

FINAL PROGRAM



# WORLD ENVIRONMENTAL & WATER RESOURCES CONGRESS

Pittsburgh, Pennsylvania | May 19-23, 2019

RESILIENT  
INFRASTRUCTURE  
FOR A CHANGING

# PLANET



#EWRI2019 | [ewricongress.org](http://ewricongress.org)

Monday | May 20

## Welcome & Awards Ceremony

12:15 – 1:45 p.m.

### Margaret S. Petersen Award

For an outstanding woman in environmental and water resources



#### Barbara E. Spang Minsker, Ph.D., M.ASCE

Barbara E. Minsker's research uses information technology and "Big Data" to improve understanding and management of coupled environmental and human systems, with a focus on water, sustainability, and resilience. She has received numerous awards for her research, including the National Science Foundation CAREER Award, Presidential Early Career Award for

Scientists and Engineers, the American Society of Civil Engineers (ASCE) Walter L. Huber Civil Engineering Research Prize, and Fellow in the ASCE Environmental and Water Resources Institute (EWRI).

Minsker has developed and taught courses on authentic leadership, environmental systems analysis, sustainability, and data literacy. She employs experiential and project-based learning, where students engage in highly interactive classroom and field experiences and learn from reflecting on those experiences. She has also written two books on work-life balance.

Minsker has extensive leadership experience, for which she received the EWRI Outstanding Achievement Award and Service to the Profession Award. She has led national research initiatives such as the WATERS Network and two successful EWRI task committees, served as Associate Provost Fellow for the University of Illinois sustainability initiative, and was founder and President of two start-up organizations.

Minsker is a licensed Professional Engineer in the State of Texas. Prior to joining SMU in 2016, Dr. Minsker was Professor and Arthur and Virginia Nauman Faculty Scholar in the Department of Civil and Environmental Engineering at the University of Illinois Urbana-Champaign. Minsker was previously a policy analyst consultant to the Environmental Protection Agency. She earned a B.S. in Operations Research and Industrial Engineering with Distinction and a Ph.D. in Civil and Environmental Engineering from Cornell University.

### Professional Practice Ethics and Leadership Award

Recognizes civil engineering leadership in professional practice and ethics



#### Yvette E. Pearson, Ph.D., P.E., F.ASCE

Yvette E. Pearson is Associate Dean for Accreditation, Assessment, and Strategic Initiatives in the George R. Brown School of Engineering at Rice University. A Fellow of the American Society of Civil Engineers (ASCE), she is recognized for more than two decades of contributions to engineering education,

focused largely on research and practice to increase participation of students from excluded identities in STEM education and careers. Her vision is to help organizations achieve what she terms "ubiquitous inclusion" (UI) so that diversity, equity, and inclusion become a universal standard of practice.

Pearson chairs ASCE's Formal Engineering Education Committee, a subcommittee of the Committee on Sustainability and is vice chair of ASCE's Committee on Diversity and Inclusion. She was the 2018 recipient of ASCE's Professional Practice Ethics and Leadership Award "for her role in the development of Canon 8 of the ASCE Code of Ethics..." Among her other awards and honors are the University of Texas Regents' Outstanding Teaching Award, UT Arlington's Provost's Award for Excellence in Teaching (of which she is a two-time recipient),

Southern University College of Engineering's Teacher of the Year, and, in 2013, recognition as one of the Top 25 Women Professors in Texas. Prior to joining Rice, Pearson was a program director in the Division of Undergraduate Education at the National Science Foundation, where she managed a roughly \$70 million award portfolio.

Originally from Baton Rouge, Louisiana, Pearson holds a B.S. in Civil Engineering and an M.S. in Chemistry from Southern University, a Ph.D. in Engineering and Applied Science from The University of New Orleans, and a Graduate Certificate in Educational Research Methodology from the University of Illinois at Chicago. She is a registered Professional Engineer in Louisiana and Program Evaluator (PEV) for the Engineering Accreditation Commission (EAC) of ABET.

### Lifetime Achievement Award

The Lifetime Achievement award is presented to members who are judged to have advanced the profession, exhibited technical competence, and significantly contributed to public service, research, or practice in the environmental and water resources profession.



#### Peggy A. Johnson, Ph.D., F.EWRI, M.ASCE

Peggy Johnson is currently the Dean of the Schreyer Honors College and a Professor of Civil Engineering at Penn State University, where she had been a faculty member since 1996. As the Dean of the Schreyer Honors College, she oversees Honors Scholars, representing the top 2 percent of Penn State students across all disciplines, and teaches courses on leadership. From 2006 to 2015, she was the Head of the Civil and Environmental Engineering Department at Penn State. Prior to coming to Penn State, she served on the faculty of the Civil and Environmental Engineering Department at the University of Maryland. Over her nearly three decades as a Professor in Civil Engineering, she has conducted research and taught classes in the areas of hydraulic engineering, bridge scour, stream restoration, reliability analyses, and river mechanics. She has published numerous papers on these topics and supervised the dissertations and theses of dozens of Ph.D., M.S., and B.S. students. She was the President of EWRI from 2012 to 2013 and is a Fellow of EWRI. She received the ASCE Hans Albert Einstein award in 2016 for her contributions in the use of sediment transport for the evaluation and design of in-stream control structures and stream restoration projects and the use of uncertainty and risk management for scour analyses. She also received the EWRI Outstanding Woman of the Year award in 2012. In addition to winning several teaching awards, Dr. Johnson won the National Science Foundation Young Investigator award and in 1995, she won the NSF Presidential Faculty Fellow award. She received a Master's degree in 1988 and a Ph.D. in 1990, both from the Civil and Environmental Engineering department at the University of Maryland.



#### Peter S. Eagleson, Ph.D., P.E., M.ASCE

Peter Eagleson is an American hydrologist, and author of *Dynamic Hydrology and Ecohydrology: Darwinian Expression of Vegetation Form and Function*. He has held professional positions including member of the National Academy of Engineering (since 1982) and President of the American Geophysical Union from 1986-1988. He has won many awards including the Stockholm International Water Institute's World Water Prize in 1997.

Eagleson's research interests include dynamic hydrology, hydroclimatology, and forest ecology. His early research was on sediment transport and wave theory. He published multiple articles and

book chapters about these subjects. It was not until 1964 that he significantly narrowed his focus to hydrology. In 1967 Eagleson along with some of his students, published six papers in Water Resources Research. These papers immediately impacted the field of hydrology.



**Robert G. Traver, Ph.D., P.E., D.WRE, F.EWRI, F.ASCE**

Robert Traver is a nationally and internationally recognized leader in water resources management, Traver is the founding director of the Villanova Center for the Advancement of Sustainability in Engineering (VCASE) and the Villanova Urban Stormwater Partnership (VUSP). He holds the distinctions of

Diplomate, Water Resources Engineer and Fellow in both the American Society of Civil Engineers (ASCE) and the Environmental and Water Resources Institute (EWRI). Widely published in highly respected journals, in 2010 Dr. Traver co-authored the National Resources Council report on Urban Stormwater in the United States.

A member of the ASCE's external panel charged with investigating the failure of New Orleans's levee system during Hurricane Katrina, Traver co-authored the follow-up report "What Went Wrong and Why." He also is cited for his work in spearheading "Flood Risk Management – Call for a National Strategy," a comprehensive report made available to the public in 2014. That same year, the ASCE honored Dr. Traver with its William H. Wisely American Civil Engineer Award, which recognizes individuals who have exhibited continuing efforts to better the technical and professional activities of the Society.

Though he spends time serving nationally on numerous committees and task forces, Traver's top priority is Villanova. At the University, he is recognized as a dedicated teacher who brings his research into his graduate and undergraduate classes. Throughout his career, he has successfully obtained external funding to support both his research and 40 graduate students who have come through the program. He also has been a mentor to several young faculty members.

## *Service to the Institute Award*

The Service to the Institute Award is given in recognition of extensive and outstanding service to the Institute.



**Jerry Rogers, Ph.D., P.E., D.WRE, Dist.M.ASCE**

Jerry R. Rogers served on the EWRI Founding Task Committee under Chair Conrad G. Keyes, Jr., from 1997 to 1999 and was appointed by the ASCE President to the first two National EWRI Boards in 1999-2001. Besides inviting initial EWRI committee chairs, Dr. Rogers became EWRI nominations chair for confirming initial EWRI Board members. Also,

Dr. Jerry Rogers founded and chaired for many years the EWRI History and Heritage Committee in 1999 which has been the only ASCE Institute history committee. EWRI HHC coordinates EWRI history sessions at EWRI annual congresses and special EWRI history symposia and EWRI/ASCE publications. For the EWRI 20th Anniversary, Dr. Rogers chaired an EWRI Task Committee to plan the 20th Anniversary and Achievements Activities, including six EWRI history sessions and two posters with several history papers in a special EWRI 2019 Proceedings section.

Rogers co-authored with Augustine J. Fredrich two ASCE and EWRI history symposia publications: Houston (2001): International Engineering History and Heritage: Improving Bridges to ASCE's 150th Anniversary, ASCE, 2001, 508 pp. and Washington, DC (2002): Environmental and Water Resources History, ASCE, 2002, 301 pp., 24 papers. With Brown and Garbrecht, Rogers

coordinated in Salt Lake City (2004): Water Resources and Environmental History, ASCE, 2004, 296 pp., 31 papers. Dr. Rogers edited the Tampa (2007): Environmental and Water Resources History: Milestones in Engineering History, ASCE, 2007, 159 pp., 18 papers. Jerry Rogers edited the Kansas City (2008): Great Rivers History, ASCE, 135 pp., 18 papers. In Las Vegas (2009), Wiltshire, Gilbert and Rogers edited: Hoover Dam 75th Anniversary History Symposium, ASCE, 2009, 413 pp., 20 papers.

Rogers has received the EWRI Lifetime Achievement Award, the William H. Wisely American Civil Engineer Award, Distinguished Member ASCE, the National Civil Engineering History & Heritage Award.

## *Urban Water Resources Research Council Founders' Award*

This award was established to honor the Founders of EWRI's Urban Water Resources Research Council, pioneers in the fields of urban water management and stormwater research.



**Alexander Charles Rowney, P.Eng, D.WRE, F.EWRI, M.ASCE**

Charles Rowney was a community-builder and a teacher at heart. In business, he exemplified the highest ethical and professional standards. He believed that water resources and sustainable urban infrastructure required diverse communities

from a wide-ranging set of expertise. Using his background in both biology and engineering, Charles helped unite these communities to create approaches to sustainable urban water infrastructure that were more well-rounded. The highlights of his career include helping to establish the National Center for Infrastructure Modeling and Management, serving as a member of the Board of Directors for the Urban Watershed Research Institute, teaching as a Senior Research Fellow at the University of Texas at Austin, and managing a private practice that was active across the United States, Canada, and internationally. He tirelessly served the Environmental and Water Resources Institute of ASCE in many roles including serving as Chair of the Technical Area Executive Committee (EXCOM), serving multiple years on the Urban Water Resources Research Council Control Group, serving as Chair of the Learning Council, and guiding the formation of the Municipal Water Infrastructure Council, among others.

As a model developer and user, Charles authored and contributed to the development of receiving water and groundwater simulation software in rural, urban, river, lake, and coastal systems. He also had extensive experience in assessing needs and solutions in enterprise data management, with a focus on multi-disciplinary linkages and interoperability.

Community and collaboration were the tenants Charles held most dear, and that ideal is representative of why so many of us feel the loss of Charles from our midst so acutely. Charles treated everyone he encountered with the same friendliness and respect and welcomed their contributions, regardless of position or title. For Charles it was never about his own successes, but whether his actions enabled others to accomplish more.

## Visiting International Fellows

This fellowship is granted annually to increase the participation of water resources and environmental professionals from developing countries in EWRI conferences, and to promote sustained professional and cultural exchange.



**Manish Kumar Goyal, Ph.D.**  
India



**Sabita Aryal Khanna**  
Nepal



**Wally Mutungwa**  
Rwanda

## EWRI Fellows

EWRI Fellowship is granted to those who have been a member of EWRI for 10 or more years and have demonstrated accomplishments that have contributed significantly to the advancement or application of water resources or environmental engineering, science, and technology.



**Michael Buechter, P.E., D.WRE, F.EWRI**



**Shirley E. Clark, Ph.D., P.E., D. WRE, F.EWRI**



**Jane Clary, M.S., LEED-AP, CPESC, F.EWRI**



**Scott Struck, Ph.D., ENV SP, PWS, F.EWRI**

**Tuesday | May 21**

## Watershed Council Luncheon and Awards

12:15 – 1:45 p.m.

### Ven Te Chow Award | Keynote

The Ven Te Chow Award recognizes lifetime achievement in the field of hydrologic engineering.



**Rao S. Govindaraju, Ph.D., P.E., P.H., F.ASCE, F.EWRI, D.WRE**

Rao Govindaraju is the Bowen Engineering Head and the Christopher B. and Susan S. Burke Professor in the School of Civil Engineering at Purdue University. He earned his Ph.D. in civil engineering from the University of California, Davis, in 1989. His primary areas of research include surface and subsurface hydrology, contaminant transport, watershed hydrology, and climatic influences. He is interested in developing algorithms for analyzing and learning from hydrologic data. He specializes in problems dealing with uncertainty and spatial variability. His research work has been supported by various agencies such as NSF, EPA, DOD, and DOE. He has chaired national level committees and has served on the editorial boards of several journals. He is currently the Editor-in-Chief of the *Journal of Hydrologic Engineering*, *American Society of Civil Engineers*. His work has been recognized with numerous national and international awards, and keynote lectures.

## Arid Lands Hydraulic Engineering Award

This award recognizes original contributions in hydraulics, hydrology, planning, irrigation and drainage, hydroelectric power development, navigation applicable to arid or semi-arid climates, or contributions to the understanding and development of new technology in river basins.



**Jorge A. Ramirez, Ph.D.**

Jorge Ramirez is professor of Civil and Environmental Engineering at Colorado State University (CSU) since 1990, with a focus on water resources, hydrologic, and environmental sciences and engineering. He received a Ph.D. in hydrometeorology from MIT in 1988, a M.S. in hydrology and water resources from MIT in 1982, and a B.S. in civil engineering from the School of Mines of the National University of Colombia in 1981. In addition to CSU, Dr. Ramirez has held academic and research positions with renowned international institutions such as the Swiss Federal Institute of Technology (ETH-Z) in Switzerland, the Center for Environmental Research and Monitoring (CIMA) in Italy, the National University of Colombia in Medellin, and the Water Resources University in Hanoi, Vietnam. Dr. Ramirez teaches both undergraduate and graduate courses in engineering and physical hydrology and in quantitative eco-hydrology. Dr. Ramirez has received numerous teaching and research awards including the University Honors Program Professor of the Year Award in 2012, the George T. Abell Research Excellence Award of the College of Engineering in 2011, the AGU - Water Resources Research Editor's Choice Award in 2014, the ASCE-EWRI Best Research Paper Award in 2004 and 1997, and the Colorado Governor's Recognition Award for High Impact Research for, "Quantifying the Current and Future Vulnerability of the United States Water Supply System." in 2011. Dr. Ramirez has served on many science and technology committee panels including for the National Science Foundation, and he has consulted for the United Nations Development Programme at the National Institute of Hydrology in India, the Korean Water Resources Corporation, and the hydroelectric power sector of Colombia.

## Journal of Hydrologic Engineering

### Best Case Study

**Chulsang Yoo  
Jinwook Lee  
Myungseob Lee**

(2017) "Parameter Estimation of the Muskingum Channel Flood-Routing Model in Ungauged Channel Reaches," *Journal of Hydrologic Engineering*, 22(7):05017005

### Best Discussion

**David C. Froehlich, Ph.D., P.E., D.WRE, M.ASCE**

Discussion of "Improving Prediction of Dam Failure Peak Outflow Using Neuroevolution Combined with K-Means Clustering" by Amir Hossein Eghbali, Kouros Bezhadian, Farhad Hooshyaripor, Raziye Farmani, and Andrew P. Duncan', by David C. Froehlich, original in *Journal of Hydrologic Engineering*, 22(6), Discussion in *JHE* 23(5)

### Best Technical Note

**Glenn E. Moglen, F. ASCE**

(2017) "Parsimonious Mathematical Characterization of Canal Shape and Size," *Journal of Hydrologic Engineering*, 22(12): 06017006

## *Best Associate Editor*

For exemplary performance of his duties as an Associate Editor for the ASCE Journal of Hydrologic Engineering.

**Tommaso Moramarco, Ph.D.**

## *Best Technical Paper*

**Yilu Feng, Ph.D.**

**Kaye L. Brubaker, Ph.D., A.M.ASCE**

**Richard H. McCuen, Ph.D., M.ASCE**

(2017) "New View of Flood Frequency Incorporating Duration," *Journal of Hydrologic Engineering*, 22(11): 04017051

**Tuesday | May 21** *(continued)*

## **Planning & Management Council Luncheon & Awards**

12:15 – 1:45 p.m.

### *Julian Hinds Award*

The Julian Hinds Award recognizes the author or authors of a paper that is judged to make the most meritorious contribution to the field of water resources development. The award may also be made to an individual for notable performance, long years of distinguished service, or specific actions that advanced engineering in the field of planning, development, and management of water resources.



**Thomas Walski, Ph.D., P.E., D.WRE, F.EMI, F.ASCE**

Tom Walski is a Bentley Fellow at Bentley Systems and has over 40 years of experience as a researcher, engineer and manager at several water and wastewater organizations, university professor, trainer and software developer. He has written several hundred journal and conference papers

and is author or co-author of several books.

### *Service to the Profession*

This award recognizes and honors a person for outstanding leadership, activities, and achievement in service to the profession in the field of water resources planning through the institute, councils, local sections, or other organizational units of the Society.



**Eric Loucks, P.E., D.WRE, M.ASCE**

Eric Loucks joined ASCE in 1988 when he took his first job as an engineering consultant in Itasca, Illinois. Within a few months, he was organizing dinner seminars and modeling short courses on behalf of the Environmental Engineering and Water Resources (EE&WR) Technical Committee of the ASCE Illinois Section. He would later chair the

Section's Finance Committee as well as EE&WR. He led the effort to host an ASCE specialty conference on Water Resources Planning and Management and Environmental Engineering in Chicago in 1998 and served as the Technical Program Chair for the WRPMD portion of the program.

Loucks has served on EWRI technical committees since the Institute's founding. His service includes chairing the Planning and Management Council from 2007 to 2009 and then representing the council on the Technical Area Coordination Executive Committee from 2009 to 2015. He served as EWRI treasurer during 2015 and 2016 and is currently chair of the Technical Executive Committee

and a member of the Governing Board. He has been involved in the planning and delivery of numerous EWRI congresses and served as the Technical Program Chair for the 2012 EWRI World Environmental and Water Resources Congress in Albuquerque as well as congress chair for the 2015 congress in Austin.

Loucks is a Registered Professional Engineer in Texas, Illinois, and Wisconsin and is a Diplomate in the American Academy of Water Resources Engineers. He currently employed by the Watershed Protection Department of the City of Austin Texas where he works as the supervising engineer of the Stream Restoration and Stormwater Treatment Section.

## *Journal of Water Resources Planning and Management*

### *Best Research Oriented Paper*

**Riccardo Taormina**

**Stefano Galelli, M.ASCE**

(2018) "Deep-Learning Approach to the Detection and Localization of Cyber-Physical Attacks on Water Distribution Systems," *Journal of Water Resources Planning and Management*, 144(10): 04018065.

### *Quentin Martin Best Practice Oriented Paper*

(2018) "Assessment of Smart-Meter-Enabled Dynamic Pricing at Utility and River Basin Scale," *Journal of Water Resources Planning and Management*, 144(5): 04018019

**Charles Rougé**

**Julien J. Harou**

**Manuel Pulido-Velazquez**

**Evgenii S. Matrosoy**

**Paola Garrone**

**Riccardo Marzano**

**Antonio Lopez-Nicolas**

**Andrea Castelletti**

**Andrea-Emilio Rizzoli**

### *Best Policy Oriented Paper*

**Isabel Andrade**

**Carlos Oliveira Cruz, M.ASCE**

**Joaquim Miranda Sarmiento**

(2018) "Renegotiations of Water Concessions: Empirical Analysis of Main Determinants," *Journal of Water Resources Planning and Management*, 144(11): 04018073

### *Best Seminal Paper Award*

**John W. Labadie, Ph.D., P.E., M.ASCE**

(2004) "Optimal Operation of Multireservoir Systems: State-of-the-Art Review," *Journal of Water Resources Planning and Management*, 130(2), 93

## *Best Associate Editor Award for the Journal of Water Resources Planning and Management*

**Enrico Creaco, Ph.D.**

## *Best Reviewer Award for the Journal of Water Resources Planning and Management*

**Bryan Karney, Ph.D., P.E., M.ASCE**

**Justin Delorit, Ph.D., P.E.**

Wednesday | May 22

## Irrigation & Drainage Council Luncheon and Awards

12:15 – 1:45 p.m.

### Royce J. Tipton Award

The Royce J. Tipton Award recognizes outstanding contributions to the advancement of water and soil aspects of irrigation by software development, promoting application or new technologies, and through public and professional service.



**James L. Fouss, Ph.D., P.E., M.ASCE**

James Fouss is recognized as a world leader in agricultural drainage. From 1960 to 1972, he conducted original and pioneering research and development of 4-in. dia. polyethylene (PE) plastic corrugated-wall drainage tubing, and the laser-beam automatically controlled plow-type

equipment for rapid and accurate subsurface drain installation. From 1976 - 1982 as Vice President, Research and New Product Development for Hancor, he administered and technically directed all phases of research and new product development and/or improvement in drainage, agricultural water management and residential on-site waste disposal. He was lead inventor on 13 U.S. and foreign patents, and co-inventor on five additional patents for the products developed that included new types of plastic drain pipes, enhanced plow-type drain installation equipment, and a rotomolded plastic septic tank.

Fouss has been active in the American Society of Civil Engineers (ASCE) and the American Society of Agricultural and Biological Engineers (ASABE) during his career. He served on several committees of the old ASCE Irrigation and Drainage Division. He was co-chair of the ASABE Third National Drainage Symposium and general chair of the Sixth International Drainage Symposium and has served on numerous ASABE drainage committees.

Fouss has authored more than 160 technical journal articles, bulletins, conference proceedings, 10 book chapters, 16 U.S. & 2 foreign patents (while in industry), and many technical reports and private engineering consulting reports on corrugated plastic pipe design. He retired from USDA-ARS in 2011 after a distinguished 41 year career with as an agricultural engineer and research leader.

### *Journal of Irrigation and Drainage Engineering*

#### Best Reviewer

**Blake Tullis, Ph.D., M.ASCE**  
**Ali R. Vatankhah, Ph.D.**

#### Best Discussion

**Mohammadali Ghavidel**  
**Salah Kouchakzadeh, Ph.D.**  
**Mohammad Bijankhan, Ph.D., Aff. M.ASCE**  
**Gilles Belaud, Ph.D.**

(2017) Discussion of "Numerical Modeling of Submerged Hydraulic Jump from a Sluice Gate" by Veysel Gumus, Oguz Simsek, Nazire Goksu Soydan, Mevlut Sami Akoz, and Mehmet Salih Kirkgoz," *Journal of Irrigation and Drainage Engineering*, 142(1), Discussion in 143(4)

### Honorable Mention Paper Award

**Yiyi Ma, Ph.D.**  
**David Zhu, Ph.D., P.E., M.ASCE**  
**Nallamuthu Rajaratnam, Ph.D., F.ASCE**  
**Bert van Duin, P.E., M.ASCE**

(2017) "Energy Dissipation in Circular Drop Manholes" *Journal of Irrigation and Drainage Engineering* Volume 143(12): 04017047

### Honorable Mention Paper Award

**Aghil Yari**  
**Chandra A. Madramootoo, Ph.D.**  
**Shelley A. Woods, Ph.D.**  
**Viacheslav I. Adamchuk, Ph.D.**  
**Hsin-Hui Huang**

(2017) "Assessment of Field Spatial and Temporal Variabilities to Delineate Site-Specific Management Zones for Variable-Rate Irrigation," *Journal of Irrigation and Drainage Engineering*, 143(9): 04017037

### Best Paper Award

**Jie Zeng, Ph.D., P.E., M.ASCE**  
**Liqiong Zhang, Ph.D., P.E., M.ASCE**  
**Matahel Ansar, P.E.**  
**Emile Damisse, P.E., M.ASCE**  
**Juan A. González-Castro, Ph.D., P.E., M.ASCE**

(2017) "Applications of Computational Fluid Dynamics to Flow Ratings at Prototype Spillways and Weirs. I: Data Generation and Validation," *Journal of Irrigation and Drainage Engineering*, 143(1): 04016072

### Best Paper Award

**Zhorab Samani, Ph.D.**

(2017) "Three Simple Flumes for Flow Measurement in Open Channels," *Journal of Irrigation and Drainage Engineering*, 143(6): 04017010

## Hydraulics & Waterways Council Luncheon & Awards Lecture

12:15 – 1:45 p.m.

### Hunter Rouse Hydraulic Engineering Award

The Hunter Rouse Hydraulic Engineering Award is presented to a distinguished person in the field of hydraulic engineering.



**Heidi M. Nepf, Ph.D., M.ASCE**

Heidi Nepf is a Professor of Civil and Environmental Engineering at MIT. She earned a Ph.D. in Civil Engineering from Stanford University ('92), and was a Postdoctoral Fellow at the Woods Hole Oceanographic Institution before arriving at MIT in 1993. She is internationally known for her work on the impact of vegetation on flow and transport in

rivers, wetlands, lakes and coastal zones. In recognition for this work, she was awarded a US National Science Foundation Career Award. Dr. Nepf also served on the National Research Council panel charged with the review of the Army Corps plans for restoration and protection of the Louisiana coastline. She is a member of the Fluid Mechanics Steering Committee of IAHR and has served or is serving on the editorial boards of *Limnology and Oceanography*, *Water Resources Research*, *Environmental Fluid Mechanics*, and *Journal of Hydraulic Engineering*.

## **Karl Emil Hilgard Prize**

The Karl Emil Hilgard Hydraulic Prize is presented to the author or authors of the paper that is judged to be of superior merit in dealing with a problem of flowing water, either in theory or in practice.

**Anna Maria Ferreira da Silva, A.M.ASCE**

**Mohsen Ebrahimi**

(2017) "Meandering Morphodynamics: Insights from Laboratory and Numerical Experiments and Beyond," *Journal of Hydraulic Engineering*, 143(9): 03117005

## **Hydraulic Structures Medal**

The Hydraulic Structures Medal is awarded to an individual or individuals for significant contributions to the advancement of the art and science of hydraulic engineering as applied to hydraulic structures.



**Tony L. Wahl, P.E., M.ASCE**

Tony L. Wahl has worked 29 years in the Bureau of Reclamation Hydraulics Laboratory after earning B.S. and M.S. degrees at Colorado State University. Tony has done a wide variety of hydraulic structures-related work in his career and has specialized in providing useful software

tools to the profession. In the early 1990s he wrote the widely used WinADV program to post-process velocity data collected from the first ADVs, and a few years later he led the development of WinFlume, a program used to calibrate and design long throated flumes, the modern choice for critical-flow measurement structures.

Wahl conducted the first lab tests of Coanda-effect screens—high-efficiency, selfcleaning screens used at irrigation, hydropower, and water supply intakes. His 2001 journal paper and computer program are widely cited and he is now studying effects of surface tension on Coanda-effect screen capacity.

Wahl has been active for many years in embankment breach modeling, including lab studies and development of procedures for estimating canal breach outflow hydrographs based on canal hydraulic characteristics, embankment geometry, and soil erodibility. He has worked extensively with Dr. Greg Hanson's submerged jet erosion test for measuring erodibility of cohesive soils, comparing it to the Hole Erosion Test and leading Reclamation's use of both tests for dam safety applications.

Recently, Wahl has been studying hydraulic jacking due to uplift pressures at open joints in high-velocity spillway chutes. A new paper analyzes previous Reclamation testing, and new lab work is planned to evaluate boundary layer effects. Another notable project is SpillwayPro, a spreadsheet application developed recently with Henry Falvey, Ph.D., to upgrade Reclamation's tools for modeling cavitation potential and aerator improvements for spillway chutes.

Wahl frequently contributes to ASCE conferences and journals and has received Best Discussion and Outstanding Reviewer awards. He was the 2005 Bureau of Reclamation Federal Engineer of the Year.

## **Hans Albert Einstein Award**

This award acknowledges significant contribution to the engineering profession in the area of erosion control, sedimentation, and/or waterway development either in teaching, research, planning, design, or management.



**A. Jacob Odgaard, Ph.D., P.E., M.ASCE**

A. Jacob Odgaard is Professor and Dean, School of Architecture and Design, Southwest Jiaotong University, Chengdu, China; and Professor Emeritus, Civil and Environmental Engineering, Research Engineer Emeritus, IHR-Hydrosience and Engineering, and formerly Associate Dean for

Research and Graduate Studies, College of Engineering, University of Iowa. After receiving his Ph.D. from the Technical University of Denmark in 1970, he served with the Danish Army Corps of Engineers, and was lecturer at the Technical University of Denmark. Following a Post-Doc at University of Cambridge, UK, from 1972 to 1973, he became Senior Research Engineer at the Danish Hydraulic Institute (DHI) in Copenhagen, Denmark. He came to Iowa in 1977, and China in 2017.

Odgaard's expertise includes environmental fluid mechanics, river mechanics, hydraulic structures, and hydraulic modeling. Recent accomplishments include design and patenting of double-curved sediment control structure for rivers, development of techniques for stabilizing rivers and mitigating streambank erosion, development of alternative fish diversion schemes for hydropower projects, and design optimization of drop structures for transfer of storm and wastewater to deep underground tunnels. In 2015, he received ASCE's Karl Emil Hilgard Hydraulic Prize; and in 2012, EWRI/ASCE's lifetime Achievement Award. Previous honors include ASCE's Hydraulic Structures Medal, ASCE's Karl Emil Hilgard Hydraulic Prize, and being Editor and Associate Editor of ASCE's *Journal of Hydraulic Engineering*. He has served on numerous ASCE and EWRI committees, on the Iowa Highway Research Board and on several NSF and NCHRP panels. In 2017 and 2009, he received the University of Iowa College of Engineering Award for Exceptional Service. His book *River Training and Sediment Management with Submerged Vanes* was published by the ASCE Press in 2009. He is an ASCE Fellow, AAVRE Diplomate (D.VVRE), and a member of EWRI and IAHR. He is licensed as a professional engineer in Iowa. His consulting activities span the globe.

## **Journal of Hydraulic Engineering**

### **Best Paper**

**Anna Maria Ferreira da Silva, Ph.D., A.M.ASCE**

**Mohsen Ebrahimi, Ph.D., A.M.ASCE**

(2017) "Meandering morphodynamics: Insights from laboratory and numerical experiments and beyond," *Journal of Hydraulic Engineering*, 143(9): 03117005

Thursday | May 23

## Environmental Council/Water, Wastewater & Stormwater Lecture Luncheon & Awards

12:15 – 1:45 p.m.

### *Simon W. Freese Environmental Engineering Award*

The Simon W. Freese Environmental Engineering Award and Lecture is awarded to a distinguished person in the field of environmental engineering.



**Paul F. Boulos, Ph.D., BCEEM, Hon.D.WRE, Dist.D.NE, Dist.M.ASCE, NAE**

Paul Boulos is the CEO of Digital Water Works, a global innovator of digital twin solutions for smart wet infrastructure. He previously served as a President and Director of MWH Global, one of the world's leading environmental engineering and construction firms, with more than 7,000

employees in 35 countries and annual revenues of \$1.6 billion, until its sale to Stantec in 2016. He also founded and served as Chairman, President and CEO of Innovyze, the world's leading provider of water infrastructure management software, and led its ownership transition and sale to a private equity firm in 2017.

Boulos is one of the world's foremost experts on water resources and navigation engineering and the author of ten authoritative books and over 200 technical articles on issues critical to the water and wastewater industry. He has received numerous awards and honors including notable technical awards for excellence in scholarship from ASCE, the American Water Works Association and the U.S. Environmental Protection Agency; the ASCE Parcel-Sverdrup Civil Engineering Management Award; the University of Kentucky Hall of Distinction; and the Lebanese American University Distinguished Alumni Award. He was awarded Honorary Diplomate status by the American Academy of Water Resources Engineers and Distinguished Diplomate status by the Academy of Coastal, Ocean, Port & Navigation Engineers, the top honors for both Academies. He was also elected to the grade of Distinguished Member of ASCE, the Society's highest honor; to the European Academy of Sciences and Arts, one of Europe's most prestigious scientific organizations; and to the National Academy of Engineering (NAE), the highest professional distinction accorded to an engineer. He was also recognized with the Pride of Heritage Award from the Lebanese American Foundation, the U.S. Ellis Island Medal of Honor, the RMF USA Distinguished Lifetime Achievement Award, and U.S. Congressional recognitions for outstanding service to the community.

### *Rudolph Hering Medal*

This award recognizes outstanding papers that contribute to the advancement of the environmental branch of the engineering profession.

**David W. Spelman, M.ASCE**

**John Joseph Sansalone, M.ASCE**

(2018) "Is the treatment response of manufactured BMPs to urban drainage PM loads portable?," *Journal of Environmental Engineering*, 144(4): 04018013

### *Wesley W. Horner Award*

The Wesley W. Horner Award recognizes papers that have contributed to the areas of hydrology, urban drainage, or sewerage.

**L.L. Willard**

**T. Wynn-Thompson, A.M.ASCE**

**L. H. Krometis**

**T. P. Neher**

**B. D. Badgley**

"Does It Pay to be Mature? Evaluation of Bioretention Cell Performance Seven Years Postconstruction," L. L. Willard; T. Wynn-Thompson, A.M.ASCE; L. H. Krometis; T. P. Neher; and B. D. Badgley, *Journal of Environmental Engineering*, 143(9), 2017, 10.1061/(ASCE)EE.1943-7870.0001232.

### *Samuel Arnold Greeley Award*

The Samuel Arnold Greeley Award is presented for excellence in papers on the design, construction, operation, or financing of water supply pollution control, storm drainage, or refuse disposal projects.

**Marc A. Santos, P.E., M.ASCE**

**Richard F. Carbonaro, Ph.D., P.E.**

**Robert R. Sharp, Ph.D., P.E.**

"Control Strategies for the Mitigation and Removal of Attached Manganese Biofilms," *Journal of Environmental Engineering*, Jan 2018, Vol. 144(1): 04017089

### *Journal of Hazardous, Toxic and Radioactive Waste*

#### *Best Theoretical Oriented Paper*

**Krishna R. Reddy, F.ASCE**

**Girish Kumar, S.M.ASCE**

**Rajiv K. Giri, S.M.ASCE**

*System Effects on Bioreactor Landfill Performance Based on Coupled Hydro-Bio-Mechanical Modeling.* Krishna R. Reddy, Girish Kumar and Rajiv K. Giri. *J. Hazard. Toxic Radioact. Waste* 22(1), 04017024 (2018)

#### *Best Practice Oriented Paper*

**Prangya Ranjan Rout**

**Puspendu Bhunia**

**Rajesh Roshan Dash**

*Assessing Possible Applications of Waste Organic Solid Substances as Carbon Sources and Biofilm Substrates for Elimination of Nitrate Toxicity from Wastewater.* Prangya Ranjan Rout, Puspendu Bhunia and Rajesh Roshan Dash; *J. Hazard. Toxic Radioact. Waste* 21(3), 04016027 (2017).

### *Journal of Sustainable Water in the Built Environment*

#### *Best Case Study*

**Alisha Y. Chan, S.M.ASCE**

**Kristina G. Hopkins, Ph.D.**

(2017) "Associations between Sociodemographics and Green Infrastructure Placement in Portland, Oregon," *Journal of Sustainable Water in the Built Environment*. 3(3): 05017002



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## *Best Paper*

Mehran Niazi

Chris Nietch

Mahdi Maghrebi, A.M.ASCE

Nicole Jackson

Brittany R. Bennett

Michael Tryby

Arash Massoudieh, M.ASCE

*(2017) "Storm Water Management Model: Performance Review and Gap Analysis," Journal of Sustainable Water in the Built Environment. 3(2): 04017002*

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## **Expressions of Appreciation**

*Service and Leadership on the Sustainable Sortwater Infrastructure Committee*

Blaine Linkous P.E., P.H., LEED AP

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*ASCE Codes and Standards Committee (CSC) Merit Awards*

Thomas P. DeFelice, Ph.D., M.ASCE

Thomas O'Connor, M.ASCE

S. David Graber, P.E., F.ASCE

## **Awards To Be Presented at the ASCE 2019 Annual Convention**

The following awards will be presented at ASCE's 2019 Annual Convention in Miami, FL, October 10-13, 2019:

**[asceconvention.org](http://asceconvention.org)**

*State-of-the-Art in Civil Engineering Award*

*Norman Medal*

*Walter L. Huber Civil Engineering Research Prize*

**Award Nominations due October 1**

**For more information visit:**

**[ASCE.ORG/EWRI](http://ASCE.ORG/EWRI)**