

-  International
-  Emerging Technology
-  Symposium



MAY 10-11, 2016

THE WESTIN O'HARE  ROSEMONT, ILLINOIS

Co-convened by:



International Emerging Technology Symposium



Dear Symposium Participant,

The co-convening organizations of the fifth International Emerging Technology Symposium (IETS) welcome you and thank you for your participation.

The plumbing, mechanical and water-efficiency industries continue to face new and serious challenges. The entrepreneurs, industry leaders, experts and researchers you will hear from over the course of the next two days were selected based on their ability to provide valuable ideas and information that our attendees will find timely and useful.

In order to make the best use of our time together, we also need to hear from you! It is our hope that by participating in a forum that allows for candid discussion and networking, our attendees will leave the symposium knowing that they are better informed on these complex issues, and the emerging technologies and best practices that are being developed to address them.

As always, we are interested in hearing from our participants. Please make a point to complete our post program survey, which you'll find in your inbox shortly after the conclusion of the symposium. This feedback is important as we strive to provide the most comprehensive program possible. We look forward to seeing you again at the sixth International Emerging Technology Symposium in the spring of 2018.



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Dear Symposium Participant,

On behalf of the World Plumbing Council, welcome to the fifth International Emerging Technology Symposium. We are proud to again co-convene the IETS.

We want to make you aware of a new and important development regarding industry research. The WPC has developed a database dedicated to plumbing and water use research that is currently available on our website. The database employs free and open-source software to accommodate international participation by all. The primary goals of the database are to encourage collaboration among researchers, reduce redundant efforts, facilitate the sharing of data and information, and to disseminate knowledge.

The database is intended to act as a repository for all research efforts in the areas of plumbing, water efficiency, water access, safe sanitation, landscape irrigation, and other uses of water. Users are able to search the database and upload new research projects as they are completed.

We encourage all to visit <http://www.worldplumbing.org> and follow the link to the WPC Research Database.

Thank you for all you do to further our vital industry!

SUDHAKARAN NAIR

Chairman



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8:00 - 8:30 a.m.

WELCOMING REMARKS

Russ Chaney, IAPMO, CEO; **Barb Higgins**, PMI, CEO/Executive Director; and **Billy Smith**, ASPE, CEO/Executive Director

Introduction of Co-convening Organizations, Special Guests, Benefactors, Patrons and Supporter Sponsors; Introduction of Moderators: **Bob Mader**, **John Mesenbrink**, **Bob Miodonski**, **Jeff Patchell**

Day 1 AM Moderator – Jeff Patchell

8:30 - 9:15 a.m.

KEYNOTE SPEAKER

Professor Stuart White, *Director of the Institute for Sustainable Futures*

PODIUM PRESENTATIONS

9:15 - 9:45 a.m.

Paula Kehoe, *Director of Water Resources, San Francisco Water*

Innovation in Urban Onsite Water Reuse

9:45 - 10:15 a.m.

Markus Lenger, *Principal, CleanBlu*

Eric Bowler, *Senior Engineer, Whirlpool Corporation*

Achieving Zero Net Water

10:15 - 10:45 a.m.

**REFRESHMENT BREAK AND VISITATION
OF SPONSOR DISPLAYS**

10:45 - 11:15 a.m.

Jonathan Gray, *Principal, Interface Engineering*

Sustainable Water Reclaim Systems: Designing within Regulatory Challenges

11:15 - 11:45 a.m.

Shawn Bray, *Cooling Tower Water Conservation Educator, Terlyn Industries*

Lynn Rushmore, *Vice President, Terlyn Industries*

Maximum Sustainable Cooling Tower Water Conservation

11:45 a.m. -
12:15 p.m.

Kent Sovocool, *Senior Conservation Research Analyst,
Southern Nevada Water Authority (SNWA)*

**Let's Get W.E.T. Together in Vegas! The Southern Nevada
Water Authority's Water Efficient Technologies Program**

12:15 - 1:15 p.m.

LUNCH AND VISITATION OF SPONSOR DISPLAYS

TUESDAY, MAY 10, 2016

 **DAY 1: AFTERNOON SESSION**

Day 1 PM Moderator – Bob Miodonski

PODIUM PRESENTATIONS

1:15 - 1:45 p.m.

Bill Gauley, P.Eng., *Principal, Gauley Associates*

"First – Do No Harm" – Hippocratic Oath

1:45 - 2:15 p.m.

Steven Buchberger, *College of Engineering and Applied
Science, University of Cincinnati*

**Estimating Peak Water Demands in Buildings with
Efficient Fixtures – Highlights and Extensions from the
2015 IAPMO / ASPE / WQA Study**

2:15 - 2:45 p.m.

Dr. Michael Gormley, *Centre of Excellence in Sustainable
Building Design, Heriot Watt University, Edinburgh*

**PRoBE (Pathogen Research in the Built Environment) –
Toilets, Turbulence and Public Health**

2:45 - 3:15 p.m.

H.W. (Bill) Hoffman, P.E., *President, H.W. (Bill) Hoffman &
Associates, LLC*

Measurement, Metering, Benchmarking and Metrics

3:15 - 3:45 p.m.

**REFRESHMENT BREAK AND VISITATION
OF SPONSOR DISPLAYS**

- 3:45 - 4:15 p.m. **Jeff Patchell**, *Publisher, Connection Magazines Pty Ltd – Australia*
Uber Plumbing Technologies from Down-Under
- 4:15 - 4:45 p.m. **Steve Baden**, *Executive Director, RESNET*
Mark Johnson, *Executive Vice President & Director of Business Development, International Code Council (ICC)*
Creating a Market Value for Water Efficiency in Residential Buildings – The RESNET/International Code Council Water Efficiency Rating Index ANSI Standard
- 4:45 - 5:45 p.m. **PANEL DISCUSSION**
Hot Water System Efficiency and Research Update
 - **Jerry Callahan**, *CEO, Heatworks*
 - **David Epstein**, *Managing Director, USA, Orbital Systems, Inc.*
 - **Gary Klein**, *President, Gary Klein and Associates, Inc.*
 - **J. Joe Scott**, *Vice President, Cannon Design*

END OF DAY 1

- 6:00 - 8:00 p.m. **EVENING NETWORKING RECEPTION – LaSalle Ballroom**
 - Visitation of Sponsor Displays

Day 2 AM Moderator – John Mesenbrink

PODIUM PRESENTATIONS

- 8:00 - 8:30 a.m. **Lorraine White**, *Water Energy Program Manager, GEI Consultants*
Advancing Energy Efficiency in Urban Water Systems
- 8:30 - 9:00 a.m. **Mary Ann Dickinson**, *President and CEO, Alliance for Water Efficiency*
Water Policy and New Technology: Examining the Connection
- 9:00 - 9:30 a.m. **Stephanie Tanner**, *Lead Engineer, U.S. Environmental Protection Agency's (EPA) WaterSense Program*
WaterSense: The Next Decade
- 9:30 - 10:00 a.m. **Rob Zimmerman**, *Sr. Manager–Sustainability, Kohler Co.*
Michael Luettggen, *Sr. Staff Engineer, Kohler Co.*
Onsite Sanitation for the Developing World: Challenges and Insights
- 10:00 - 10:30 a.m. **REFRESHMENT BREAK AND VISITATION OF SPONSOR DISPLAYS**
- 10:30 - 11:00 a.m. **Daniel Gleiberman**, *Manager Product Compliance and Government Affairs, Sloan Valve Company*
Chemistry 101 – Behind the Wall Considerations and Solutions for Reduced Water Consumption Rates of Urinal Fixtures
- 11:00 - 11:30 a.m. **Andrew Whelton**, *PhD, Assistant Professor of Civil and Environmental Engineering, Purdue University*
Premise Plumbing Decontamination: Research and Technology Needs

11:30 a.m. -
12:00 p.m.

Janet E. Stout, PhD, *President and Director, Special Pathogens Laboratory / Research Associate Professor, University of Pittsburgh Swanson School of Engineering*
Common Mistakes in Managing Legionella in Large Buildings

12:00 - 1:00 p.m.

LUNCH AND VISITATION OF SPONSOR DISPLAYS



WEDNESDAY, MAY 11, 2016

DAY 2: AFTERNOON SESSION

Day 2 PM Moderator – Bob Mader

PODIUM PRESENTATIONS

1:00 - 2:30 p.m.

Tim Keane, *Consulting Engineer, Legionella Risk Management*
Gary Klein, *President, Gary Klein and Associates, Inc.*
Dr. Marc Edwards, *Professor, Virginia Tech*
Water Quality, Water Savings and Water-Energy Nexus – Three Issues, One Solution?

2:30 - 2:50 p.m.

REFRESHMENT BREAK AND VISITATION OF SPONSOR DISPLAYS

2:50 - 4:10 p.m.

PANEL DISCUSSION

Mitigating Opportunistic Pathogen Outbreaks from Premise Plumbing Systems

- **Dr. Jamie Bartram**, *Director, The Water Institute at UNC*
- **Dr. Marc Edwards**, *Professor, Virginia Tech*
- **Tim Keane**, *Consulting Engineer, Legionella Risk Management*
- **Gary Klein**, *President, Gary Klein and Associates, Inc.*
- **Dr. Janet Stout**, *President and Director, Special Pathogens Laboratory / Research Associate Professor, University of Pittsburgh Swanson School of Engineering*
- **Dr. Andrew Whelton**, *Assistant Professor of Civil and Environmental Engineering, Purdue University*

4:10 - 4:30 p.m.

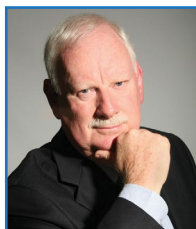
DRAWING FOR REGISTRATION / GIFT CARD

Closing Remarks from Co-convenor CEOs, Moderators, Speakers, Panelists and Attendees



MORNING MODERATORS

DAY 1 AM MODERATOR



Jeff Patchell, Managing Director, Connection Magazines Pty Ltd. Australia, had a background in product marketing and advertising prior to establishing Connection Magazines 30 years ago.

Today, the company is Australia's leading publisher of independent technical/business magazines covering the plumbing, residential building, electrical and connected technology sectors. Its www.build.com.au website is also home to the country's major information website for consumers eager to learn more about the home building and the renovation process. Connection Magazines is a multi-faceted business that also manages a range of related industry conferences and technical websites.

Being neither a journalist nor plumber, or for that matter a handyman, Patchell was "ideally" placed to launch his first technical magazine – *Plumbing Connection*. Just don't ask his wife, Jenny, about his woeful handyman exploits around the family home!

Today, the company's magazines and other media assets are acknowledged as being the place the industry's turns to first for accurate and timely advice on codes and standards, technology and installation know-how.

DAY 2 AM MODERATOR



John Mesenbrink has been covering the plumbing, mechanical and HVAC industry for more than 14 years for various trade publications. He is currently President of Mechanical-hub.com, an online resource for plumbing, HVAC and hydronic contractors.

He also is Editor-at-Large for *Contractor* magazine and contributing writer for *Net Zero Buildings* magazine.

AFTERNOON MODERATORS

DAY 1 PM MODERATOR



Bob Miodonski has the distinction of serving as a moderator for every one of the International Emerging Technology Symposiums dating back to 2008. He is Group Publisher of BNP Media's Plumbing Group, which consists of industry-leading print and digital magazines, websites and e-newsletters. Titles include: *Supply House Times*, *Plumbing & Mechanical*, *PM Engineer* and *Reeves Journal* magazines; *Bath & Kitchen Pro e-News*; *PVF e-News*; *Radiant & Hydronics e-News*; and www.RadiantAndHydronics.com. He also is publisher of two official publications of the Radiant Professionals Alliance: *Radiant Comfort Guide* and *Radiant & Hydronics Report*.

Miodonski has covered the plumbing, piping and heating-and-cooling industry for 26 years as an editor and publisher of business-to-business magazine brands. He previously worked in the newspaper business as a reporter and editor. He holds a bachelor's degree from Vanderbilt University, where he graduated summa cum laude, and a master's degree from the Northwestern University Medill School of Journalism, where he has worked as a part-time instructor.

DAY 2 PM MODERATOR



Bob Mader has spent a frighteningly long time as a journalist in the plumbing, mechanical contracting and HVACR industries. He is currently the Editorial Director for *Contractor*, *Contracting Business*, and *HPAC Engineering* magazines, as well as the Content Director for the annual Comfortech Show, all of which are part of Penton's Energy and Buildings Group.

Mader is a graduate of the University of Notre Dame with an A.B. in American studies with a communications concentration.



KEYNOTE SPEAKER



Professor Stuart White is Director of the Institute for Sustainable Futures where he leads a team of researchers who create change toward sustainable futures through independent, project-based research. With more than 30 years' experience in sustainability research, Professor White's work focuses on achieving sustainability outcomes for a range of government, industry and community clients across Australia and internationally. This includes both the design and assessment of programs for improving decision making and improving resource use. Professor White has written and presented widely on sustainable futures and is a regular commentator on sustainability issues in the media. In 2012, he was awarded the Australian Museum Eureka Prize for Environmental Research.

Professor White has undertaken research in the area of urban water, water efficiency, least-cost planning in the water industry and distributed water systems since 1992, and was the editor and main author of the first WSAA Guide to Demand Management for Water Utilities. He has worked on projects associated with Sydney Water since 1995 (the Sydney Water Project: Water Efficiency) and led the development of the first end-use model and options analysis for meeting operating licence consumption targets starting in 1997.

PODIUM PRESENTERS AND PANELISTS



Steve Baden has worked in the residential energy efficiency field for more than 25 years, including 18 years with home energy ratings and energy mortgages on both the state and national levels, and 10 years administering a state energy office. Baden initiated the “Warm Homes for Alaskans Initiative,” which received the 1993 National Award for the Most Outstanding State Housing Program from the National Council of State Housing Agencies. He was also awarded Lifetime Achievement Awards from the U.S. Department of Energy and RESNET.



Dr. Jamie Bartram, Ph.D., Water Institute's Director and the Don and Jennifer Holzworth Distinguished Professor of Environmental Sciences and Engineering, has more than 35 years of experience in WaSH, environmental and public health, and international policy formation. Bartram previously worked in key positions at WHO, serving most recently as Coordinator of Water Sanitation and Health, and Chair of UN Water. In these roles, he provided leadership in the rehabilitation of the WHO/UNICEF Joint Monitoring Programme (JMP). He has won many prestigious awards, is a member of numerous committees and associations, including the Guidelines Development Group for WHO Sanitation and Health Guidelines, the Thematic Advisory Group to WHO on its “Building adaptation to climate change in health in least developed countries through resilient WASH” projects, and the Sanitation and Water for All (SWA) Steering Committee. He is active on the editorial board of several journals and has authored, or contributed to, more than 200 books, publications and presentations.



Eric Bowler is a Senior Engineer, specializing in residential energy and water systems, at Whirlpool Corporation in Benton Harbor, Mich. He is the program lead of the ReNEWW (Retrofitted Net-zero Energy, Water & Waste) House – a living laboratory/sustainable living showcase collaboration between Purdue University and Whirlpool Corporation. Bowler's team finished runner-up in the 2012 Hult Prize, the world's largest student competition for social good, with a business case for microfinanced solar lanterns for the African market. He holds a dual M.S. in Sustainable Energy Engineering from the Royal Institute of Technology, Stockholm (KTH) and the Polytechnic University in Turin (PoliTo). His master's thesis was titled *Residential Resource Management* and focused on staged deep energy retrofits in various markets of the United States. Bowler has a B.S. in mechanical engineering from Purdue University. He is passionate about improving the standard of living for people everywhere, while ensuring a transition to a sustainable energy and water infrastructure.

PODIUM PRESENTERS AND PANELISTS



Shawn Bray is the Cooling Tower Water Conservation Educator for Terlyn Industries. His main focus is to introduce and educate individuals and companies about the effective use of a tested and proven Cooling Tower Water Conservation Program that reduces bleed off from the typical 25-50 percent down to only 3 percent. The end result is tremendous water conservation, more efficient HVAC mechanical operation, and lower utility costs.



Dr. Steven Buchberger has authored more than 125 archived publications and directed \$11 million in research projects since joining the University of Cincinnati faculty in 1988. Buchberger has advised 65 graduate students at UC and other institutions. Three of his students have won national best paper awards from the American Society of Civil Engineers. Buchberger served as Associate Editor of the ASCE Journal of Water Resources Planning and Management for 10 years; he was Chief Editor of two special issues on Water Distribution Systems Analysis.

Buchberger is a registered Professional Engineer in the State of Colorado.



Jerry Callahan grew up on Cape Cod, Mass., and studied naval architecture at MIT and Stevens Institute of Technology. He began his career as a civil engineer at the second-largest dredging and marine construction company in the world, and rose to General Superintendent (COO) seven years later. After that, he began a series of business turnarounds, including some “fast track” plant relocations. He also started up a few companies, such as Blue Rhino Propane Cylinder Exchange and National Packaging Solutions Group. He has been a principal in a private equity group, has run several portfolio companies for private equity firms, and has also provided a broad range of management consulting from strategy development to M&A advisory services. Along the way, he received an M.B.A. from the University of Chicago. Callahan has recently patented and developed the world’s first fully electronic water heater, and as the CEO of ISI Technology (www.myheatworks.com), is focused on commercializing this technology.

Callahan enjoys competitive sailboat racing, cycling, and many other outdoor activities. He is an active member of WPO and CEO, and lives outside of Charleston, S.C.

PODIUM PRESENTERS AND PANELISTS



Mary Ann Dickinson is President and CEO of the Alliance for Water Efficiency, a nonprofit organization dedicated to promoting the efficient and sustainable use of water in the United States and Canada. In 2014, the Alliance won the U.S. Water Prize in the nonprofit category.

Prior to joining the Alliance in July 2007, Dickinson was Executive Director of the California Urban Water Conservation Council, a nonprofit organization composed of urban water supply agencies, environmental groups, and other entities managing statewide water conservation in California.

Prior to joining the Council in January of 1999, Dickinson was employed at the Metropolitan Water District of Southern California, and served as Deputy Director for Public and Governmental Affairs at the South Central Connecticut Regional Water Authority. She is also a veteran resource manager, having worked at the Connecticut Department of Environmental Protection for 18 years.

A graduate of the University of Connecticut with a degree in environmental planning, Dickinson is Chair of the Efficient Urban Water Management Specialist Group for the International Water Association, past Chair of the American Water Works Association National Water Conservation Division, and Past President of the California Irrigation Institute.

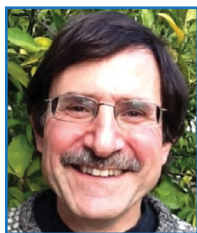


Dr. Marc Edwards received his bachelor's degree in biophysics from SUNY Buffalo in 1986, and received his M.S. and Ph.D. in Environmental Engineering from the University of Washington in 1988 and 1991, respectively. In 2004, *Time* magazine dubbed Edwards "The Plumbing Professor" and listed him amongst the four most important "Innovators" in water from around the world.

Edwards has received numerous awards, including Outstanding Paper Awards, a Presidential Faculty Fellowship from the White House, the H.P. Eddy Medal, the Walter Huber Research Prize, a MacArthur Fellowship, the Praxis Award in Professional Ethics, and the IEEE Barus Award for "courageously defending the public interest at great personal risk."

Edwards is the Charles Lunsford Professor of Civil Engineering at Virginia Tech, where he teaches courses in environmental engineering, applied aquatic chemistry and engineering ethics. He has published more than 180 peer-reviewed journal articles, made more than 300 national and international conference presentations, and has delivered dozens of keynote and endowed lectures. Edwards is a Past-president of the Association of Environmental and Engineering Science Professors. In 2004 and 2010, he testified to the United States Congress on the issue of lead in Washington, D.C. drinking water. His research group is currently emphasizing research on premise plumbing.

PODIUM PRESENTERS AND PANELISTS

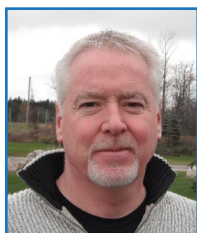


David Epstein is the Managing Director of ORBITAL SYSTEMS, Inc., a subsidiary of the Swedish parent.

Epstein is also an advisor, investor, board member and management consultant at Epstein Advisors, specializing in matching markets, teams, strategies and funding in the areas of clean tech, semiconductors, and medical device technologies. He works with several early stage companies, helping them focus on success while navigating the treacherous startup waters. Epstein also teaches entrepreneurship and finance at the University of San Francisco to MBA and business majors, and guest lectures and teaches professional courses in the Bay Area.

Recently, as CEO of Sol Voltaics in Lund, Sweden, Epstein focused their solar nanotechnology initiatives toward product development. Previously, as a General Partner at Crosslink Capital, Dave spent seven years investing in clean tech, semiconductors, hardware, software and systems. He was interim CEO at AdaptiveRF, advisor for Transmeta Corporation, President and CEO of XStream Logic, founding CEO of Raycer Graphics, and VP at NexGen and Kendall Square Research. He started his career at Data General as a CPU designer, chronicled in Tracy Kidder's "Soul of a New Machine."

Epstein has a BSEE and MSEE from the University of Wisconsin and an M.B.A. with high honors from Boston University. He is named on 13 patents in computer architecture and serves on the University of Wisconsin Department of Electrical and Computer Engineering Visiting Advisory Board.



Bill Gauley, principal, Gauley Associates Ltd., is a professional engineer with 23 years of experience advancing water efficiency. Gauley has extensive experience with creating municipal water efficiency strategies and evaluating water efficiency products. In 2002, he co-developed the MaP (Maximum Performance) Program to help foster an improvement in the flushing performance of water-efficient toilet models. Gauley is a technical advisor to the U.S. EPA's WaterSense® program and is a founding member of the Canadian Municipal Water Efficiency Network committee. His current work focus involves developing integrated water management strategies for municipal clients.

PODIUM PRESENTERS AND PANELISTS



Daniel Gleiberman has held the position of Manager of Product Compliance and Government Affairs for Sloan Valve Company since 2012. An active leader in the plumbing industry, he has held previous chair posts with Plumbing Manufacturers International on the Government Affairs Committee and is the co-chair of the Water Efficiency and Sustainability Committee.

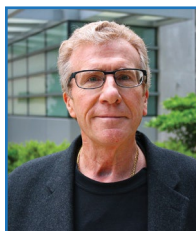
Gleiberman has extensive experience in legislation coordination, regulatory compliance, and public policy initiatives. He has participated, and remains active, in all aspects of plumbing codes and standards development, including with ASME, ASSE, IAPMO, ICC and NSPC. He has also coordinated and implemented an educational awareness campaign to highlight the environmental benefits of water-efficient commercial plumbing fixtures and fittings.

Gleiberman has served as three-time board member and current emeritus director of the U.S. Green Building Council – Los Angeles Chapter. He has also served on the board of directors for the California Urban Water Conservation Council, during which time he worked on programs that highlighted commercial water-use efficiency and initiatives to promote wider utilization of water-efficient commercial plumbing fixtures throughout California. A wide array of these initiatives have since been implemented throughout the United States.



Dr. Michael Gormley is a chartered engineer with nearly 30 years' experience in both industry and academia, and is an Associate Professor in Architectural Engineering at Heriot-Watt University in Edinburgh, Scotland. He is a specialist in water supply and drainage for buildings, as well as an Electrical and Electronics Building Services Engineer. He is a named inventor on international patents and has had more than 50 articles published in international engineering journals and symposia proceedings. He joined Heriot-Watt University in 2000 to work on the development of a positive air pressure transient attenuator (PAPA) for use in building drainage systems. Following the work on the PAPA, he undertook a Ph.D. study on solid transport in horizontal drain lines. Further patented inventions include a sonar-like system for the detection of defects in building drainage systems. More recently, he has been involved in modelling and assessment of Bioaerosols in building drains, and the potential for infection spread in hospitals due to cross-transmission of pathogens. Overall, his current research interests focus on numerical modelling of fluid flows in water supply and sanitation systems applied to three broad fields of study – public health engineering, product development, and water and sanitation in an international development context.

PODIUM PRESENTERS AND PANELISTS



Jon Gray is a Principal, a Senior Plumbing Designer, and leads Interface Engineering's plumbing group. Since joining the firm in 1990, he has been a strong advocate for water conservation and sustainable plumbing systems design. Gray was an active member of the Oregon State Plumbing Board for eight years, and served as the Chair from 2009-2013. He has spoken about water issues at several regional and national conferences, including the recent *Building a Secure & Sustainable Water Future* for Hawai'i at the 2014 University of Hawai'i Ascent Conference, and two programs for Cascadia Living Future's 2012 Conference, *What Would Rachel Carson Do? Lessons for district scale from Chatham University's Eden Hall Campus* and *Water: Research to Policy to Practice*.



Herman William (Bill) Hoffman, Jr., PE has worked in the water industry for more than 45 years. As Assistant Director for Water Resource Planning for the Texas Water Development Board (TWDB), he implemented that agency's urban and industrial water conservation (ICI) programs and supervised the water reuse, desalinization, and alternate sources (rainwater, gray water, etc.) programs. At various times, he was also in charge of developing future water use projections for the commercial and industrial sectors based on change in water efficiency, and examining the implications of conservation on future water use trends.

He also worked at the City of Austin Water Utility for seven years, where he was supervisor of Institutional, Commercial and Industrial Water Conservation (ICI) Programs.

Hoffman is now a consultant working to help utilities, states, and commercial entities develop effective ICI programs. He serves on numerous national water efficiency standards and codes committees, including IAPMO-ANSI Water Efficiency and Sanitation Standard Committee, American Water Works Association Conservation Committee, the American Society of Mechanical Engineers, and the Texas Water Conservation Advisory Council. He has authored numerous articles, publications, and books on water efficiency, audited multiple industrial, commercial and institutional operations, and written water conservation guides for ICI sectors for California, Texas and the St. John's River Water Management District, and was on the team to develop a Best Management Practices Guide for EPA's WaterSense® program.

He is a native Texan and lives in Austin, Texas. He holds a B.S. degree in chemical engineering and M.S. degree in environmental engineering, both from the University of Texas at Austin.

PODIUM PRESENTERS AND PANELISTS



Mark A. Johnson brings 30 years of management experience to his position as Executive Vice President and Director of Business Development for the International Code Council. Johnson is responsible for the management and oversight of product and business development, marketing, publications, sales, training and education, certification and testing, customer service and order fulfillment. Additional duties include serving as the council's business liaison with organizations including ASTM International, American Society of Heating, Refrigeration and Air-Conditioning Engineers (ASHRAE), the National Council of Structural Engineers Association (NCSEA), McGraw-Hill, and Underwriters Laboratories Inc. Previously, he served as President of ICC Evaluation Service, LLC, a subsidiary of the Code Council. Johnson holds a Bachelor of Arts in economics and a Bachelor of Science in engineering, both from California State University, Fullerton, and an M.B.A. from the University of Phoenix.



Tim Keane is a consulting engineer with Legionella Risk Management and is a nationally recognized expert on methods to control and minimize the risk of Legionella in building water systems.

He has 25 years' experience in industrial and commercial water treatment consulting with the last 10 being focused on waterborne pathogen control. He also has 10 years' experience as a Project Engineering Manager in new construction and facility operation. He has presented seminars across the country on plumbing system design to minimize potential for waterborne pathogens. He has been a member of the ASHRAE 188 committee since 2005. He has worked with health-care, commercial, institutional, industrial and municipal facilities in the U.S. and internationally.

In 2012, Keane gave a presentation at the American Water Works Association (AWWA) Water Quality Technology Conference on an issue that is front page news today: *Case Studies of Legionnaires' Disease Outbreaks Related to Municipal Water Disruptions*. His article "ASHRAE 188: The Domino Effect" discusses the potential impact ASHRAE 188 will have.

Keane is a U.S. Merchant Marine Academy graduate with a degree in marine engineering.

PODIUM PRESENTERS AND PANELISTS



Paula Kehoe is the Director of Water Resources with the San Francisco Public Utilities Commission (SFPUC). She is responsible for diversifying San Francisco's local water supply portfolio through the development and implementation of conservation, groundwater, and recycled water programs. Kehoe spearheaded the landmark legislation allowing for the collection, treatment, and use of alternate water sources in buildings and districts within San Francisco. Previously, she worked as the Assistant to the General Manager of the SFPUC and supported the utility's \$4.8 billion capital improvement program designed to rebuild and repair the third-largest water delivery system in California. As Public Education Director for the SFPUC's Water Pollution Prevention Program, she received six state and national awards. Kehoe holds a B.A. from the University of Colorado, Boulder and an M.S. from the University of San Francisco.



Gary Klein, President of Gary Klein & Associates, Inc. has been intimately involved in energy efficiency and renewable energy since 1974. One-fifth of his career was spent in the Kingdom of Lesotho, the rest in the United States. Klein has a passion for hot water: getting into it, getting out of it and efficiently delivering it to meet customers' needs. After serving 19 years with the California Energy Commission, he has provided consulting on sustainability since 2008, with an emphasis on the water-energy-carbon connection. Klein received a B.A. from Cornell University in 1975 with an Independent Major in Technology and Society with an emphasis on energy conservation and renewable energy.

The International Association of Plumbing and Mechanical Officials (IAPMO) recognized his efforts in 2014, presenting him their Green Professional of the Year award. In 2015, the Department of Energy awarded him the Jeffrey A. Johnson Award for Excellence in the Advancement of Building Energy Codes.



Dr. Markus Lenger is CEO and Co-founder of CleanBlu Corporation, which is dedicated to innovating wastewater industry processes to the consumer level, using a sustainable and ecological approach. Lenger holds degrees in electrical engineering, laser technology and physics, and during his 30-year career in wastewater, has developed, patented and marketed an at-source, in-situ FOG reduction system and a FOG-to-biofuel feedstock conversion system. More recently, and in collaboration with Whirlpool Corporation, Lenger has designed and built a revolutionary residential greywater processing prototype, installed at the Net-Zero energy and water project called ReNEW House in West Lafayette, Ind.

PODIUM PRESENTERS AND PANELISTS



Michael Luetzgen's career has focused on engineering and engineering management. He has a B.S. in Engineering from the University of Wisconsin – Milwaukee, an M.S. in Mechanical Engineering from the University of Wisconsin – Madison, and an M.B.A. from the University of Michigan. He holds 13 patents. Luetzgen spent much of his career developing and managing the development of high-reliability electronics for extreme environments. He joined the Applied Technology group at Kohler Co. in 2007 to develop and implement advanced technologies and engineering processes. This has included processes such as competitive technology mapping and methods to predict competitor actions years in the future. Most of his focus, though, has been on the study of water pricing, use, and reuse around the world, and for the last few years, concentrating on decentralized sanitation for developing countries.

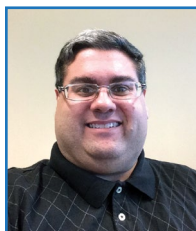


Lynn Rushmore is Vice President of Terlyn Industries. His main focus is to introduce and educate cooling tower water treatment companies about the effective use of TERLYN's tested and proven Cooling Tower Water Conservation Program that reduces bleed to only 3 percent.



J. Joe Scott, CPD, FASPE, is a Vice President and Senior Plumbing Designer for Cannon Design in its St. Louis, Mo. office. Scott has been involved in the design and specification of plumbing systems for the past 35 years with emphasis on health care, criminal justice, and laboratory building types. Scott has served on numerous ASPE committees and was the Task Force Chairman for the design portion of the *Domestic Water Heating Design Manual*. Scott is a past ASPE President.

PODIUM PRESENTERS AND PANELISTS



Kent Sovocool has a B.S. in Forest Resources Management from the University of Montana at Missoula, an M.A. in Science with emphases in Plant Physiological Ecology and Geoscience from the University of Nevada, Las Vegas, and has worked extensively as an analytical chemist.

Sovocool started with the Southern Nevada Water Authority's Conservation Division in 2000 researching water-efficient landscaping as a Conservation Programs Coordinator. In 2002, he advanced into a supervisory role overseeing coordinators managing conservation programs serving the multifamily, commercial, industrial, institutional, and green sectors.

In 2005 Sovocool became the Senior Conservation Research Analyst and today oversees the Conservation Knowledge and Support (CKS) Team, a group that provides conservation studies and research related services to the division. Sovocool is a Certified Conservation Practitioner.



Dr. Janet E. Stout, Ph.D., is President and Director of Special Pathogens Laboratory and Research Associate Professor at the University of Pittsburgh Swanson School of Engineering in the Department of Civil and Environmental Engineering.

A clinical and environmental microbiologist, Stout is recognized worldwide for more than 30 years of pioneering research in *Legionella*. The author of more than 200 articles in peer-reviewed journals, as well as textbook chapters on *Legionella* and Legionnaires' disease, her expertise includes prevention and control strategies for Legionnaires' disease. Stout has evaluated all major *Legionella* disinfection technologies in use today and continues to explore new approaches.

Stout assisted in developing the first *Legionella* prevention guideline in the U.S. Additionally, she serves on *Legionella* standard and guideline committees, including Cooling Technology Institute and ASHRAE *Legionella* Guideline 12, and the SPC 188 committee for ANSI / ASHRAE Standard 188-2015 Legionellosis: Risk Management for Building Water Systems.



Stephanie Tanner is the Lead Engineer for the U.S. Environmental Protection Agency's WaterSense® Program. She is responsible for all technical aspects of the development of labeled products, including setting efficiency and performance criteria, as well as managing the certification process. Prior to joining the EPA, she managed a water efficiency program for Federal Facilities and wrote a number of guides to water efficiency for federal facilities. She holds a B.S. in Marine Engineering from the Merchant Marine Academy and a Master of Engineering Management from the George Washington University.

PODIUM PRESENTERS AND PANELISTS



Dr. Andrew Whelton is an Assistant Professor in Purdue University's Lyles School of Civil Engineering and the Division of Environmental Engineering. In 2014, he and his students responded to the West Virginia chemical spill and was then tapped by the West Virginia governor to help the state recover. He and his research teams have testified at the Indiana Senate, briefed the Chemical Safety Board, and presented at Toxicology, Public Health, Water Utility, Arts and Humanities, and Journalism meetings. Before joining Purdue University, he served on the faculty at the University of South Alabama, postdoctoral training at NIST and Virginia Tech, and worked for the U.S. Army and several consulting firms. At U.S. Army, he provided technical support for investigating and developing strategies to recover from water contamination incidents. Whelton earned a B.S., M.S., and Ph.D. degree in civil and environmental engineering from Virginia Tech.



Lorraine White is the Water-Energy Program Manager for GEI Consultants, Inc., one of the nation's leading engineering, environmental and ecological science firms. White has more than 25 years' experience in energy and water resource management, focusing the last 16 years on sustainable strategies that lie at the intersection of water, energy and climate.

Prior to joining GEI, White was the lead for the California Energy Commission's efforts to address issues between water and energy, representing the commission in regulatory policy deliberations at the California Public Utilities Commission, the Department of Water Resources, and the Water Energy Sub-Team of the Governor's Climate Action Team. She also helped the state develop and implement a wide variety of resource efficiency, environmental protection and clean energy development policies.



Rob Zimmerman is the Senior Manager—Sustainability at Kohler Co. He is actively involved in developing and implementing Kohler's corporate sustainability and social responsibility programs across all business units. His responsibilities include developing and overseeing communication of Kohler's external-facing environmental sustainability message, and establishing relationships with key corporate partners and nongovernmental organizations that advocate for water efficiency.

Zimmerman is a member of the Board of Directors of the Alliance for Water Efficiency, and of the Wisconsin Chapter of the U.S. Green Building Council, and currently serves as its treasurer.

He has a B.S. in chemical engineering from Purdue University, and an M.S. in engineering management from the Milwaukee School of Engineering. He is a LEED Accredited Professional.



CO-CONVENERS



Alliance for Water Efficiency (AWE)

The Alliance for Water Efficiency is a stakeholder-based 501(c)(3) nonprofit organization dedicated to the efficient and sustainable use of water. Headquartered in Chicago, the Alliance serves as a North American advocate for water efficient products and programs, and provides information and assistance on water conservation efforts. A diverse Board of Directors governs the organization and has adopted a set of guiding principles and strategic plan.



American Society of Plumbing Engineers (ASPE)

The American Society of Plumbing Engineers (ASPE) is the international organization for professionals skilled in the design, specification and inspection of plumbing systems. ASPE is dedicated to the advancement of the science of plumbing engineering, to the professional growth and advancement of its members, and the health, welfare and safety of the public.



Canadian Institute of Plumbing & Heating (CIPH)

Founded in 1933, the nonprofit Canadian Institute of Plumbing & Heating is a vibrant organization committed to providing its members with tools for success in today's competitive environment. CIPH includes over 250 member companies including manufacturers, wholesale distributors, master distributors, manufacturers' agents and allied companies that manufacture and distribute plumbing, hydronic heating, industrial, waterworks and other mechanical products. CIPH wholesalers operate over 600 warehouses and showrooms across Canada. CIPH members employ over 10,000 Canadians and are an integral part of the Canadian economy.



International Association of Plumbing and Mechanical Officials (IAPMO®)

The International Association of Plumbing and Mechanical Officials (IAPMO®) has been protecting the public's health and safety for 90 years by working in concert with government and industry to implement comprehensive plumbing and mechanical systems around the world.

The IAPMO code development process ensures openness and transparency for the development of consensus-based codes for use in the built environment. Our codes are unique, as they remain the only codes developed exclusively for plumbing and mechanical applications that employ an ANSI-accredited development process, providing a voice and a vote to all industry stakeholders.

IAPMO provides leadership toward addressing the global need for sound water efficiency-based codes and standards while working to avoid unintended consequences that have the potential to compromise health and safety. IAPMO supports science-based research and policy-based initiatives at all levels of government, with the goal of helping provide for the safe use of water in buildings around the world.



Mechanical Contractors Association of America (MCAA)

The Mechanical Contractors Association of America (MCAA) and Plumbing Contractors of America (PCA) serve the unique needs of approximately 2,500 firms involved in heating, air conditioning, refrigeration, plumbing, piping, and mechanical service. We do this by providing our members with high-quality educational materials and programs to help them attain the highest level of managerial and technical expertise.



Plumbing-Heating-Cooling Contractors National Association (PHCC)

Plumbing-Heating-Cooling Contractors Association – Dedicated to the promotion, advancement, education and training of the industry, for the protection of our environment, and the health, safety and comfort of society.



Plumbing Manufacturers International (PMI)

Plumbing Manufacturers International (PMI) is the voluntary international industry association of the manufacturers of plumbing products. Our members produce 90% of the products used in the USA and represent more than 150 brands.

PMI is the voice of plumbing manufacturers on regulatory and legislative issues, we are in the business of information sharing and serve as an international watchdog and “early-alert system” about issues that will impact our industry. We promote the efficient use of water, while maintaining a focus on health and safety. We build coalitions and bring (sometimes seemingly disparate) groups together on a common cause for the greater good. We promote a level playing field for trade issues and consumer choice.



United Association (UA)

With over 300,000 members across North America representing the plumbing and pipe fitting industry, the UA is very proud of our membership and our work. Our motto, “We Do It Right the First Time,” shows our integrity and determination to not only do our best, but with expertise. We strive to improve our members’ skills and excellence through our robust training programs.



World Plumbing Council (WPC)

The mission of the World Plumbing Council is to unite the world plumbing industry to safeguard and protect the environment and the health of nations, for the benefit of all.

- To develop and promote the image and standards of the plumbing industry worldwide; To encourage and facilitate the exchange of information, ideas and technology between plumbing industry organizations and individuals worldwide.
- To promote and assist in plumbing industry education and training, recognizing the need for appropriate standards and their international recognition.
- To create an awareness of the plumbing industry’s role in protecting the environment by providing safe, fresh water and sanitation through proper management, care, reuse, and conservation of natural resources.
- To provide and share information regarding research projects and technology that may be applicable to the plumbing industry and the people they serve.



American Standard

For more than 137 years, American Standard has led the way in developing innovative bath and kitchen products that have set and re-set the standards for living healthy, responsibly and beautifully. It is a proud legacy that has made American Standard one of the most trusted brands in the industry. We are dedicated to raising the standard in daily living through life improving performance and responsible innovation for health, safety, comfort and conservation at home, at work and around the world.



International Code Council (ICC)

The International Code Council is a member-focused association. It is dedicated to developing model codes and standards used in the design, build and compliance process to construct safe, sustainable, affordable and resilient structures. Most U.S. communities and many global markets choose the International Codes.

The International Codes®, or I-Codes®, published by ICC, provide minimum safeguards for people at home, at school and in the workplace. The I-Codes are a complete set of comprehensive, coordinated building safety and fire prevention codes. Building codes benefit public safety and support the industry's need for one set of codes without regional limitations.

Fifty states and the District of Columbia have adopted the I-Codes at the state or jurisdictional level. Federal agencies including the Architect of the Capitol, General Services Administration, National Park Service, Department of State, U.S. Forest Service and the Veterans Administration also enforce the I-Codes. The Department of Defense references the International Building Code® for constructing military facilities, including those that house U.S. troops around the world and at home. Amtrak uses the International Green Construction Code® for new and extensively renovated sites and structures. Puerto Rico and the U.S. Virgin Islands enforce one or more of the I-Codes.



TOTO USA

TOTO USA is headquarters for the Americas Division of the TOTO Global Group, which was established in 1917 with the founding of TOTO, Ltd., in Kitakyushu, Japan. TOTO is the world's largest manufacturer of bathroom fixtures and fittings. For nearly 100 years, TOTO has been the recognized leader in performance innovation and design with products that enhance the luxury bathroom experience. Today, the company maintains 25,700 employees in 69 offices around the world and owns manufacturing facilities in Japan, Mexico, the USA, China and Europe with an affiliated network of more than 80 production facilities worldwide. With over 1,500 engineers on staff and three centers devoted to research and development, TOTO is dedicated to engineering products that respect the environment while meeting people's needs for comfort, beauty and performance. TOTO's corporate

philosophy – People-First Innovation – is the guiding principle for all the company's processes, from engineering and design to manufacturing and sales. Consumers enjoy the peace of mind that comes from knowing they purchased a brand that innovates to improve people's quality of life. The company continues to raise industry standards and consumer expectations as to what is possible in the bathroom, as TOTO believes a high-quality bathroom is an experience and an everyday luxury people value and appreciate.



United Association (UA)

With more than 300,000 members across North America representing the plumbing and pipe fitting industry, the United Association is very proud of our membership and our work. Our motto, “We Do It Right the First Time,” shows our integrity and determination to not only do our best, but with expertise. We strive to improve our members’ skills and excellence through our robust training programs.



Viega

The Viega Group has always stood out from the crowd, and today they are bringing their high-quality, revolutionary piping systems to the water quality movement. Formed in 1899, Viega has been the global leader in press technology systems for industrial, commercial and residential industries. Viega LLC, headquartered in Wichita, Kan., offers more than 3,000 products, including Viega ProPress® for copper and stainless, Viega MegaPress® and Viega MegaPressG for black iron pipe and Viega PEX Press systems in Zero Lead™ bronze and high-performance polymer.

These systems are coupled with several products that are changing the way contractors do their jobs and are affecting the lives of the people who rely on them to deliver water safely to the tap. As standards are developed to prevent outbreaks like Legionella, contractors and designers will start seeking out products that improve efficiency and lower operating costs while also keeping bacteria growth at bay.

Everything from double drop elbows and Venturi insert fittings, to the revolutionary Viega SmartLoop™ system, will aid in the flow and temperature maintenance of a building's piping system. With training and design seminars, together we can help keep our drinking water safe with quality, innovative products and services.



Indian Plumbing Association (IPA)

The Indian Plumbing Association (IPA) is the apex body of plumbing professionals in India. Established in 1993 with the objective to promote development of the plumbing and building services industry, IPA membership is open to everyone engaged directly or indirectly with the construction industry.

The Indian Plumbing Association (IPA) has more than 2,500 members across the country from every segment of the building industry, including consultancy, manufacturing, contracting, trading, academia and architecture. IPA headquarters is in New Delhi and 15 chapters are in Bangalore, Chandigarh, Chennai, Delhi NCR, Goa, Gujarat, Hyderabad, Jaipur, Kerala, Kolkata, Mumbai, Nashik, Pune, Raipur, and Visakhapatnam.



National Inspection Testing Certification

National Inspection Testing and Certification Corporation (NITC) is a third-party provider of certification services to the piping industry. NITC tests and certifies personnel in the medical gas, plumbing, pipefitting, HVACR, fire protection and safety systems and related industries.

NITC maintains a Quality Management System registered to the ISO 9001:2008 standard and offers personnel certifications that include but are not limited to Journey Level and Master Level, assorted city, county, and state government requirements. NITC also specializes in test development and test administration.

The purpose of the NITC Personnel Certification Program is to advance the profession of certain crafts, inspectors and businesses in the construction industry by providing (a) a mechanism by which individuals can demonstrate their knowledge of model codes, standards, industry practices, and (b) a mechanism by which stakeholders in the construction industry can readily assess a minimum level of competency for such categories.

NITC is non-discriminatory in accepting applications and issuing certifications to candidates in regards to membership in any trade association, union, etc., and NITC is in compliance with all federal and state ADA regulations. Since NITC's work is highly important to the construction industry, as well as the public at large, NITC has devised processes to insure that it practices impartiality, manages conflict of interest issues, and ensures objectivity in carrying out its certification activities.



Alliance for Water Efficiency (AWE)

The Alliance for Water Efficiency is a stakeholder-based 501(c)(3) nonprofit organization dedicated to the efficient and sustainable use of water. Headquartered in Chicago, the Alliance serves as a North American advocate for water efficient products and programs, and provides information and assistance on water conservation efforts. A diverse Board of Directors governs the organization and has adopted a set of guiding principles and strategic plan.



Aqua-Rex

Aqua-Rex LLC is the USA subsidiary of the UK company Lifescience Products Ltd, a technology leader in designing Physical Water Conditioners (PWTs), alternatives to conventional salt based water softeners. Aqua-Rex can deliver most of the benefits of a conventional water softener and in addition clean out the existing scale from a property.

It is has a very low initial cost, requiring no servicing or maintenance, and is easily retro fitted. Whilst it may be considered "Emerging Technology" in the USA, Aqua-Rex is one of a number of PWTs that are "Established Technology" in the UK. They are specified by all plumbing engineers and used in all kinds of applications in place of conventional softeners and have been for at least the last 10 years.

As well as replacing softeners where high chlorides are a problem in waste water, Aqua-Rex can be of practical use in moderately hard water areas where softeners would not normally be installed. They can also be used to clean existing scale in systems, therefore contributing to the control of Legionella.



Kemper Hygiene Systems (KHS)

The KHS System incorporates the use of a unique splitter valve to control water flow and drinking water temperatures in large buildings such as hospitals, hotels and schools, etc. The main purpose of the valve system is to deter harmful bacteria growth such as Legionella. The KHS System works automatically (24/7) throughout active and inactive areas of a building's plumbing system and is designed to maintain hot and cold water temperatures outside of the Legionella growth zone (68°F-124°F). In compliance with ASHRAE 188, the KHS System provides the building operator with automated controls and procedures designed to manage and minimize the risk of Legionella.



Kohler Co.

Since 1873, Kohler has been improving people's lives with exceptional products, including kitchen and bath fixtures, faucets and accessories, furniture, cabinetry, and tile and stone. As a global leader, Kohler offers its customers world-class products to create a complete design solution. For information, ideas or inspiration, visit www.KOHLER.com.



Rada (a Kohler Company)

At Rada we're driven to design hand washing, showering and washroom water controls that play a vital role in helping to protect users from risks, including scalding and potentially fatal waterborne bacteria such as Legionella and Pseudomonas aeruginosa.

When the stakes are so high, it pays to work with a manufacturer that cares as much as you do.

Rada's catalogue of industry firsts since 1959 now includes the world's first digital thermostatic mixing valve designed for healthcare, with non-touch control of both flow and temperature adjustment.

We're previewing an exciting new development, designed to address many of the challenges of water control at the point of delivery in healthcare environments – the company's new range of iF Design Award winning digital thermostatic faucets and showers.



Sloan

Every day around the world, Sloan products connect the systems that manage our planet's most precious resource. As the world's leading manufacturer of commercial plumbing systems, we've spent more than a century pioneering smart, water-saving restroom solutions that are built to last a lifetime.

OUR MISSION

We want to passionately preserve the environment. Water Connects Us® is more than just Sloan's tagline. Sloan understands the dynamic relationship between the world's water management systems and its water ecosystems. We connect communities of engineers, architects, designers, building managers and owners to high-efficient products and systems to promote healthier water ecosystems for generations to come.

OUR VISION

Be the global leader most renowned for providing smart, clean, sustainable restroom solutions. Sloan is committed to global water conservation. Sloan has partnered with healthcare facilities, restaurants, hotels, schools, office buildings and institutions around the world to save millions of gallons of water with low-flow, water free and reclaimed water technology.

OUR PROMISE

Intelligent solutions that deliver higher standards of performance and responsibility. Sloan helps customers worldwide to meet the water and energy challenges of growing businesses, municipalities and communities. Since innovating the Royal® flushometer over 100 years ago, our global team of engineers have developed technologies that improve water-efficiency without compromising design, quality, affordability or performance.



The Water Institute at the University of North Carolina

We are problem solvers focused on the sustainable management of water for health and human development. We contribute to improving access to safe water, sanitation, and hygiene for all. Since its founding, the Water Institute has tackled issues of central importance to global public health, to address ongoing and emerging issues, and to improve policy, programming and practice. Institute researchers have published more than 80 scientific papers, and reached large audiences with knowledge products that translate insights into practical action. The Institute's recommendations on global WaSH goals, targets, and indicators have supported policymaking and shaped agendas around issues including water supply and quality, sanitation and sewerage, health care and school settings, and human rights.



Water ProTec

OUR VISION:

- To be the world leader in prevention systems to prevent water damage in residential, industrial and commercial areas.

OUR MISSION:

- To provide a product assuring peace of mind and protection of the environment through our system, by controlling serious incidents caused by water in all sectors.

OUR PRODUCT:

- The aim of our product is to prevent damage caused by water.
- The product is an electronic valve installed at the main water entrance that automatically shuts off when the control panel receives an overflow signal. This product is extremely effective in preventing water overflow caused by the hot water tanks, bathtubs, sinks, toilets, dishwashers, washing machines, etc. All you do is place the wireless sensors anywhere you foresee as a potential trouble spot.



WaterSmart Innovations

The WaterSmart Innovations Conference and Exposition is the largest urban water-efficiency conference of its kind in the world. Presented by the Southern Nevada Water Authority and numerous forward-thinking organizations, the ninth WaterSmart Innovations Conference and Exposition will be held Oct. 5-7, 2016, in Las Vegas. A premier venue to showcase new water-efficiency technology, build and strengthen effective, interdisciplinary relationships, and establish your company as an international leader in innovative water efficiency technology and services.

At WaterSmart Innovations, a wide range of professional sessions and workshops – along with an extensive exhibition of water-saving technologies and programs from around the world – will connect attendees with the resources they need in an atmosphere of networking, collaboration and learning.



Alliance for Water Efficiency (AWE)

www.allianceforwaterefficiency.org

33 N. LaSalle Street, Suite 2275 | Chicago, IL 60602



American Society of Plumbing Engineers (ASPE)

www.aspe.org

6400 Shafer Ct., Suite 350 | Rosemont, IL 60018-4914



Canadian Institute of Plumbing and Heating (CIPH)

www.ciph.com

295 The West Mall Suite 504 | Toronto, Ontario. M9C 4Z4



International Association of Plumbing and Mechanical Officials (IAPMO®)

www.iapmo.org

4755 E. Philadelphia Street | Ontario, CA 91761



Mechanical Contractors Association of America (MCAA)

www.mcaa.org

1385 Piccard Drive | Rockville, MD 20850



Plumbing-Heating-Cooling Contractors National Association (PHCC)

www.phccweb.org

180 S. Washington Street, Suite 100 | Falls Church, VA 22046



Plumbing Manufacturers International (PMI)

www.pmihome.org

1921 Rohlwing Rd., Unit G | Rolling Meadows, IL 60008



United Association (UA)

www.ua.org

Three Park Place | Annapolis, MD 21401



World Plumbing Council (WPC)

www.worldplumbing.org