Department of Environmental and Water Resources Engineering at the University of Michigan and directed the National Center for Integrated Bioremediation Research and Development with the Department of Defense and U.S. EPA support. He returned to WMU in 2001 as professor and later chair of the Department of Chemistry (2002-2007) where he continues to teach and conduct research. His research groups at Illinois, Western Michigan University, and the University of Michigan focused on hazardous waste, groundwater quality and remediation, and the analysis of organic compounds in the environment. Overall, Dr. Barcelona has authored or co-authored more than 100 papers, book chapters, and reports, and served as editor of Groundwater Monitoring and Remediation from 1992-2002. He has received a number of awards and has also served as a reviewer and consultant on a wide variety of groundwater and hazardous waste-related cleanup efforts in the U.S., Europe, and the Middle East. He is a member of the American Chemical Society, the American Geophysical Union, and the National Ground Water Association.



1998 Center Groundbreaking



Scott Bennett

State Senator Scott Bennett (D-Champaign) is a fifth-generation Central Illinoisan. Before being appointed to the Illinois Senate for the 52nd State Senate District, Sen. Bennett was an assistant Champaign County state's attorney. Sen. Bennett grew up in Gibson City, where four generations of his family worked on their family farm. He moved to Champaign-Urbana to attend law school at the University of Illinois after graduating from Illinois State University. He is currently the President-elect of the Urbana Rotary, Co-Chairperson of the United Way's 2015 READY. SET. GROW! Young Children's Expo, a member of the Community Justice Task Force as well as many other civic organizations. He is interested in working with others to find ways to resolve community problems. Sen. Bennett's first priority as state senator has been to protect the Mahomet Aquifer. The aquifer serves as the primary water supply for 15 counties across Central Illinois including Champaign and Vermilion counties. He is working to find a permanent solution to protect the aquifer for our children and their children for generations to come to ensure they can rely on this tremendous resource. Sen. Bennett serves on the Agriculture, Appropriations II, Criminal Law, Environment & Conservation, Higher Education and Labor Committees.



Craig Colten

Dr. Colten is the Carl O. Sauer Professor of Geography at Louisiana State University. After completing his Ph.D. in 1984, he engaged in research on historical hazardous waste issues for the Illinois Hazardous Waste Research and Information Center for a decade. That experience led to opportunities in the private sector, where he worked for PHR Environmental Consultants in the Washington DC area, managing the company's East Coast office and supervising Superfund-related litigation research. In 1996, Dr. Colten took a position with Texas State University, which was followed by an invitation to join the faculty at Louisiana State University in 2000. Currently, he is involved in research on community resilience, funded by the National Institute of Environmental Health Sciences. He is the author of the award winning *Unnatural Metropolis: Wrestling New Orleans from Nature* and the recently released *Southern Waters: Limits to Abundance*.



Jerri-Anne Garl

Jerri-Anne Garl has over 36 years of experience working with local, state, and federal agencies, as well as NGOs and the public, to identify and solve complex environmental problems that require innovative solutions. Chief of the Materials Management Branch at USEPA Region 5's Land and Chemicals Division since 2007, Garl oversees programs designed to prevent pollution, promote recycling and sustainable materials management, as well as safe disposal of municipal and other non-hazardous solid wastes. Her current focus is on developing and strengthening efforts at the federal, state, and local level to promote zero waste and support green manufacturing partnerships that encourage an energy- and materials-efficient economy. Prior to this assignment, Garl was founding Director of Region 5's Office of Strategic Environmental Analysis, which launched the Great Cities Partnership Program, working directly with the Region's largest cities to address environmental problems that were being missed in the core regulatory programs. She also developed standardized environmental indicators for environmental, geographic, demographic, political, and economic drivers and trends across the six-state area to aid the Region in identifying priorities and measuring progress. Previously, Garl managed Region 5's groundwater protection program and served as district geologist for the Ohio EPA Southeast District Office, supervising and conducting ambient groundwater monitoring, geologic field surveys, and contaminant analysis at hazardous and non-hazardous waste disposal units and working with communities to protect groundwater-source public water supply systems. Garl holds an M.S. in hydrogeology from Kent State University and a B.S. in geology from Ohio University.



Kevin Greene

Kevin Greene serves as the clean air policy advisor for the Illinois Environmental Protection Agency's Bureau of Air. He coordinates an internal agency team that is evaluating policy choices for implementing the federal Clean Power Plan rule. Greene has been with IEPA since 1996. Previously he managed IEPA's Office of Pollution Prevention. Prior to joining IEPA, Greene worked for three non-government organizations. He was also a member of the Illinois Green Governments Coordinating Council. Greene graduated from the University of Illinois at Urbana-Champaign in 1974.



Jeff Levensgood

Dr. Jeff Levensgood is a wildlife and ecological toxicologist with the Illinois Natural History Survey and holds appointments in the Departments of Comparative Biosciences and Natural Resources and Environmental Sciences at the University of Illinois. His research interests include ecological correlates of contaminant exposure in fish and wildlife, interactions between contaminant exposure and other stressors impacting wildlife health, and the ecology of wetland wildlife in disturbed systems. Jeff has a long history of working closely with the Illinois Sustainable Technology Center on environmental health issues. Dr. Levensgood earned a B.A. in biology from Edinboro University, an M.S. in biology from Shippensburg University, and a Ph.D. in zoology from Southern Illinois University.



Timothy Lindsey

Dr. Tim Lindsey leads Caterpillar's efforts to build a culture of sustainability across the entire Caterpillar enterprise to drive innovation and build competitive advantage throughout the value chain. Dr. Lindsey works with business units to embed sustainability principles into both corporate roles (e.g., research, product development, human resources, strategy, and risk) and operational functions (e.g., supply chain, manufacturing, quality, logistics, dealerships, and customer job sites). He began his Caterpillar career in February of 2012, after spending 20 years at the University of Illinois, where he led sustainability research, education and outreach efforts. Prior to his academic career, he was with Exxon for seven years, where he served in various operational roles at one of the world's largest mining operations. He holds B.S. and M.S. degrees in environmental engineering from Southern Illinois University and a Ph.D. in urban and regional planning from the University of Illinois.



John Marlin on sediment from the Illinois River



Gary Miller

From 1985 until 2009, Dr. Gary Miller was assistant director of ISTC and twice served as acting director. His duties included managing the Center's research, pollution prevention, and data management programs. Dr. Miller was actively involved with providing pollution prevention assistance to businesses, developing ISTC's pollution prevention technology research capabilities, and developing related regional and national information resources. Dr. Miller now serves as the associate executive director of the Prairie Research Institute at the University of Illinois. He is also an active member of the Illinois Green Government Coordinating Council representing U of I. In addition, he is currently co-chair of the Illinois Sustainable Universities and Colleges Subcommittee for the Office of the Governor and serves on the Executive Committee of Illinois' CyberGIS Center. From 2007 to 2008, Dr. Miller served as chair of the Board of Directors for the National Pollution Prevention Roundtable and, for 12 years, was director of the Printers' National Environmental Assistance Center, one of the first compliance assistance centers funded by USEPA. He has been the PI or co-PI of 19 grants totaling more than \$9 million in funding. Since their inception, Dr. Miller has been actively involved in the Great Lakes Regional Pollution Prevention Roundtable (GLRPPR) and the National Pollution Prevention Roundtable. Prior to joining the Institute, Dr. Miller was assistant professor of civil engineering and environmental science at the University of Oklahoma. From 1979 to 1985, he was also assistant co-director of the National Center for Groundwater Research at the University of Oklahoma. Dr. Miller earned an M.S. in environmental science and a Ph.D. in engineering from the University of Oklahoma. He earned a B.S. in biology from Oral Roberts University.



Gary Miller and David Thomas at ISTC building



Kevin O'Brien

Dr. Kevin O'Brien is the director of the Illinois Sustainable Technology Center (ISTC) at the University of Illinois. ISTC uses its resources and expertise to assist organizations in addressing energy needs and meeting other sustainability goals. Dr. O'Brien has over a decade of experience in the development of novel methods to capture carbon from large point sources – such as coal-fired power plants. He is experienced with methods of capture from both pre- and post-combustion systems. He has a number of peer-reviewed publications and received patents for the development of new capture technologies. Dr. O'Brien's knowledge and experience includes the challenges involved when scaling-up and implementing technologies within a power plant environment. He has managed multi-million-dollar programs related to carbon capture and carbon management technologies. His international project experience includes Europe, Middle East, and Asia. Among his professional awards are R&D Magazine's R&D 100 award and a Federal Laboratory Consortium Award for Technology Transfer. His experience includes close collaboration with the US Department of Energy on a variety of carbon capture and energy efficiency-based projects. Dr. O'Brien is the principal investigator for the \$75 Million project to retrofit Abbott Power Plant for carbon capture and utilization. This project offers Illinois the ability to maintain lower energy costs, maintain a strong energy industry, and create a new market opportunity for the capture and utilization of CO₂ from large industrial sources. It is an opportunity to "Turn Pollution into Profit" for Illinois. Dr. O'Brien holds M.S. and Ph.D. degrees in macromolecular engineering from Case Western Reserve University.

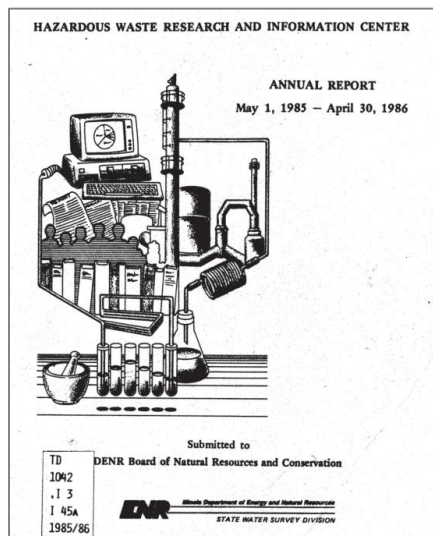


2001 All Staff Photo



Mark Ryan

Dr. Mark Ryan recently was appointed executive director of the Prairie Research Institute at the University of Illinois. Prior to that, he spent 31 years at the University of Missouri. There, he held the William J. Rucker Endowed Chair in Wildlife Conservation and a Curator's Distinguished Teaching Professorship at the University of Missouri (MU). For the last 10+ years he served as director of MU's School of Natural Resources. Dr. Ryan holds a B.S. in wildlife science from the University of Minnesota, a M.S. in wildlife biology, and Ph.D. in animal ecology from Iowa State University. At the University of Missouri, Dr. Ryan received the prestigious Wm. T. Kemper Award for Teaching Excellence in 1993. And, in 2001, he was recognized with the U.S. Department of Agriculture's National Award for Excellence in College and University Teaching. He received MU's President's Award for Outstanding Teaching in 2004 and, in 2006, the MU Alumni Association awarded him their Faculty Alumni Award. Dr. Ryan's research program is focused on the ecology and conservation of birds in grassland, wetland, and agricultural ecosystems. His primary research foci since the early 1980s have been related to endangered bird ecology and conservation (with special emphasis on Piping Plovers) and on the impacts of federal farm legislation on the population dynamics of grassland birds. He has published over 75 refereed journal articles, including several related to teaching and learning. Dr. Ryan was elected as a Fellow of The Wildlife Society, the international professional society of his discipline, in 2012.



Cover of the First Annual Report



David Thomas

Dr. David L. Thomas received his B.S. in zoology (1965) and M.S. in ecology (1967) from the University of Illinois. He received his Ph.D. in ecology and systematics (1971) from Cornell University. From 1970 through early 1985, Dr. Thomas worked for two environmental consulting firms and a Boston-based architect-engineering firm on various environmental projects. From May 1985 through November 1997, Dr. Thomas was the director of the Illinois Waste Management and Research Center (now ISTC), which was a Division within the Illinois Department of Natural Resources (DNR). He oversaw all of the Center's activities, including its pollution prevention program and sponsored research program. He was on the first Governing Board for the National Pollution Prevention Roundtable from 1990 to 1994 and was chair of the Board of Directors from October 1993 to September 1994. He represented the Roundtable on EPA's American Institute of Pollution Prevention (AIPP) from 1992 through 1996. In 1997, Dr. Thomas became chief of the Illinois Natural History Survey (INHS). At the Survey, Dr. Thomas had significant involvement in issues related to exotic invasive species. In 2000, he was non-federal co-chair for the Research and Information workgroup for the National Invasive Species Advisory Committee. For a couple of years, he chaired DNR's Invasive Species Working Group that was addressing research, management, and control of invasive species within Illinois. He has been active on issues related to the restoration of the Illinois River, including serving on the Science Advisory Committee to the Illinois River Advisory Council and on The Nature Conservancy's Science Advisory Committee for restoration of Emiquon National Wildlife Refuge. He was an active member of the Steering Committee for Chicago Wilderness during his tenure as chief of INHS. Dr. Thomas received Chief Emeritus status when he retired from the Survey in February 2008. He has also been a member of the Board of Trustees for the Illinois Chapter of The Nature Conservancy, and he will become chair in December 2015.



David Thomas on a tour of ISTC with then-Governor Edgar in 1990

Thank You

Thank you to our speakers and to former State Senator Rick Winkel and Terry McLennand, director of external affairs for the Prairie Research Institute, for being emcees for the November 9th program.

Thank you to all current and past ISTC (HWRIC and WMRC) staff for their dedication to the mission and work of the Center during the past 30 years.



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