

World Environmental & Water Resources Congress 2009

An important opportunity for the best minds at work in environmental and water fields to convene and focus on challenges of the day that include...

GREAT RIVERS

protecting the quality of life and bio-diversity, while supporting development and growth critically important for a sustainable future



MAY 17-21
2009

KANSAS CITY MARRIOTT DOWNTOWN • KANSAS CITY, MISSOURI

Sponsored by the
Environmental & Water Resources Institute
of the
American Society of Civil Engineers
Co-sponsored by the
American Academy of Water Resources Engineers



Your Congress Invitation

On behalf of the American Society of Civil Engineers' Environmental & Water Resources Institute, I am pleased to invite you to the **2009 World Environmental & Water Resources Congress** in Kansas City, Missouri, May 17-21, 2009.



The Congress Steering Committee has produced an intellectually and professionally stimulating annual Congress program. The agenda includes outstanding technical presentations to further your professional development, and numerous committee meetings and enjoyable social events to bring together old friends and new acquaintances.



The World Environmental & Water Resources Congress is an important annual opportunity for professionals in the environmental and water fields to convene and focus on topics of the day. This year's technical program focuses on the Great Rivers of the World and the engineering challenges of balancing environmental and development issues while achieving a sustainable future. It is imperative that those working on the front lines – at the environmental/water engineering nexus – share insights from research and practical experience in the field to generate best solutions for the future on issues such as river system management, environmental challenges, watershed management and restoration, dam safety, hydraulic structures, and so much more.

This Congress provides an opportunity to meet and share ideas in the only U.S. city to be named one of five international "Destinations to Watch" in 2009. Kansas City's culinary scene, downtown renaissance, and overall affordability are cited as major reasons for KC's ranking as a top pick. An energetic city forged by a rich history, Kansas City is brimming with activities to keep visitors entertained – swinging jazz, eclectic cuisine, one-of-a-kind museums, a thriving arts scene, and fantastic shopping. Part of the city's charm lies in its beauty, with an impressive network of boulevards, spacious parks, and, of course, exquisite fountains. The city's signature food – mouth-watering BBQ – can be savored at more than 100 establishments. Its unique museums include the world-class Nelson-Atkins Museum of Art, the Negro Leagues Baseball Museum, and the American Jazz Museum. And the city is passionate about the arts with outstanding symphony, ballet, theater, and opera companies.

Please join us in this charming city, which truly depicts the harmony that can be achieved between the environment and water resource development. We know you will professionally benefit not only from the technical program, but also from Kansas City's unique social experience.



Sincerely,

William H. Espey, Jr., Ph.D., P.E., D.WRE, M.ASCE
General Congress Chair



Our Congress technical program focuses on *Sustainability of the GREAT RIVERS OF THE WORLD and the Complex Balance Between the Environment and Development of Water Resources* concentrated on these 13 topics:

- 11th Water Distribution Systems Analysis Symposium (WDSA09)
- 7th Symposium on Groundwater Hydrology, Quality, and Management
- 6th Urban Watershed Management Symposium
- Emerging and Innovative Technology
- Environmental Engineering
- History and Heritage
- Hydraulics and Waterways
- International Issues
- Irrigation and Drainage
- Local Issues
- Planning and Management
- Water, Wastewater, and Stormwater
- Watersheds

Please see page 5 for a more comprehensive overview of the technical program.

CONGRESS STEERING COMMITTEE

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IMPORTANT PANEL DISCUSSIONS & SPECIAL SESSIONS

Our Congress technical program will offer a practical look at important topics of the day. Here is a sample of presentations you will not want to miss:

Aging Infrastructures – Critical Issues Facing Our Cities

America's infrastructure – roads, bridges, schools, water/wastewater systems, and other public works, suffering from neglect, lack of modernization, and inadequate maintenance – has been in continued decline for many years. A comprehensive program with priority funding is critical to address the nation's infrastructure conditions to achieve sustainable levels of functionality for future generations.

History of the Great Rivers of the World

As the keystone of the 2009 EWRI Congress, our Congress' technical program theme focuses on Great Rivers of the World and the engineering challenges of balancing environmental, development and critically important growth issues while achieving a sustainable future. This session will present a historical perspective of our engineering heritage and legacy, with respect to both successes and failures – to provide an essential understanding for advancing the profession.

Moderator: Jerry R. Rogers, Ph.D., P.E., D.WRE, Dist.M.ASCE (Emeritus Professor, University of Houston)

Case Studies – Role of Technology in Water Resources Planning

In 2006, the EWRI Planning and Management Council approved the formation of a Task Committee (TC) to examine technology's role in water resources planning and management. This session will provide a final update on progress by offering international case studies that the TC has undertaken to document outcomes and effects of technologies – e.g., geographic information systems, computer models, decision support systems, remote sensing tools, novel monitoring techniques, and light detection and ranging (LIDAR) – on a challenging variety of water resources issues. Overall, the case studies give a comprehensive snapshot of the best technologies being employed by water resources professionals throughout the world. The session will conclude with a panel discussion by members of the TC and audience participation encouraged through a moderated Q&A session. Input from this session will reflect findings in the ASCE publication that documents the TC's findings. *Moderator: Elizabeth Perez (Brown & Caldwell)*

International Sustainable Development: Lessons from the Field

The history of environmental and water resources development in low-income communities is fraught with unintended consequences and apparent "failures." This can be especially frustrating to people new to the field (i.e., students). In this panel, we will present some examples of projects that have gone differently than planned, and the lessons learned. Lessons include the importance of working closely with communities and being flexible to reduce unintended consequences and ensure sustainability of projects. *Moderator: David Watkins (Michigan Technological University); Panelists: Cathy Leslie (Engineers Without Borders), Nina Miller (Water for People), Ned Breslin (Water for People)*

CONGRESS KEYNOTE

LTG Robert L. Van Antwerp Jr., Chief of Engineers and Commanding General, U.S. Army Corps of Engineers, will discuss USACE's leadership role and challenges in developing and maintaining the nation's waters while protecting the environment.

The Great Lakes – A Sustainable Future

The Great Lakes, an international treasure and national water resources jewel, face competing and often conflicting interests in uses such as industrial, water supply, environmental, navigational, and recreational. Recently, there has also been concern about the introduction of invasive species. *This session will offer papers on a broad range of topics followed by a panel discussion. Presentations will tentatively follow "Great Lakes Diversion Committee (6th)" by Espey, Melching, Muste; "Great Lakes Levels and St. Clair/Detroit River Study" by Schmidt, et al.; "Great Lakes Hydrology;" and "A Chicago River Modeling" by Dr. Marcelo Garcia.*

Katrina – What Has Been Accomplished?

Since Katrina in 2005, progress is being made to repair and improve the level of hurricane flood protection in the New Orleans area. Improvements encompass a broad range of policy and regulatory issues, facility updates, and coastal wetlands restoration. *Tentative session participation by experts directly involved.* *Moderator: Bill Espey (Espey Consultants, Inc.)*

Stormwater Utility – Experience a Revenue Stream

Since 1975, stormwater utilities have provided steady and equitable funding for municipal stormwater programs. In the past, these utilities were established by progressive communities or large local or regional governments with significant flooding problems. Now, regulations and public expectations for water quality and quantity have heightened the pressure on municipal stormwater staff everywhere. Staff find these driving forces are only satisfied when a thoughtful plan meets with adequate funding. Today's stormwater programs are expected to meet a varying array of demands, including new regulations and land development. A stormwater utility provides a steady, predictable revenue stream. This session will discuss successful stormwater utilities throughout the country. A panel of national experts and local stormwater utility managers will describe lessons learned by several communities in establishing such a funding stream in local government and share the key steps and rationale behind the charges. *Moderator: Charlene Johnston, P.E. (AMEC)*

The Roles of Government Agencies in Regional Water Planning

Sponsored by the EWRI Water Resources & Environmental Planning & Management Committee, this panel will be the next installment in a series of EWRI forums on roles of government agencies in regional and statewide planning. Past panels have discussed trends in state-wide water planning and the evolving roles of the federal government in the formulation of state water plans. This year's panelists will focus on specific driving and contributory roles of state and federal agencies, through case studies and general discussion on relevant policy initiatives:

- State and federal regulatory drivers for regional water planning
- Government agencies as stakeholders and facilitators in planning processes driven largely by localized public decision-making as opposed to centralized methodological protocols
- Distribution of decision-making authority in statewide and regional water plans
- Should regional planning be incentivized by the government beyond regulatory constructs?

Moderators: Timothy Feather (CDM), Kirk Westphal (CDM)

Women and Diversity in Engineering

The Education Council is sponsoring a number of panel discussions addressing women and diversity in engineering. These sessions will engage students, engineering professors, and professional engineers on the panels to discuss:

- Recruitment and retention of women professors and other professors of diverse backgrounds
- Distinguished women in engineering
- Diversity and students in engineering

Moderators: Cassie Klumpp (U.S. Bureau of Reclamation), John Warwick (University of Nevada, DRI), Curt Elmore (Missouri S&T)

How to Be An Expert Witness

Serving as an expert witness is both a vital service to the judicial system and an income to the expert engineer. Most states follow federal rules and case law regarding the qualities a professional must possess to be accepted as an expert in any given field and, thus, permitted to testify. Qualifying for Diplomate status in the American Academy of Water Resources Engineers would be a minimum baseline of education and experience for qualifying as an expert in court. Beyond that, experience in specific areas relevant to the issues of the case in which you are asked to render an opinion is absolutely critical. This session will explore the legal basis for allowing expert testimony, qualifications an expert must possess to qualify to render an opinion on any given subject, what an attorney looks for in an expert, how to approach the "project of serving as an expert witness," rendering the expert report, giving an expert deposition, and giving live testimony at trial. Finally, a "live demonstration" of good and bad expert testimony using an actual case will be presented. *Presenter: Kenneth A. Goodwin (Law Office of Kenneth A. Goodwin)*

2009 EWRI CONGRESS PRELIMINARY PROGRAM TABLE OF CONTENTS

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SATURDAY, MAY 16, 2009

8:30 am – 5:30 pm
8:30 am – 9:00 pm

TECHNICAL TOURS
Committee Meetings

SUNDAY, MAY 17, 2009

7:00 am – 7:00 pm
7:00 am – 5:00 pm
7:30 – 8:00 am
7:30 – 9:00 am
8:00 am – 5:00 pm
8:00 am – 5:00 pm

REGISTRATION
Speaker Ready Room
Networking Break for Short Course Participants
Past Chairs' Breakfast
Hospitality Lounge – International & Registered Guests

SHORT COURSES

#1: *Curve Number Rainfall-Runoff: Professional Applications*
#2: *Principles of Streambank Analysis and Stabilization*

SHORT COURSE

#3: *Treatment of Uncertainty in Water Resources Modeling and Analysis*

Committee Meetings

SOCIAL TOURS

Networking Break for Short Course Participants
Lunch Break for Short Course Participants
Networking Break for Short Course Participants

SHORT COURSE

#4: *The Arc Hydro Groundwater Data Model*

Grand Opening of the Exhibit Hall
Congress Ice Breaker Reception – Section Welcome – in Exhibit Hall

8:00 am – 3:00 pm

8:30 am – 9:00 pm
10:00 am – 5:30 pm
10:30 – 11:00 am
12:00 – 1:00 pm
3:00 – 3:30 pm
3:00 – 5:00 pm

6:00 – 8:00 pm
6:00 – 8:00 pm

MONDAY, MAY 18, 2009

7:00 am – 7:00 pm
7:00 am – 6:30 pm
7:00 am – 6:30 pm
7:30 – 8:45 am

REGISTRATION

Speaker Ready Room
Bookstore Open
Opening Keynote Breakfast & Lifetime Achievement Award Presentation
Spouse/Guest Orientation Breakfast
Hospitality Lounge – International & Registered Guests
Networking Break in Exhibit Hall
Daily Moderator Briefing
Exhibit Hall Open

CONCURRENT TECHNICAL SESSIONS I

AAWRE Engineering Ethics Workshop #1
Networking Break in Exhibit Hall
Technical Poster Session I

CONCURRENT TECHNICAL SESSIONS II

Lunch on Your Own

CONCURRENT TECHNICAL SESSIONS III

Technical Poster Session II
Networking Break in Exhibit Hall

CONCURRENT TECHNICAL SESSIONS IV

AAWRE Induction Ceremony
AAWRE Diplomate & Visiting International Fellows Reception
Committee Meetings

7:30 – 10:30 am
8:00 am – 5:00 pm
8:30 – 9:00 am
8:30 – 9:00 am
8:30 am – 4:00 pm
9:00 – 10:30 am
9:00 – 11:00 am
10:30 – 11:00 am
10:30 am – 12:30 pm
11:00 am – 12:30 pm
12:30 – 2:00 pm
2:00 – 3:30 pm
2:00 – 5:30 pm
3:30 – 4:00 pm
4:00 – 5:30 pm
6:00 – 6:30 pm
6:30 – 8:00 pm
6:00 – 10:00 pm

TUESDAY, MAY 19, 2009

7:00 am – 6:30 pm
7:00 am – 6:30 pm
7:00 am – 6:30 pm
7:30 – 8:45 am
7:30 – 8:45 am

REGISTRATION

Speaker Ready Room
Bookstore Open
Environmental Council Breakfast, Awards, and Lecture
Hydraulics & Waterways and Groundwater Councils Breakfast, Awards, and Lecture
Hospitality Lounge – International & Registered Guests

Exhibit Hall Open

Networking Break in Exhibit Hall

Daily Moderator Briefing

Technical Poster Session III

CONCURRENT TECHNICAL SESSIONS V

Networking Break in Exhibit Hall

CONCURRENT TECHNICAL SESSIONS VI

Lunch on Your Own

8:00 am – 5:00 pm
8:30 am – 4:00 pm
8:30 – 9:00 am
8:30 – 9:00 am
8:30 am – 12:30 pm
9:00 – 10:30 am
10:30 – 11:00 am
11:00 am – 12:30 pm
12:30 – 1:30 pm

TUESDAY, MAY 19, 2009 continued

1:30 – 3:00 pm
1:30 – 5:00 pm
3:00 – 3:30 pm
3:30 – 5:00 pm
3:30 – 5:00 pm
5:00 – 6:30 pm
5:00 – 7:00 pm
6:00 – 10:00 pm

CONCURRENT TECHNICAL SESSIONS VII

Technical Poster Session IV

Networking Break in Exhibit Hall

CONCURRENT TECHNICAL SESSIONS VIII

Student Posters/Papers

CONCURRENT TECHNICAL SESSIONS IX

AAWRE Engineering Ethics Workshop #2
Committee Meetings

WEDNESDAY, MAY 20, 2009

6:30 am – 7:00 pm
7:00 am – 6:00 pm
7:00 am – 6:00 pm
7:30 – 8:45 am

REGISTRATION

Speaker Ready Room

Bookstore Open

Planning and Management Council Breakfast, Awards, and Lecture

Irrigation and Drainage Council Breakfast, Awards, and Lecture

Hospitality Lounge – International & Registered Guests
Exhibit Hall Open

Networking Break in Exhibit Hall

Daily Moderator Briefing

Technical Poster Session V

CONCURRENT TECHNICAL SESSIONS X

The Oklahoma State University – Woolpert Scholars Session on Urban Stormwater Management

Student Posters/Papers

Networking Break in Exhibit Hall

CONCURRENT TECHNICAL SESSIONS XI

PB Student Design Competition

Student Posters/Papers

Lunch on Your Own

Student Luncheon

CONCURRENT TECHNICAL SESSIONS XII

Student Technical Paper Competition

Technical Poster Session VI

Student Posters/Papers

Networking Break in Exhibit Hall

CONCURRENT TECHNICAL SESSIONS XIII

Career Opportunities After College Panel Discussion

Technical Tour

CONCURRENT TECHNICAL SESSIONS XIV

Offsite Event: BBQ Fest at Faulkner's Ranch

7:30 – 8:45 am

8:00 am – 5:00 pm
8:30 am – 4:00 pm
8:30 – 9:00 am
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3:00 – 3:30 pm
3:30 – 5:00 pm
3:30 – 5:00 pm
3:30 – 5:00 pm
5:00 – 6:30 pm
7:00 – 10:00 pm

THURSDAY, MAY 21, 2009

7:00 am – 4:00 pm
7:00 am – 4:00 pm
7:00 am – 4:00 pm
7:30 – 8:45 am

REGISTRATION

Speaker Ready Room

Bookstore Open

Watershed & Urban Water Resources Research Councils Breakfast, Awards, and Lecture

Water Distribution System Analysis Symposium Breakfast

Hospitality Lounge – International & Registered Guests

Exhibit Hall Open

Networking Break in Exhibit Hall

Daily Moderator Briefing

Technical Poster Session VII

CONCURRENT TECHNICAL SESSIONS XV

Networking Break in Exhibit Hall

AAWRE Engineering Ethics Workshop #3

CONCURRENT TECHNICAL SESSIONS XVI

Lunch on Your Own

CONCURRENT TECHNICAL SESSIONS XVII

Technical Poster Session VIII

Networking Break in Exhibit Hall

CONCURRENT TECHNICAL SESSIONS XVIII

Committee Meetings

7:30 – 8:45 am
8:00 am – 5:00 pm
8:30 am – 3:30 pm
8:30 – 9:00 am
8:30 – 9:00 am
8:30 am – 12:30 pm
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11:00 am – 12:30 pm
12:30 – 1:30 pm
1:30 – 3:00 pm
1:30 – 5:00 pm
3:00 – 3:30 pm
3:30 – 5:00 pm
6:00 – 10:00 pm

Subject to change

This Congress, consisting of four days of technical sessions, will focus on protecting the life and bio-diversity of our GREAT RIVERS while sustaining development and growth there on local, national, and global levels. The Congress technical sessions may cover these topics:

11th Water Distribution Systems Analysis Symposium (WDSA09)

- Asset Management: GIS tools, maintenance, system expansion
- Field Work: Tracer studies, pressure tests, case studies
- Mixing and Dispersions: Junctions, pipes and deadends, storage tanks
- Network Hydraulics: Steady state, transients, leakage management
- Network Models: Development and applications, calibration and verification, optimization, aggregation, reliability, topology, real time operation, planning, SCADA
- Network Water Quality: Monitoring and modeling, dose exposure, water quality regulations, calibration and verification
- Water Distribution Systems Security: Sensor design, sensor location, analysis of sensor signals, contamination source identification, response and containment
- Water Usage: Monitoring and modeling, estimation and simulation, end users, forecasting, demand management

7th Symposium on Groundwater Hydrology, Quality, and Management

- Climate Change Impacts on Groundwater Resources
- Coupling Physical, Chemical, or Biological Methods for Innovative Groundwater Remediation
- Groundwater Characterization and Monitoring
- Groundwater Council's Student Presentation Competition
- Groundwater Management and Its Uncertainty
- Groundwater Quality and Human Health
- Groundwater Quality Modeling – Solute Transport and Reactive Transport
- Hydrogeophysics and Its Applications
- Impacts of Urbanization on Groundwater Quality and Quantity
- Interaction of Stream and Groundwater & Integrated Management
- Managed Aquifer Recharge System
- Multimodel Approaches for Uncertainty Assessment in Groundwater Hydrology
- Probabilistic Methods for Aquifer Parameter Estimation and Groundwater Modeling, and Inverse Modeling
- Saltwater Intrusion Modeling and Management of Coastal Aquifers
- Unconfined Aquifer Protection and Sustainability

6th Urban Watershed Management Symposium

- A Watershed Approach to Urban Watershed Management
- BMPs (Performance, Design, Maintenance, Treatment Technologies, Monitoring, Costs, Retrofits)
- Certification of Manufactured BMPs/ Devices
- CSO/SSO Control
- Green Infrastructure
- Integrated Watershed Management and Master Planning
- Low Impact Development
- Low Impact Development and Infiltration Issues
- Managing For TMDLs
- MENA/ATI
- Sediment & Erosion Control

- Stormwater Solids
- Sustainable Development Issues
- Total Water Management
- Urban Watershed and Combined Sewerage System Management – The Kansas City Experience
- Wet-Weather Flow Emerging Contaminants
- Wet-Weather Flow Pathogen
- Wet-Weather Flow/Urban Watershed Modeling
- Woolpert Scholars Student Symposium

Education and Research

- Diversity
- Women in Engineering

Emerging and Innovative Technology

- Changing Face of Data Management
- EIT in Water and Wastewater Treatment
- Environmental Cyber-Sensing and Modeling
- Innovative and Green Technologies for Water Resources Development and Management in Small Communities and Developing Regions
- Interdisciplinary Education Programs
- Water Resources and Environmental Vision 2050
- Water Resources Disasters Waiting to Happen

Environmental Engineering

- Clean Water Act
- Environmental Cyber-Sensing and Modeling
- Environmental Permitting
- Fate of Contaminants of Emerging Environmental Concern
- Hazardous Waste Management
- Industrial Waste Treatment
- Non-Point Source Pollution
- Soil and Subsurface Remediation
- Strategies for Small-Scale Wetland Mitigation

History and Heritage

- Corps History of Missouri-Upper Mississippi Basins and Aerial Photographs of River Works Changes, including Corps Dust Bowl Dam on Republican River
- EPA-Kansas City, MO, Water-Environmental History and Kansas Water-Environmental History
- History of Large Consulting and Environmental Firms in Kansas City
- Water and Environmental History

Hydraulics and Water Resources

- Asset Management
- Backwater Treatments
- Bridge Scour
- Computational Design
- Computational Hydraulics and Hydrodynamics
- Computational Methodologies in Hydrodynamics
- Dam Operation, Management, and Safety
- Eco-Hydraulics
- Eco-Hydraulics Modeling
- Eco-Hydrology
- Educational Aspects of Computational Hydraulics
- Fixed-Bed Dam/Levee Breach Models
- Flow Around Vegetation
- GIS- and CAD-based Computational Modeling in Hydraulics and Water Resources
- In Stream Structures for Habitat Restoration

- Large River Habitats
- Large River Restoration
- Lower Mississippi Navigation
- Movable-Bed Dam/Levee Breach Models
- Optimization Schemes
- Other
- Risk Uncertainty
- River Stabilizations
- Sediment Transport Modeling
- Sedimentation
- Stream Restoration

Hydraulics and Waterways

- Aging Dams
- Application of Monte Carlo Method, Artificial Neural Network, and Fuzzy Logic in Computation

International Issues

- Environmental and Water Resources Topics in Developing Countries
- International Dam Failures
- International Outreach Activities
- International Water Agency Partnerships
- International Water Conflicts and Case Studies

Irrigation and Drainage

- Advances in Accuracy and Economics of Water Measurement
- Agricultural Drainage Management Systems for Improving Drainage Quality and Reducing Hypoxia in Mississippi River and Gulf of Mexico
- Asset Management
- Climate Change: Managing Floods, Droughts, and Irrigation
- Current Irrigation Scheduling Advisory Systems
- ET Estimates in Mitigation
- ET in Water Rights and Water Transfers (inter- and intrastate)
- ET Measurement and Remote Sensing of ET
- Failing Drainage Infrastructure and Its Replacement
- Impacts of Biofuel Production and Crop Production on Regional ET, Water Balance, and Water Quality
- Irrigation Policy and Economics
- NPS Pollution in Agriculture and TMDLs
- Soil Moisture Measurement
- Urbanizing Area/Landscape ET and Crop Coefficients
- Water Quality and Drainage Impacts in the Hypoxia Zone from Biofuel Production and Increased Commodity Prices

Local Issues

- 404 Permitting Case Studies
- APWA 5600
- Brownfields
- Groundwater Recharge
- Kansas City, MO, Combined Sewer Overflow Program
- Levees on Major Rivers
- Low Impact Development / Green Build
- National Flood Insurance Basics
- USACE Section 14 Program
- US Geological Survey Water Quality Studies
- Water Rights

Planning and Management

- Asset Management
- Civil Infrastructure Frontier
- Conflict Management and Decision Making

- Current Climate Change Issues and Associated Legislation
- Evolutionary Computations
- Flood-Fighting Issues
- Floodplain Mapping
- GIS in WRP
- GV Loganathan Symposium on Reservoir Operation
- Impacts of Climate Change
- Infrastructure and Interdisciplinary Issues
- Integrated Groundwater and Surface Water Management
- International Issues
- Local Perspectives on Adaptation and Planning
- Security Enhancements of Environmental and Water Infrastructure Systems and Establishments
- State of Climate Science
- Stochastic and Probabilistic Methods for Water Resources Planning and Management
- System Analysis for Watershed Management
- Technology, Policy and Fiscal Issues in Infrastructure Planning
- Vegetation on Flood Control Levees
- Water Resources Education
- Water Supply, Sanitation, and Environmental Quality in Developing Nations

Water, Wastewater, and Stormwater

- Asset Management
- Bio-sludge
- Concentrate Management in Desalination
- Emerging Technologies
- Endocrine Disruptors and Micro-pollutants
- Membranes in Water and Wastewater Treatment
- Residuals
- Security Enhancements of Environmental and Water Infrastructure Systems
- Sustainable Design for Wastewater
- The Water Supply Industry
- Water and Wastewater Recycling and Reuse
- Water Distribution System Analysis
- Water Reallocation and Transfers among Competing Uses
- Water Supply or Treatment Projects in Developing Nations

Watersheds

- Debris Flow Hazard Analysis and Modeling
- Extrapolation of Flood Flow Frequency Curves
- Great Rivers of the World
- Hydrologic Monitoring Networks
- Land Use/Cover Changes and Water Quality/Quantity: Observations and Measurements
- Mississippi River Basin
- Modeling Hydroclimate and Climate Change
- Modeling of Flow Processes in Wetlands
- NEXRAD Rainfall Data Analysis and Application
- Large Rivers
- Predictions
- Probabilistic Approaches for Watershed Processes
- Water Quality Trading
- Watershed Management
- Watershed Modeling for Storm Water Management: Challenges and Directions
- Wetland Hydrologic Evaluation, Wetland Restoration, and Numerical Analysis

2009 CONGRESS PROGRAM

Below are descriptions for featured events. Complete details of the technical program will be posted on the Web site and published in the Final Program.

SATURDAY, MAY 16, 2009

8:30 am – 12:00 pm

TECHNICAL TOUR

Lake Lenexa – Dam and Spillway in Lenexa, Kansas



Completed in September 2007 at a cost of over \$11 million, the Lake Lenexa Dam and Spillway was nominated by the U.S. Society on Dams (USSD) for its 2008 Award of Excellence. A number of innovations were incorporated into the construction of the new facility that lies within 240 acres of natural parkland. “The [Lake Lenexa] facility was designed to harmonize with nature – both functionally and aesthetically.” The City of Lenexa opted to take a different approach to stormwater management, treating it as an asset on which to capitalize rather than as a problem to be dealt with. This new perspective proved successful because it allowed for improved flood control, improved water quality, preservation of natural streams, and opportunities for recreation and education.

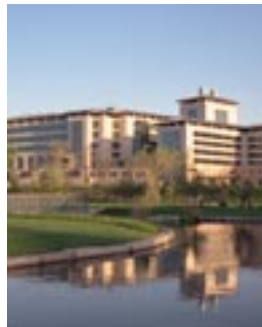
Fee: \$25, includes transportation and tour.

1:00 – 3:00 pm

TECHNICAL TOUR

Brush Creek Corridor – A Cultural Development in Kansas City

Kansas City’s Brush Creek Corridor has come a long way since its 1977 flood that left 25 dead and over \$100 million in property damage. Since then, more than \$1.3 billion



has been invested in the corridor, and the resulting development has helped to connect the east and west areas of the city. Among the major business developments that have occurred along the corridor are the \$180 million Stowers Institute for Medical Research that has provided a substantial boost to the community’s life science efforts. In addition, there are a number of residential areas, libraries, museums, churches, clubs, and restaurants here that have contributed to the Brush Creek Corridor’s development.

Fee: \$25, includes transportation and tour.

3:30 – 5:30 pm

TECHNICAL TOUR

L-385 Levee on the Missouri River

The L-385 Levee in Platte County, MO, is the first new levee in the U.S. Army Corps of Engineers (USACE) Kansas City District in more than 30 years. Interest in constructing the levee heightened in the aftermath of major flooding that hit the Midwest in 1993. Some 1,300 acres of developed and undeveloped land were flooded, closing nearly 70 businesses, putting more than 5,000 people out of work for months. Construction on the new levee was completed in May 2005. Since then, there has been one high water event and the levee performed as intended, protecting homes and business



development from floodwaters. The tour will show that levees are hardworking structures involving complex engineered systems such as gatewells, I-walls, pump stations, rolling gates, stoplog gaps, and relief wells.

Fee: \$25, includes transportation and tour.

8:30 am – 9:00 pm • COMMITTEE MEETINGS



SUNDAY, MAY 17, 2009

7:00 am – 7:00 pm

REGISTRATION

- 7:00 am – 5:00 pm **Speaker Ready Room**
- 7:30 – 8:00 am **Networking Break for Short Course Participants**
- 7:30 – 9:00 am **Past Chairs’ Breakfast**
- 8:00 am – 5:00 pm **Hospitality Lounge – International & Registered Guests**

8:00 am – 5:00 pm

SHORT COURSE #1:

Curve Number Rainfall-Runoff: Professional Applications

PRESENTERS: Richard H. Hawkins, Professor of Watershed Resources, University of Arizona, Tucson, AZ; Donald E. Woodward, Natural Resources Conservation Services (retired)

The Curve Number Method is widely used in applied hydrology and environmental impact analysis. Because of its authority, unique technological niche, and transparency, it is the premier technique for converting event rainfall into direct runoff. It finds wide application in rainfall response for ungaged watersheds,

and as a process component in continuous models. It is, however, incompletely understood, often misused, or misapplied, and realizations for applications and developments beyond the original handbook are not generally appreciated.

This Short Course will provide an open factual background on the Curve Number Method: origins and assumption, limits of applications, and recent findings, leading to more informed professional application of the method. Its role in understanding general rainfall runoff hydrology will be explored and discussed. The Short Course includes active, open discussion with peers and the presenters.

See Registration Form (page 16) for fees. Registration fee includes course materials, lunch, and networking breaks.

SUNDAY, MAY 17, 2009

8:00 am – 5:00 pm

SHORT COURSE #2:**Principles of Streambank Analysis and Stabilization**

PRESENTERS: Andrew Simon, Ph.D., Research Geologist, USDA-ARS National Sedimentation Laboratory, Oxford, MS; Robert E. Thomas, School of Engineering, University of Mississippi, Oxford, MS

This one-day Short Course is designed for both public and private professionals engaged in stream investigation, management, stabilization, and restoration. This Course is designed to clearly demonstrate the essential links between channel instability and streambank erosion. The forces controlling streambank stability, analysis of these processes, and modeling of streambank stability with application to design of bank-stabilization projects will be covered. Students will be given and learn how to use the "Bank-Stability and Toe-Erosion Model (BSTEM)" (Simon et al., 2000) for predicting bank instability and designing stable bank geometries. Lectures will introduce the fundamental concepts linking streambank processes and geomorphic adjustments in the fluvial system. Modeling will provide students with the opportunity to investigate the factors controlling bank stability and understanding their significance when designing mitigation measures. Students will be allowed to keep the bank-stability modeling software for future use.

See Registration Form (page 16) for fees. Registration fee includes course materials, lunch, and networking breaks.



Kansas City has MORE WORKING FOUNTAINS than any other city on earth.

8:00 am – 3:00 pm

SHORT COURSE #3:**Treatment of Uncertainty in Water Resources Modeling and Analysis**

PRESENTER: Srikanta Mishra, Ph.D., Group Manager, Systems Modeling, INTERA Inc., Austin, TX

Scientists and engineers dealing with water resources are often confronted with uncertainty caused by incomplete knowledge and/or natural randomness. Traditional deterministic modeling of uncertainty in water resource models may involve the use of best-guess or worst-case assumptions about model inputs to quantify their impacts on model predictions. Alternatively, a set of optimistic and pessimistic values is sometimes utilized to provide upside and downside forecasts around a reference scenario.

Recently, there has been greater interest in the use of probabilistic uncertainty analysis methods, which allow a better definition of the range of likely outcomes and the likelihood of each outcome. This Short Course will provide an introduction to several such methodologies including Monte Carlo simulation, analytical error propagation techniques, and probability/logic tree analysis method. Topics to be covered include: (a) characterization of model and parameter uncertainty; (b) translation of uncertainty in model inputs into uncertainty in model predictions; (c) determination of key drivers of model output uncertainty; and (d) protocols for performing uncertainty analysis and communicating its results.

This Short Course will be useful for engineers, scientists, managers, and regulators who deal with the development and/or review of water resource models under uncertain conditions.

See Registration Form (page 16) for fees. Registration fee includes course materials, lunch, and networking breaks.

8:30 am – 9:00 pm

COMMITTEE MEETINGS

10:30 – 11:00 am

Networking Break for Short Course Participants

12:00 – 1:00 pm

Lunch Break for Short Course Participants

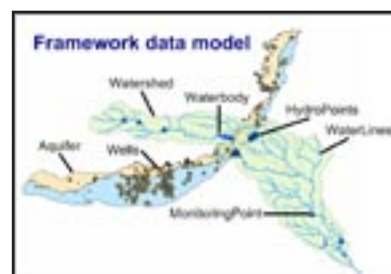
3:00 – 3:30 pm

Networking Break for Short Course Participants

3:00 – 5:00 pm

SHORT COURSE #4:**The Arc Hydro Groundwater Data Model**

PRESENTERS: Norm Jones, Professor, Civil and Environmental Engineering Department and Director, Environmental Modeling Research Laboratory, Brigham Young University, Provo, UT; Royd Nelson, Aquaveo LLC, South Jordan, UT



Arc Hydro Groundwater (AHGW) has been under development for the past four years as an extension of or companion to the Arc Hydro surface water data model. The data model is designed to support various types of groundwater data in ArcGIS, including well/borehole data, 3D representations of hydrostratigraphy, and data from simulation models. It is fully compatible with the surface water data model and consists of six primary components: Framework Data Model; Wells and Boreholes; Hydrostratigraphy; Geology; Time Series; and Simulation. This Short Course will present an overview of the data model and associated tools. It will also provide information on downloading sample geo-databases and free tools. A book on Arc Hydro Groundwater is planned.

Registration required (see page 16). No fee.

SUNDAY, MAY 17, 2009

6:00 – 8:00 pm Grand Opening of the Exhibit Hall

Our Exhibit Hall will serve as the confluence for all Congress business. If your organization provides goods, services, or software to support environmental and water-related design, construction, research, and operations, this Congress provides an excellent opportunity for you to develop new customers, and the Exhibit Hall will be the special place where it all comes together for you.

6:00 – 8:00 pm Congress Ice Breaker Reception – Section Welcome – in Exhibit Hall

Join us in the Exhibit Hall to share a Mid-America Welcome to the 2009 Congress! Get into the flow with an orientation look at the days ahead. Network with colleagues from across the continent and around the world.

Included for all Full, Student, and Spouse/ Guest Registrants. Additional Tickets: \$25.

SUNDAY, MAY 17, 2009 • 10:00 am - 5:30 pm SOCIAL TOUR: EXPLORE KANSAS CITY

All-day transportation will be available on a continuous loop basis to take you to and from each of the following locations and the Congress Hotel.

Transportation Fee: \$20 per person. The cost of admission to each attraction is not included, so that you may choose which sites to visit. (All admission fees shown are approximate.)

National World War I Museum at Liberty Memorial

Open 10:00 am – 5:00 pm, \$10 admission

The National World War I Museum is an extraordinary emotional and educational experience, which shares the history of a war whose impact still echoes today. With one of the greatest collections of World War I artifacts anywhere in the world, this new state-of-the-art complex uses highly interactive technology to bring history to life.



Nelson-Atkins Museum of Art

Open 10:00 am – 5:00 pm, free or \$6 for feature exhibit

From ceramic objects found in ancient Chinese tombs to whimsical sculptures of badminton birdies, the Nelson-Atkins collection spans over 5,000 years of humanity in a glorious environment that brings different connections and unique experiences as compelling as a single “blockbuster” event. Whether you are exploring the collection for the first or the hundredth time, you’ll find something new here!

College Basketball Experience

Open 11:00 am – 6:00 pm, \$10 admission

Further cementing the area’s reputation as a hoops’ hotbed, Kansas City is now home to the state-of-the-art College Basketball Experience (CBE). Connected to the new Sprint Center arena via a common lobby, the 41,500-square-foot entertainment facility contains hands-on, interactive basketball exhibits and houses the National Collegiate Basketball Hall of Fame.

Arabia Steamboat Museum

Open 12:00 – 5:00 pm, \$12.50 admission

The Steamboat Arabia was a side wheeler steamboat that hit a snag in the Missouri River and sank near what today is Parkville, Missouri, on September 5, 1856. After 132 years lying hidden from the outside world, the Arabia was rediscovered. Thousands of artifacts from the steamboat and its cargo are now on display in the museum.

MONDAY, MAY 18, 2009

7:00 am – 7:00 pm

REGISTRATION

7:00 am – 6:30 pm Speaker Ready Room

7:00 am – 6:30 pm Bookstore Open

7:30 – 8:45 am

Opening Keynote Breakfast & Lifetime Achievement Award Presentation

Welcome to the Congress



**C. DALE JACOBSON, P.E.,
BCEE, F.ASCE
EWRI President 2009-2010**

Your official welcome to the Congress will be offered by EWRI President C. Dale Jacobson, P.E., BCEE, F.ASCE.

The 2009 Lifetime Achievement Award is presented to individuals in recognition of their lifelong and eminent contributions to the environmental and water resources engineering disciplines through practice, research, and public service.

Keynote Speaker



**LTG ROBERT L. VAN ANTWERP JR.,
M.Sc., MBA, P.Eng.
Chief of Engineers and Commanding
General, U.S. Army Corps of Engineers**

LTG Robert L. Van Antwerp will provide an overview of USACE’s leadership role and challenges in developing and maintaining the nation’s waters while protecting the environment.

MONDAY, MAY 18, 2009

LTG Van Antwerp was confirmed as the 52nd USACE Chief of Engineers in March 2007. Van Antwerp's previous assignment was as Commanding General, U.S. Army Accessions Command and Deputy Commanding General for Initial Military Training at Fort Monroe, VA. Additionally, Van Antwerp exercised Department of the Army-directed executive agent authority over the U.S. Military Entrance Processing Command. His command assignments have included the U.S. Army Maneuver Support Center and Fort Leonard Wood/Commandant, U.S. Army Engineer School; U.S. Army Corps of Engineers Los Angeles District during the Northridge Earthquake of 1994; the U.S. Army Division, South Atlantic, Atlanta, Georgia; and the 326th Engineer Battalion, 101st Airborne Division (Air Assault) during the Gulf War.

Opening Keynote Breakfast included for Full, Student, and Monday-Daily Registrants. Additional Tickets: \$25.

7:30 – 10:30 am Spouse/Guest Orientation Breakfast

Your registered spouse or guest is invited to this casual buffet breakfast that is followed by a presentation by a representative from the Kansas City Convention and Visitors Association. Come enjoy an overview of what Kansas City has to offer.

The Spouse/Guest Orientation Breakfast is included in the Spouse/Guest Registration. Additional Tickets: \$35.

8:00 am – 5:00 pm Hospitality Lounge – International & Registered Guests

8:30 – 9:00 am Networking Break in Exhibit Hall

8:30 – 9:00 am Daily Moderator Briefing

8:30 am – 4:00 pm Exhibit Hall Open

9:00 – 10:30 am CONCURRENT TECHNICAL SESSIONS I

9:00 – 11:00 am AAWRE Engineering Ethics Workshop #1

PRESENTERS: David Huddleston, Ph.D., P.E., Dean of Engineering, Tennessee Tech University; Kevin Young, P.E., Practitioner Instructor, Tennessee Tech University, Cookeville, TN

Engineers face situations daily that have ethical implications. This workshop, sponsored by the American Academy of Water Resources Engineers (AAWRE), gives a general overview of ethical principles, presents case studies, and offers small group situational discussions. This is an excellent opportunity for engineers to freshen up on engineering ethics and gain perspective on what other engineers consider to be the best solutions to the specific cases presented.

Registration required (see page 16). No fee.

10:30 – 11:00 am Networking Break in Exhibit Hall

10:30 am – 12:30 pm Technical Poster Session I

11:00 am – 12:30 pm CONCURRENT TECHNICAL SESSIONS II

12:30 – 2:00 pm Lunch on Your Own

2:00 – 3:30 pm CONCURRENT TECHNICAL SESSIONS III

2:00 – 5:30 pm Technical Poster Session II

3:30 – 4:00 pm Networking Break in Exhibit Hall

4:00 – 5:30 pm CONCURRENT TECHNICAL SESSIONS IV

6:00 – 6:30 pm AAWRE Induction Ceremony

This event is by invitation only.

6:30 – 8:00 pm AAWRE Diplomate & Visiting International Fellows Reception

You are invited to the American Academy of Water Resources Engineers (AAWRE) Reception to honor those who recently earned the Diplomate, Water Resources Engineer (D.WRE) credentials, and to recognize cooperating organizations.

At this event, you will also have the opportunity to greet members of the International Council (IC) and to welcome the 2009 EWRI Visiting International Fellowship winners:

Dr. Arun Goel
National Institute of Technology,
(Deemed University)
Kurukshetra, Haryana, India

Jairo I. Hernandez Alvorado
Fondo de Inversion Social de Emergencia
(FISE)
Managua, Nicaragua

Mark Summerton, MJ, Umgeni Water
Pietermaritzburg, South Africa

These Visiting International Fellows, who were competitively selected by the IC's Visiting International Fellowship Task Committee, will participate in the Congress and in additional professional and cultural exchange activities during their visit to the United States.

The IC established the Visiting International Fellowship program to promote cultural and technical exchange between EWRI members and international colleagues from developing countries. This marks the program's ninth year.

Beer, wine, and non-alcoholic beverages will be offered, along with lite fare.

Included for all Full, Student, and Spouse/Guest Registrants. Additional Tickets: \$25.

6:00 – 10:00 pm COMMITTEE MEETINGS



TUESDAY, MAY 19, 2009

7:00 am – 6:30 pm REGISTRATION

7:00 am – 6:30 pm **Speaker Ready Room**

7:00 am – 6:30 pm **Bookstore Open**

7:30 – 8:45 am Environmental Council Breakfast, Awards, and Lecture

You are invited to begin your day with the Environmental Council Breakfast. At this event, Environmental Council awards will be presented. The 2009 Simon W. Freese Environmental Engineering Award Lecture will then be offered by an eminent environmental engineer selected to receive this recognition along with a certificate and cash prize.

Your choice of the Environmental Council or Hydraulics & Waterways and Groundwater Councils Breakfasts is included for all Full, Student, Spouse/Guest, and Tuesday-Daily Registrants. Additional tickets: \$25.

7:30 – 8:45 am Hydraulics & Waterways and Groundwater Councils Breakfast, Awards, and Lecture

The Hydraulics & Waterways and Groundwater Councils will offer an engaging early-morning breakfast program. Following the presentation of Hydraulics & Waterways and Groundwater Councils awards, you will hear a presentation by a distinguished lecturer in the field.

Your choice of the Hydraulics & Waterways and Groundwater Councils or Environmental Council Breakfasts is included for all Full, Student, Spouse/Guest, and Tuesday-Daily Registrants. Additional tickets: \$25.

8:00 am – 5:00 pm
Hospitality Lounge – International & Registered Guests

8:30 am – 4:00 pm
Exhibit Hall Open

8:30 – 9:00 am
Networking Break in Exhibit Hall

8:30 – 9:00 am
Daily Moderator Briefing

8:30 am – 12:30 pm
Technical Poster Session III

9:00 – 10:30 am
CONCURRENT TECHNICAL SESSIONS V

10:30 – 11:00 am
Networking Break in Exhibit Hall

11:00 am – 12:30 pm
CONCURRENT TECHNICAL SESSIONS VI

12:30 – 1:30 pm
Lunch on Your Own

1:30 – 3:00 pm
CONCURRENT TECHNICAL SESSIONS VII

1:30 – 5:00 pm
Technical Poster Session IV

3:00 – 3:30 pm
Networking Break in Exhibit Hall

3:30 – 5:00 pm
CONCURRENT TECHNICAL SESSIONS VIII

3:30 – 5:00 pm
Student Posters/Papers

5:00 – 6:30 pm
CONCURRENT TECHNICAL SESSIONS IX

5:00 – 7:00 pm
AAWRE Engineering Ethics Workshop #2

PRESENTER: Ted Cleveland, Ph.D., P.E., Professor, Texas Tech University, Lubbock, TX

Engineers face situations daily that have ethical implications. This workshop, sponsored by the American Academy of Water Resources Engineers (AAWRE), gives a general overview of ethical principles, presents case studies, and offers small group situational discussions. This is an excellent opportunity for engineers to freshen up on engineering ethics and gain perspective on what other engineers consider to be the best solutions to the specific cases presented.

Registration required (see page 16). No fee.

6:00 – 10:00 pm
COMMITTEE MEETINGS



Kansas City is WELL-KNOWN for its STEAKS, BBQ and JAZZ.

WEDNESDAY, MAY 20, 2009

Wednesday is a day focused on student activities, including student poster displays. Employers, meet your prospective employees!

EWRI 18th Annual Student and Younger Member Photography Contest

EWRI and ASCE encourage students and younger members to submit photos that reflect the theme of the Congress, GREAT RIVERS: Protecting quality of life and bio-diversity while supporting development and growth critically important for a sustainable future.

For more information, contact Glenn Folsom at gfolson@chastainskillman.com.

6:30 am – 7:00 pm REGISTRATION

7:00 am – 6:00 pm **Speaker Ready Room**

7:00 am – 6:00 pm **Bookstore Open**

7:30 – 8:45 am Planning and Management Council Breakfast, Awards, and Lecture

Please join us for the Planning and Management Council Breakfast, which will include presentation of Planning & Management Council awards. Also at this time, the 2009 Julian Hinds Award Lecture will be presented by the author of a paper judged to have made the most meritorious contribution to the field of water resources development, or to an individual for notable performance, long years of distinguished service, or specific actions that advanced engineering in the field of water resources planning, development, and management. The Hinds award consists of a plaque, certificate, and cash prize.

Your choice of the Planning and Management Council or Irrigation and Drainage Council Breakfasts is included for all Full, Student, Spouse/Guest, and Wednesday-Daily Registrants. Additional tickets: \$25.

7:30 – 8:45 am

Irrigation and Drainage Council Breakfast, Awards, and Lecture

The Irrigation and Drainage Council invites you to its Breakfast, with presentation of the Irrigation & Drainage Council awards and the 2009 Royce J. Tipton Award. The Tipton Award is made annually to an ASCE member who has made a definitive contribution to advance the science of irrigation and drainage engineering in the areas of teaching, research, planning, design, construction, or management. The contributions may have been realized in notable performance, long years of service, or specific actions. The award includes a plaque, certificate, and cash prize.

Your choice of the Irrigation and Drainage Council or Planning and Management Council Breakfasts is included for all Full, Student, Spouse/Guest, and Wednesday-Daily Registrants. Additional tickets: \$25.

8:00 am – 5:00 pm

Hospitality Lounge – International & Registered Guests

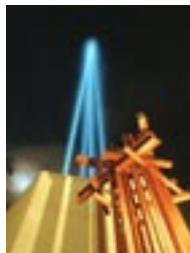
8:30 am – 4:00 pm
Exhibit Hall Open

8:30 – 9:00 am

Networking Break in Exhibit Hall

8:30 – 9:00 am

Daily Moderator Briefing



FRANK LLOYD WRIGHT designed the COMMUNITY CHRISTIAN CHURCH with a “Spire of Light” that can be seen for miles around Kansas City. The original construction contained NO SQUARE CORNERS among the wall junctures.



8:30 am – 12:30 pm

Technical Poster Session V

9:00 – 10:30 am

CONCURRENT TECHNICAL SESSIONS X

9:00 – 10:30 am

The Oklahoma State University – Woolpert Scholars Session on Urban Stormwater Management

An OSU – Woolpert partnership has increased opportunities for engineering students to work on real world problems. Students in Biosystems Engineering, focused on urban water resources issues, were selected from a list of applicants by a joint OSU-Woolpert committee. Students develop a final report, present to OSU colleagues, and travel under Woolpert funding to a national professional meeting to present the results. For questions regarding the program, please contact the session organizer Billy Barfield at billy.barfield@okstate.edu.

9:00 – 10:30 am

Student Posters/Papers

10:30 – 11:00 am

Networking Break in Exhibit Hall

11:00 am – 12:30 pm

CONCURRENT TECHNICAL SESSIONS XI

WEDNESDAY, MAY 20, 2009

11:00 am – 12:30 pm

PB Student Design Competition

PB and EWRI team up to present the Environmental and Water Resources Student Design Competition. As all universities' civil and environmental engineering programs require the experience of undergraduate team design, this competition provides an exciting and constructive platform to demonstrate students' hard work. Teams will be chosen among the applicants to present their projects. The winning team will be determined onsite by a panel of judges. For more information, contact competition chair Bijay Panigrahi at bpanigrahi@bpcgi.com.

11:00 am – 12:30 pm

Student Posters/Papers12:30 – 1:30 pm **Lunch on Your Own**

12:30 – 1:30 pm

Student Luncheon

Attend the Student Luncheon, a wonderful opportunity to network with fellow civil engineering students to learn more about the Students and New Professionals Activities Council of EWRI.

Included for all Student Registrants. Additional tickets are \$25.

1:30 – 3:00 pm

CONCURRENT TECHNICAL SESSIONS XII

1:30 – 3:00 pm

Student Technical Paper Competition

Sponsored by EWRI Student and New Professionals Activities Council is the 2009 ASCE/EWRI Environmental & Water Resources Engineering Student Paper Competition. Here's your chance to develop leadership and presentation skills at the EWRI Congress.

The awards include:

- **Fame** – Qualify to make a technical presentation at the World Environmental & Water Resources (EWRI) Congress 2009 to be held May 17-21, 2009, in Kansas City,

MO, and publish your paper in the Congress proceedings.

- **Fortune** – Grand Prize \$1,000, 1st Place \$500, 2nd Place \$250, and 3rd Place \$125.
- **Travel** – Present your paper at the EWRI Congress, and receive ASCE-regulated travel reimbursement for up to four winners.

Any member of a recognized ASCE student chapter may enter a paper that has not won a prize in any previous national competition. Two categories will be considered: graduate and undergraduate.

The Student Paper Competition is an annual event, and any technical or editorial subject related to environmental/water resources is appropriate for the competition. Judging will be done by members of the ASCE-EWRI Student Activities Council and engineers from the industry.

For more information, contact Dr. Katherine Leonard at leonard@eng.uah.edu.

1:30 – 5:00 pm

Technical Poster Session VI

1:30 – 3:00 pm

Student Posters/Papers

3:00 – 3:30 pm

Networking Break in Exhibit Hall

3:30 – 5:00 pm

CONCURRENT TECHNICAL SESSIONS XIII

3:30 – 5:00 pm

Career Opportunities After College Panel Discussion

EWRI's Congress is an excellent forum for students to consider the possibilities after graduation. This discussion offers insight on life after graduation.

3:30 - 5:00 pm TECHNICAL TOUR Raingarden BBQ

This event will be scheduled off site at a location where raingardens will be showcased and participants will have an opportunity to help build a raingarden along with local stakeholders. Activities will conclude with an authentic KC BBQ.

Space is limited to 30 participants. If interested, please contact ewri@asce.org for more details.

5:00 – 6:30 pm

CONCURRENT TECHNICAL SESSIONS XIV

7:00 – 10:00 pm

OFFSITE EVENT:**BBQ Fest at Faulkner's Ranch**

At a time when the great cattle drives were making their way to Kansas City and the American Dream was to be found along the Santa Fe Trail, Hyman Benjamin made his way from Russia to Missouri. A homesteader, Benjamin settled his family in 1865 on 40 acres of land purchased for \$3 per acre. By 1890, the farm had grown to 229 acres and eventually became one of KC's most prominent dairy farms, Benjamin Ranch. Today as Faulkner's Ranch, it is an historic landmark for Kansas City, not to mention a darn good place to have a party.



At Faulkner's Ranch, just 25 minutes by motor coach from the KC Marriott Downtown, you can giddy up for an authentic "cowtown" experience. Our festive evening will kick off with a BBQ Cookoff by competing teams of local engineers and scientists; you get to taste test and vote for your favorites. Make sure to save room for what follows, the world-famous Fiorella's Jackstack all-you-can-eat traditional KC BBQ of fork-tender brisket of beef prepared in distinctive hickory-fired brick ovens and served with award-winning hickory pit beans.

Other treats will round out the evening... Take a horse-drawn stagecoach ride around the Ranch. Test your dairy farmer skills on a cow milking machine. Ride 'em, bronco, aboard "Tex" the mechanical bull and try the Roller Roper, which lets you ride in on your own steel horse and lasso a lost mechanical calf. Belly up to the bar to wet your whistle and tap your toes to the tunes of KC's own 11-piece band, filling the air with tunes from the Blues Brothers to James Brown. Before you go home, enjoy yet another yester-year treat with s'mores 'round our bonfire!

Come along, pardner! We promise a kickin' great time out on the Ranch under KC's stars!

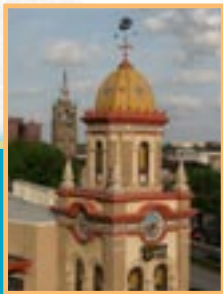
Separate ticket required. Tickets are \$55. Buses will begin loading at 6:00 pm.

THURSDAY, MAY 21, 2009

**7:00 am – 4:00 pm
REGISTRATION****7:00 am – 4:00 pm** Speaker Ready Room**7:00 am – 4:00 pm** Bookstore Open**7:30 – 8:45 am****Watershed & Urban Water Resources Research Councils Breakfast, Awards, and Lecture**

The Watershed & Urban Water Resources Research Councils are pleased to invite you to this Breakfast, which includes the presentation of Watershed Council awards and the 2009 Ven Te Chow Award Lecture. The Chow Award recognizes an individual whose lifetime achievements in the field of hydrologic engineering have been distinguished by exceptional achievements and significant contributions in research, education, or practice. The Chow awardee receives a crystal plaque, certificate, and cash prize.

Your choice of the Watershed & Urban Water Resources Research Councils Breakfast or Water Distribution System Analysis Symposium Breakfast is included for all Full, Student, Spouse/Guest, and Thursday-Daily Registrants. Additional tickets: \$25.



The nation's **FIRST SHOPPING CENTER**, Country Club Plaza, is located in Kansas City. The Plaza is an outdoor museum of romantic Spanish architecture where people live and work every day.

**7:30 – 8:45 am****Water Distribution System Analysis Symposium Breakfast**

Over the last decade, the Water Distribution System Analysis (WDSA) Symposium within the EWRI annual Congress has evolved into the premier forum for papers and presentations on water distribution systems analysis, modeling, and management. This first WDSA Symposium Breakfast will be devoted to a keynote address by a distinguished engineer. All interested are welcome to attend.

Your choice of the Water Distribution System Analysis Symposium Breakfast or Watershed & Urban Water Resources Research Councils Breakfast is included for all Full, Student, Spouse/Guest, and Thursday-Daily Registrants. Additional tickets: \$25.

8:00 am – 5:00 pm**Hospitality Lounge – International & Registered Guests****8:30 am – 3:30 pm****Exhibit Hall Open****8:30 – 9:00 am****Networking Break in Exhibit Hall****8:30 – 9:00 am****Daily Moderator Briefing****8:30 am – 12:30 pm****Technical Poster Session VII****9:00 – 10:30 am****CONCURRENT TECHNICAL SESSIONS XV****10:30 – 11:00 am****Networking Break in Exhibit Hall****10:30 am – 12:30 pm****AAWRE Engineering Ethics Workshop #3**

PRESENTERS: Deb O'Bannon, Ph.D., P.E., F.ASCE, Professor, University of Missouri, Kansas City, MO; Lawrence Lennon, P.E., D.WRE, President, Lennon, Smith, Souleret Engineering, Inc., Coraopolis, PA

Engineers face situations daily that have ethical implications. This workshop, sponsored by the American Academy of Water Resources Engineers (AAWRE), gives a general overview of ethical principles, presents case studies, and offers small group situational discussions. This is an excellent opportunity for engineers to freshen up on engineering ethics and gain perspective on what other engineers consider to be the best solutions to the specific cases presented.

Registration required (see page 16). No fee.

11:00 am – 12:30 pm**CONCURRENT TECHNICAL SESSIONS XVI****12:30 – 1:30 pm****Lunch on Your Own****1:30 – 3:00 pm****CONCURRENT TECHNICAL SESSIONS XVII****1:30 – 5:00 pm****Technical Poster Session VIII****3:00 – 3:30 pm****Networking Break in Exhibit Hall****3:30 – 5:00 pm****CONCURRENT TECHNICAL SESSIONS XVIII****6:00 – 10:00 pm****COMMITTEE MEETINGS**



ADA Compliance

The Kansas City Marriott Downtown is fully accessible to the physically challenged and provides auxiliary aids and services. If you require special assistance at the Congress, please check the appropriate box on the registration form. While ASCE will make every effort to meet the needs of the physically challenged, accommodations cannot be guaranteed without prior notification.

Airport Information

Kansas City International Airport (KCI) is approximately 21 miles from Downtown Kansas City. KCI hosts Air Canada, Air Tran Airways, American Airlines, Continental, Delta, Frontier, Midwest, Northwest, Southwest Airlines, United, and US Airways. Interested in discount flights to Kansas City? Visit www.kayak.com for the best rates. Need additional flight information, transit services, flight times, and mileage to help make your KC visit planning a breeze? Call 816-243-5237 or visit www.flykci.com.

ASCE Bookstore

ASCE will operate its popular bookstore at the Congress. ASCE offers more than 400 titles, many of which will only be available at the Congress.

Attire

The dress code for the Congress is business casual. Meeting room temperatures will vary, so wear layered clothing to ensure your personal comfort. We also recommend attendees wear comfortable shoes.

Committee Meetings

To receive a Meeting Request Form, go to www.asce.org/conferences/ewri2009/program or contact Ann Rountree, Board & Meeting Specialist, at arountree@asce.org.

Congress Location

Kansas City Marriott Downtown
200 West 12th Street
Kansas City, MO 64105
816-421-6800

www.marriott.com/hotels/travel/mcidt-kansas-city-marriott-downtown/

Daily Registration

Daily registration does not include Proceedings.

EWRI Membership Included

Never been a member of EWRI? When you register for the Congress as a Full Non-Member, you will be enrolled in EWRI for 2009 upon conclusion of the Congress. For more information on member benefits, go to www.ewrinstitute.org/membership/.

Exhibit and Sponsor Opportunities

Put your company's innovative products, services, and computer applications in the spotlight in our bustling Exhibit Hall! For details, please contact: Jeff Sandersen at jsandersen@asce.org or 703-295-6107. Each exhibit booth rental includes two Full Exhibitor registrations, which do receive Congress Proceedings.

Let your company shape the industry! To become a sponsoring partner of the 2009 World Environmental & Water Resources Congress, contact Don Baker at 913-302-1030 or wrs@kc.surewest.net.

Ground Transportation

Shuttle Service

The shuttle service access point is near the ticket counter adjacent to the baggage claim area of the airport. Cost: \$17 one way and \$34 round trip. (\$2 discount to AAA members. Gratuity is not included.) To reserve a shuttle, call 800-258-0905 or visit www.supershuttle.com.

Taxi Service

Phones for taxi service are located both inside and outside the terminal at each bag claim area. Give the dispatcher your exact location. Fares may be pro-rated (shared) when the originating passenger requests it and all other passengers agree. Rates are \$2.50 plus \$2.10 per mile. Rates may vary due to traffic delays and waiting time.

- Checker Cab: 816-444-4444
- Yellow Cab: 816-471-5000
- Budget Taxi: 913-271-3030

Local Transportation

The Metro operates to and from KCI Monday through Friday. Metro buses accept cash and Monthly Bus Passes. Fare: \$1.25. Fareboxes accept exact change only; if you do not have exact change, the driver can issue a change card that holds a credit. Inform the driver before inserting money into the farebox if you want a change card. For routes, schedules, and additional information on the Metro, check www.kcata.org or 816-221-0660.

Car Rentals

ASCE has negotiated discounted car rental rates for Congress participants that are valid one week before through one week after the Congress. Save \$5 a day, up to \$25 off your Hertz rental, and receive your standard discount as well as all of the Hertz benefits of being a member. Hertz Rental Car in Kansas City International Airport: 816-243-5765.

Spouse/Guest Registration

Guests may attend all Congress functions, but must purchase separate tickets for those designated events not included in Spouse/Guest Registration. Events that are included in Spouse/Guest Registration are:

SUNDAY, MAY 17, 2009

- 8:00 am - 5:00 pm: Hospitality Lounge – International & Registered Guests
- 6:00 - 8:00 pm: Congress Ice Breaker Reception – Section Welcome – in Exhibit Hall

MONDAY, MAY 18, 2009

- 7:30 - 10:30 am: Spouse/Guest Orientation Breakfast
- 8:00 am - 5:00 pm: Hospitality Lounge – International & Registered Guests
- 6:30 - 8:00 pm: AAWRE Diplomate & Visiting International Fellows Reception

TUESDAY, MAY 19, 2009

- 7:30 - 8:45 am: Selection of either the Environmental Council or Hydraulics & Waterways and Groundwater Councils Breakfast
- 8:00 am - 5:00 pm: Hospitality Lounge – International & Registered Guests

WEDNESDAY, MAY 20, 2009

- 7:30 - 8:45 am: Selection of either the Planning and Management Council or Irrigation and Drainage Council Breakfast
- 8:00 am - 5:00 pm: Hospitality Lounge – International & Registered Guests

THURSDAY, MAY 21, 2009

- 7:30 - 8:45 am: Selection of either the Watershed & Urban Water Resources Research Councils or Water Distribution System Analysis Symposium Breakfast
- 8:00 am - 5:00 pm: Hospitality Lounge – International & Registered Guests

HOTEL INFORMATION

Official Headquarters Hotel

Kansas City Marriott Downtown
200 West 12th Street
Kansas City, MO 64105



Located in the heart of KC's business, government, and theater districts, the stunning Kansas City Marriott Downtown provides a delightful stay for business and leisure travel. Each room is a Room That Works® – ergonomically designed for maximum efficiency – a welcome sight for business travelers! After a productive day at the Congress, relax with a fine dinner at Lilly's Restaurant or enjoy the lively atmosphere at the 12th Street Lounge.

Room Rates: Single/Double: \$132
Government: \$103
plus 15.23% tax per room per night

Deposits: All reservations require a credit card guarantee of one night's deposit. Deposits will be refunded for rooms canceled more than 24 hours prior to expected arrival date.

Reservation via Phone: Call the Kansas City Marriott Downtown directly at 816-421-6800 to make your hotel reservation. Please be sure to mention that you are a 2009 EWRI Congress participant to receive the group rates.

Reservation via the Internet: Make your reservations online at www.marriott.com/hotels/travel/mcidt-kansas-city-marriott-downtown/

Reservation Cutoff: The cutoff date for the Kansas City Marriott Downtown is Friday, April 24, 2009. After April 24, the hotel is not obligated to continue to offer EWRI's Congress room rate. Reservations after April 24 will be accepted based on room availability.

No Smoking Policy

ASCE supports a "No Smoking" policy. Smoking is prohibited in the Kansas City Marriott Downtown and at all indoor venues hosting EWRI events.

Proceedings

One copy of the Proceedings is included with each Full and Full Student Registration. All those who should receive the Proceedings with their registration or who have purchased a copy via their registration form will receive a ticket with their onsite materials. You MUST pick up your Proceedings onsite by submitting your ticket at the Proceedings Desk in the Registration area.

If you fail to pick up your Proceedings onsite, then post-Congress you must mail in your Proceedings ticket with a written request within 30 days of the Congress, or no later than June 19, 2009, to the ASCE Publications Department: www.pubs.asce.org/.

Basic Student Registrants and Daily Registrants may purchase the Proceedings on the registration form onsite or post-Congress.

Professional Development Hours (PDHs)

Earn up to 24 Professional Development Hours (PDHs) – nationally recognized units of record – by attending technical sessions.

Please note that there are differences from state to state in continuing education requirements for professional engineering licensure. Each state registration board has the final authority to approve courses, credits, professional development hours for courses, and other methods of earning credit in that state. ASCE strongly recommends that individuals check with their state registration boards regularly for specific continuing education requirements in their jurisdictions that affect professional engineering licensure and the ability to renew licensure.

2009 CONGRESS REGISTRATION POLICIES AND PROCEDURES

Program Changes

Programs and sessions are subject to change and ASCE reserves the right to substitute a program, session, and/or speaker of equal caliber to fulfill educational requirements.

Student Activities

Wednesday is a day focused on activities designed for students. Students are encouraged to register for and attend Congress events at greatly reduced rates. Take advantage of the technical enrichment and a special introduction to the environmental and water resources engineering field. Review pages 11-12 for more information on the specific student events.

Student Registration

Includes technical sessions, Exhibit Hall, networking breaks, student activities, Sunday Ice Breaker Reception, Monday Keynote Breakfast, Wednesday Luncheon, AAWRE Reception, and three out of six Breakfasts.

Weather

Kansas City's May weather temperatures will range from 76 degrees in the afternoon to about 57 degrees in the evening. The region experiences about 4.5 in. of rain each May.

Advance Registration Discount: To qualify for the pre-Congress registration discount, register online, fax, or postmark payment by the Advance deadline.

Badges: To receive a badge, you must register. Your name badge is your admission to the technical sessions and the Exhibit Hall. Pre-registered participants are to pick up their badges upon checking in at the Onsite Registration Counter at the Kansas City Marriott Downtown.

Badge Sharing Not Allowed: Please take note that registration is per individual and is not exchangeable between colleagues.

Cancellation: Cancellations must be received in writing to EWRI Registration by April 17, 2009, to receive a refund of registration fees. A \$100 processing fee will be deducted from all refunds. Additional event tickets will be fully refunded if cancellation is received in writing by April 17, 2009. Fax or e-mail cancellation requests to Attn: EWRI Registration at 202-667-9331 or smance@manceandassociates.com. No refunds will be made for cancellations received after April 17, 2009.

Confirmation of Registration: Confirmations are e-mailed to all who provide valid e-mail addresses. If you do not receive confirmation within three weeks, please contact EWRI Registration at 202-667-9332 and speak with a Registration Customer Service Representative.

Group Discount: Four or more registrants from the same organization at the same address may receive a \$50 discount per registration when registering at the same time with one payment (by check or credit card). To be eligible for this discount, registration forms and payment must be received by the Advance registration deadline. After the Advance deadline, the group discount is no longer available. The group discount is not available via online registration.

Payment Is Required at Time of Registration:

Registrations will not be processed without the full payment or a copy of your official purchase order (P.O.), if applicable.

To pay by credit card: Online and fax registration is available for those who wish to pay by credit card. ASCE accepts AMEX, VISA, MC, DISC, and DINERS.

Online: www.asce.org/conferences/ewri2009

By fax: 202-667-9331

To pay by purchase order (P.O.): Mail your official P.O. form with your hard-copy registration form to: **ASCE (EWRI Congress 2009), PO Box 79668, Baltimore, MD 21279-0668 USA.**

To pay by check: Mail your check – payable to **ASCE (EWRI Congress 2009)** – with your hard-copy registration form to: **ASCE (EWRI Congress 2009), PO Box 79668, Baltimore, MD 21279-0668 USA.** Check must be issued in US dollars, drawn on a US bank. Include attendee's name in the memo area of the check.

For pre-Congress registration discount: Postmark or fax by the Advance registration deadline: April 10, 2009.

Registrations cannot be processed by phone.

For registration questions: Call 202-667-9332 or contact smance@manceandassociates.com.

Release: By submitting the registration form, I hereby release any photographs that may be incidentally taken of me by ASCE during these events to be used for any purpose.

Senior Discount: If you are 70 years or more, you can register at a deeply discounted rate. Proof of age is required. See the registration form for details.

Speaker/Moderator Registration: All speakers and moderators are required to register for the Congress by the Advance registration deadline and to submit payment for respective registration fees.

Student Registration: If you are a full-time student, you can register at a deeply discounted rate. Proof of full-time student status and valid ID are required.

Substitutions: Substitutions are allowed. Re-submit the original registration form with the original registrant's name crossed out. Write "Substitution" at the top of the form. Complete ALL the information for the new registrant. Substitutions must be made by April 17, 2009. After April 17, 2009, substitutions are to be made at the Onsite Registration Counter.

Waiver: By submitting the registration form, I agree and acknowledge that I am undertaking participation in ASCE events and activities at my own free and intentional act, and I am fully aware that possible physical injury might occur to me as a result of my participation. I give this acknowledgement freely and knowingly that I am, as a result, able to participate in ASCE events, and I do hereby assume responsibility for my own well-being. I also agree not to allow any other individual to participate in my place, unless substitution is made per the above substitution clause.

Included in Your Registration Fee	
World Environmental & Water Resources Congress 2009	
 <p>Great Rivers Protecting quality of life and biodiversity... supporting development, growth, and sustainability</p>	Sessions & Exhibit Hall Sun Ice Breaker Reception Mon Keynote Breakfast & Lifetime Achievement Awards Mon Spouse/Guest Breakfast Mon AAWRE Reception Diplomat & Visiting International Fellows Reception Tues Environmental Council OR Hydraulics & Waterways and Groundwater Councils Breakfast & Awards Wed Planning and Management Council OR Irrigation and Drainage Council Breakfast & Awards Wed Student Luncheon Wed BBQ Fest at Faulkner's Ranch Thu Watershed & Urban Water Resources Councils Breakfast & Awards OR Water Distribution System Analysis Symposium Breakfast Proceedings
	FULL REGISTRATION:
	EWRI/ASCE Member
	Coop Org Member
	Speaker
	Moderator
	Non-Member
	Retired/Senior (70+)*
	Student Full*
	Student Basic*
	DAILY REGISTRATION:
	Monday
	Tuesday
	Wednesday
Thursday	
SPOUSE/GUEST REGISTRATION	

*Proof of age for Seniors or proof of full-time Student status required

World Environmental & Water Resources Congress 2009

REGISTRATION FORM May 17-21, 2009 Kansas City Marriott Downtown Kansas City, Missouri



ASCE
American Society of Civil Engineers

Please complete the registration form including signature and payment information. Use one registration form per person. Registrations will not be processed without full payment and registrant's full name. PLEASE PRINT OR TYPE ALL INFORMATION.

CONTACT INFORMATION (* Indicates required information)

* First Name _____ MI _____ * Last Name _____
 Credentials _____ Badge Nickname _____
 Title _____ * Company/Organization/University _____
 * Street Address/PO Box _____
 * City _____ * State _____ * Postal Code _____ * Country _____
 * Work Phone _____ * Home Phone _____ * Cell _____
 Fax _____ * Email _____
 In Case of Emergency, Congress week contact phone number (IMPORTANT) _____
 ASCE/EWRI Member Number _____ If Cooperating Org Member, Name Org _____

FOR COMPLETE CONGRESS INFORMATION AND TO REGISTER, visit www.asce.org/conferences/ewri2009

FOR CREDIT CARD PAYMENT Register Online: www.asce.org/conferences/ewri2009

Or by Fax: 202-667-9331

FOR CHECK OR PURCHASE ORDER (P.O.) PAYMENT Mail to:
ASCE (EWRI Congress 2009)
 PO Box 79668
 Baltimore, MD 21279-0668 USA

Registrations cannot be processed by phone.

Check here if you require vegetarian or other special meal(s).
 Check here if you require special assistance during Congress.
 A Congress Management representative will contact you to discuss your needs.

REGISTER BY APRIL 10, 2009 AND SAVE!

Full Registration Registration Categories

	Advance By 4/10/09	Onsite After 4/10/09
<i>Includes Sessions, Exhibit Hall, Ice Breaker, Keynote Breakfast, AAWRE Reception, Choice of Tuesday Breakfasts, Choice of Wednesday Breakfasts, Choice of Thursday Breakfasts, Proceedings</i>		
EWRI/ASCE Member	<input type="checkbox"/> \$695	<input type="checkbox"/> \$795
Cooperating Organization Member	<input type="checkbox"/> \$695	<input type="checkbox"/> \$795
Speaker	<input type="checkbox"/> \$495	<input type="checkbox"/> \$595
Moderator	<input type="checkbox"/> \$495	<input type="checkbox"/> \$595
Non-Member **	<input type="checkbox"/> \$795	<input type="checkbox"/> \$895
Retired/Senior (70+ years)	<input type="checkbox"/> \$250	<input type="checkbox"/> \$305
<i>Proof of DOB to accompany registration form. Must be 70 years of age or older.</i>		
Full-Time Student Full Package <i>Includes Student Luncheon</i>	<input type="checkbox"/> \$250	<input type="checkbox"/> \$305
Full-Time Student Basic Package <i>Includes Student Luncheon</i>	<input type="checkbox"/> \$150	<input type="checkbox"/> \$205
<i>Copy of Student ID to accompany registration form. Basic Package does not include Proceedings.</i>		

Daily Registration Monday Tuesday Wednesday Thursday

Includes for day of registration only: Sessions, Exhibit Hall, Mon: Keynote Breakfast, Tues: Choice of Breakfasts, Wed: Choice of Breakfasts, Thurs: Choice of Breakfasts

EWRI/ASCE Member	<input type="checkbox"/> \$345	<input type="checkbox"/> \$395
Cooperating Organization Member	<input type="checkbox"/> \$345	<input type="checkbox"/> \$395
Speaker	<input type="checkbox"/> \$345	<input type="checkbox"/> \$395
Moderator	<input type="checkbox"/> \$345	<input type="checkbox"/> \$395
Non-Member	<input type="checkbox"/> \$375	<input type="checkbox"/> \$425

Spouse/Guest Registration Guest Name: _____

Includes Ice Breaker, Spouse/Guest Breakfast, AAWRE Reception, Choice of Tuesday Breakfasts, Choice of Wednesday Breakfasts, Choice of Thursday Breakfasts

Spouse/Guest	<input type="checkbox"/> \$125	<input type="checkbox"/> \$150
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** Full Non-Member Registration includes FREE 2009 EWRI MEMBERSHIP.

YES, I want to take advantage of my EWRI benefits, active upon the conclusion of the Congress for New Members ONLY.

Technical/Social Tours

	REGISTRANT (SELF)	GUEST #1	GUEST #2
Technical Tours: Saturday, May 16			
Lake Lenexa Dam & Spillway	<input type="checkbox"/> \$ 25	<input type="checkbox"/> \$ 25	<input type="checkbox"/> \$ 25
Brush Creek Corridor	<input type="checkbox"/> \$ 25	<input type="checkbox"/> \$ 25	<input type="checkbox"/> \$ 25
L-385 Levee on the Missouri River	<input type="checkbox"/> \$ 25	<input type="checkbox"/> \$ 25	<input type="checkbox"/> \$ 25
Social Tour: Sunday, May 17			
Explore Kansas City	<input type="checkbox"/> \$ 20	<input type="checkbox"/> \$ 20	<input type="checkbox"/> \$ 20

For tours: Guest Name # 1 _____ Guest Age _____
 Guest Name # 2 _____ Guest Age _____

Special Events/Additional Tickets

	Advance/Onsite	QTY	AMOUNT
Sunday, May 17			
Ice Breaker Reception	<input type="checkbox"/> \$ 25	_____	_____
Monday, May 18			
Keynote Breakfast & Lifetime Achievement Awards	<input type="checkbox"/> \$ 25	_____	_____
Spouse/Guest Orientation Breakfast	<input type="checkbox"/> \$ 35	_____	_____
AAWRE Reception	<input type="checkbox"/> \$ 25	_____	_____
Tuesday, May 19			
Environmental Council Breakfast & Awards	<input type="checkbox"/> \$ 25	_____	_____
Hydraulics & Waterways and Groundwater Councils Breakfast & Awards	<input type="checkbox"/> \$ 25	_____	_____
Wednesday, May 20			
Planning and Management Council Breakfast & Awards	<input type="checkbox"/> \$ 25	_____	_____
Irrigation and Drainage Council Breakfast & Awards	<input type="checkbox"/> \$ 25	_____	_____
Offsite Event: BBQ Fest at Faulkner's Ranch	<input type="checkbox"/> \$ 55	_____	_____
Thursday, May 21			
Watershed & Urban Water Resources Research Councils Breakfast & Awards	<input type="checkbox"/> \$ 25	_____	_____
Water Distribution System Analysis Symposium Breakfast	<input type="checkbox"/> \$ 25	_____	_____
Proceedings (Full and Full Student Registrants receive 1 copy.)	<input type="checkbox"/> \$100	_____	_____

Short Courses/Workshops (Does not include Congress Registration)

	Member	Non-Member	Advance	Onsite
Short Courses: Sunday, May 17				
#1: Curve Number Rainfall-Runoff: Professional Applications	<input type="checkbox"/> \$245	<input type="checkbox"/> \$295	<input type="checkbox"/> \$275	<input type="checkbox"/> \$325
#2: Principles of Streambank Analysis and Stabilization	<input type="checkbox"/> \$245	<input type="checkbox"/> \$295	<input type="checkbox"/> \$275	<input type="checkbox"/> \$325
#3: Treatment of Uncertainty in Water Resource Modeling and Analysis	<input type="checkbox"/> \$225	<input type="checkbox"/> \$275	<input type="checkbox"/> \$275	<input type="checkbox"/> \$325
#4: The Arc Hydro Groundwater Data Model	No Fee	<input type="checkbox"/> Yes, I will attend.		
Workshop: Monday, May 18				
#1: AAWRE Engineering Ethics Workshop	No Fee	<input type="checkbox"/> Yes, I will attend.		
Workshop: Tuesday, May 19				
#2: AAWRE Engineering Ethics Workshop	No Fee	<input type="checkbox"/> Yes, I will attend.		
Workshop: Thursday, May 21				
#3: AAWRE Engineering Ethics Workshop	No Fee	<input type="checkbox"/> Yes, I will attend.		

For registration questions,

please call 202-667-9332 or contact smance@manceandassociates.com.

PAYMENT: Full payment must accompany this registration form. NO REFUNDS granted for cancellations after April 17, 2009.

Full Registration	\$ _____
Daily Registration	\$ _____
Spouse/Guest Registration	\$ _____
Technical/Social Tours	\$ _____
Additional Tickets	\$ _____
Short Courses/Workshops	\$ _____
GRAND TOTAL (pay this amount)	\$ _____

PURCHASE ORDER # _____ (Provide copy of PO form with your registration form by mail.)

CHECK Payable to **ASCE (EWRI Congress 2009)**. Checks must be issued in US dollars, drawn on US banks. To pay by check, mail check and completed form, post-marked by deadlines shown above, to:

CREDIT CARD
 AMEX VISA MC DISC DINERS
 Card Number _____
 Expiration Date (MM/YY) _____
 Cardholder Name _____
 Signature _____
TOTAL TO BE CHARGED \$ _____

ASCE (EWRI Congress 2009)
 PO Box 79668
 Baltimore, MD 21279-0668 USA

MUCH MORE THAN YOU'D EXPECT... with water resources in harmony with the built environment!

Kansas City is a timeless city, known for its beautiful array of fountains. Established in 1850, its history runs like an old Western movie. It is a story of cowboys and Indians, of westward expansion, and of the rugged men and women who traveled to and through the area in search of a new beginning. Yet today's Kansas City is equally as colorful. Whether you're a theater lover or a sports enthusiast, a history buff or a river buff, you'll find plenty to keep you busy in this vibrant Midwest metropolis.

For starters, take a look at the Lewis and Clark Memorial, take a trip to the National World War I Museum, visit the Harry S. Truman Library and Museum, Nelson-Atkins Museum of Art, Martha Lafite Thompson Nature Sanctuary, Hallmark Visitors' Center, American Jazz Museum, or the Kansas City Power & Light District (with dining and entertainment hot spots where you can enjoy BBQ at its best!). Join in celebrating the 100th anniversary of the Kansas City Zoo by watching the antics of its more than 1,000 residents in their naturalistic settings. Or head over to the Sprint Center and immerse yourself in the National Collegiate Basketball Hall of Fame in the state-of-the-art College Basketball Experience!

All this takes stage on the banks of the mighty Missouri River. What better setting in which to focus on and discuss THE GREAT RIVERS OF THE WORLD and the delicate balance struck between bio-diversity and development for a sustainable future!

Join us at the 2009 EWRI Congress for the year's most important mid-America happening for environmental/water engineering professionals! Our Congress venue and official Congress headquarters hotel – the Kansas City Marriott Downtown – puts us at the confluence of the action in KC!

For more information on Kansas City and the surrounding area, please visit our Congress website at www.asce.org/conferences/ewri2009 or contact the Kansas City Convention & Visitors Association directly: 816-221-5242, 800-767-7700 (toll-free), or www.visitkc.com.

“This vibrant Midwest metropolis has morphed into a cultural center.”

– National Geographic Traveler



Plan to join some 1,000 colleagues and professionals who work in the environmental/water resources engineering nexus...

WORLD ENVIRONMENTAL & WATER RESOURCES CONGRESS 2009



GREAT RIVERS

*protecting the quality of life and
bio-diversity, while supporting
development and growth critically
important for a sustainable future*

**MAY 17-21, 2009
KANSAS CITY, MISSOURI
KANSAS CITY MARRIOTT DOWNTOWN**

Sponsored by the American Society of Civil Engineers'
Environmental & Water Resources Institute



CONGRESS OPPORTUNITIES AVAILABLE!

Become a Sponsor!

Take a leadership role in the industry!

Platinum, Gold, Silver, and Bronze Level Sponsorships can be yours. Give your company special prominence through this substantive Congress, with exposure to thousands in the environmental and water resources industry. Sponsor the Ice Breaker, Opening Breakfast, Awards Breakfasts, Networking Breaks, Cyber Café, Tracks, and more. Get a hotlink between the Congress website and your homepage, recognition in Congress publications and signage, and much more.

For details on sponsoring the 2009 EWRI Congress, contact Donald W. Baker, P.E., M.ASCE at 913-302-1030 or wrs@kc.surewest.net.

Become an Exhibitor!

Connect with environmental/water resources decision makers!

If your organization provides goods, services, or software to support environmental and water-related design, construction, research, and operations, this important Congress is for you. It offers an excellent chance for you to develop new customers, reaffirm your long-standing customer relationships, and present your most innovative products, equipment, materials, services, and computer applications.

For more information about exhibiting, contact Jeff Sandersen at 703-295-6107 or jsandersen@asce.org.



EXHIBITS MAY 17-21, 2009

You will find these notable exhibitors already confirmed for our Exhibit Hall

Advanced Geosciences Inc. • **American Academy of Water Resources Engineers** • **EnviroCert International, Inc.**
Hydro International • **Modular Wetlands** • **NCEES** • **Teledyne RD Instruments, Inc.** • **U.S. Geological Survey**

SUNDAY, MAY 17

Exhibitor Installation • 8:00 am – 5:00 pm
Grand Opening of the Exhibit Hall • 6:00 – 8:00 pm
Congress Ice Breaker – Section Welcome • 6:00 – 8:00 pm

MONDAY, MAY 18

Exhibit Hall Open • 8:30 am – 4:00 pm
Networking Break in Exhibit Hall • 8:30 – 9:00 am
Networking Break in Exhibit Hall • 10:30 – 11:00 am
Networking Break in Exhibit Hall • 3:30 – 4:00 pm

TUESDAY, MAY 19

Exhibit Hall Open • 8:30 am – 4:00 pm
Networking Break in Exhibit Hall • 8:30 – 9:00 am
Networking Break in Exhibit Hall • 10:30 – 11:00 am
Networking Break in Exhibit Hall • 3:00 – 3:30 pm

WEDNESDAY, MAY 20

Exhibit Hall Open • 8:30 am – 4:00 pm
Networking Break in Exhibit Hall • 8:30 – 9:00 am
Networking Break in Exhibit Hall • 10:30 – 11:00 am
Networking Break in Exhibit Hall • 3:00 – 3:30 pm

THURSDAY, MAY 21

Exhibit Hall Open • 8:30 am – 3:30 pm
Networking Break in Exhibit Hall • 8:30 – 9:00 am
Networking Break in Exhibit Hall • 10:30 – 11:00 am
Networking Break in Exhibit Hall • 3:00 – 3:30 pm
Exhibit Hall Dismantling • 3:30 – 8:00 pm



Subject to change

For full details and on-line registration, visit www.asce.org/conferences/ewri2009