

# **SOUTH CENTRAL MEMBRANE ASSOCIATION**



## **2011 Annual Conference & Membership Meeting**

HOLIDAY INN RIVERWALK, SAN ANTONIO, TEXAS  
AUGUST 17-19, 2011

***Texas Two-Step: Taking the Lead  
in Membrane Technology &  
Water Reuse***

## SCMA 2011 Annual Conference - Texas Two-Step

All events will be held on the seventh floor of the Holiday Inn Riverwalk, unless otherwise noted

Wednesday, August 17

Time	Event
8:00 a.m. - Noon	Exhibitor Set-Up
8:00 - 5:00 p.m.	Registration Open
1:00 p.m.	Conference Kick-Off: Welcome from David Derr, SCMA President
1:05 - 1:45 p.m.	<b>RO Membrane Scaling: Chemistry, Causes and Prevention</b> David Russell, Professional Water Technologies
1:45 - 2:15 p.m.	<b>Membrane Cleaning &amp; Troubleshooting: Why are Some Cleanings Unsuccessful?</b> Tim Kirk, Avista Technologies
2:15 - 2:45 p.m.	Afternoon Break with Exhibitors
2:45 - 3:00 p.m.	Platinum Sponsor Presentation CSM/Woongjin Chemical America, Inc.
3:00 - 3:30 p.m.	<b>Overview of RO Technology</b> Steven Coker, Dow Water & Process Solutions
3:30 - 4:00 p.m.	<b>RO Membrane System Basics: A Discussion Regarding Membrane Life Span</b> Roy Daly, CSM
4:00 - 4:30 p.m.	<b>Ceramic and Polymeric Membrane Performance with MIEX, Direct Coagulation, and Settling Pretreatment</b> Mark Graves, HDR Engineering, Inc.
4:30 - 5:00 p.m.	<b>Brackish Groundwater Desalination - Role of Membrane Pilot Testing on Program Planning &amp; Development</b> Duane Bryant & Meagan Brown, San Antonio Water System
5:00 - 5:30 p.m.	SCMA Committee Meetings
6:00 p.m.	Networking Reception
7:30 p.m.	Day I Concludes

## SCMA 2011 Annual Conference - Texas Two-Step

Thursday, August 18

Time	Event
8:00 - 9:00 a.m.	Breakfast
9:00 - 9:30 a.m.	<b>Keynote Address: Challenges and Opportunities for Advancing Membrane Technology in Texas</b> Jorge Arroyo, Texas Water Development Board
9:30 - 10:15 a.m.	<b>Presentation</b> Dr. Desmond Lawler, University of Texas
10:15 - 10:45 a.m.	Morning Break with Exhibitors
10:45 - 11:15 a.m.	<b>Ingenuity with Brackish Water in North Texas: The First Municipal Water Supply Use of Lake Whitney</b> Scott Hekman, Freese & Nichols
11:15 - 11:45 a.m.	<b>Ceramic Membranes for Drinking Water in Texas</b> Emily Gilbert, Kruger, Inc.
11:45 - 12:15 p.m.	Gold Sponsor Presentations Hydro Source/Turbidex and Afton Pumps
12:15 - 1:15 p.m.	Lunch
1:15 p.m.	Attendees Break into Track A and Track B



## SCMA 2011 Annual Conference - Texas Two-Step

*Following lunch, Track A (Operators) will travel to the United Water Facility, while Track B (Managers/Engineers) will proceed back to the general session room for presentations.*

Thursday, August 18

TRACK A		TRACK B	
1:15 - 1:45 p.m.	Travel to United Water Facility	1:15 - 1:45 p.m.	<b>Engineering Case Study of Horizon Regional MUD RO Project</b> John M. Jansing, Jr., P.E., Grey, Jansing & Associates
1:45 - 2:45 p.m.	Training at Facility	1:45 - 2:30 p.m.	<b>Advanced Water Treatment and Reuse of Municipal WWTP Effluent in Queensland, Australia</b> Charles Dyke, WorleyParsons
2:45 - 3:15 p.m.	Return Travel to Holiday Inn	2:30 - 2:45 p.m.	<i>Afternoon Break with Exhibitors</i>
3:15 - 3:30 p.m.	<i>Afternoon Break with Exhibitors</i>	2:45 - 3:15 p.m.	<b>Water Supply Economic Evaluations and Financing</b> Kaumudi Atapattu, Carollo Engineers
3:30 - 4:00 p.m.	<b>Low Pressure Membranes</b> Todd Broad, Pentair X-Flow	3:15 - 3:45 p.m.	Travel to United Water Facility
4:00 - 5:00 p.m.	<b>Operators Roundtable Discussion</b> Stuart Mitchell	3:45 - 4:15 p.m.	Tour Facility
		4:15 - 5:00 p.m.	Return Travel from Facility to Hotel

5:00 p.m. Day 2 Concludes

## SCMA 2011 Annual Conference - Texas Two-Step

Friday, August 19

Time	Event
8:00 - 9:30 a.m.	Breakfast & Membership Meeting
9:30 - 10:00 a.m.	<b><i>Effects of Extended Operation and Air Leaks on RO Membranes During SAWS Brackish Groundwater Desalination Pilot Project</i></b> Justin Sutherland, Ph.D., P.E., Carollo Engineers
10:00 - 10:45 a.m.	<b>Water &amp; Wastewater Regulation Updates</b> David Williams & Deborah Helstrom, Texas Commission on Environmental Quality
10:45 - 11:00 a.m.	<i>Morning Break with Exhibitors</i>
11:00 - 11:30 a.m.	<b><i>Biofouling Control - RO Piloting Experience at the BRA SWATS Facility</i></b> Susan L. Crawford, P.E., BCEE, CDM
11:30 a.m. - Noon	<b><i>Funded Brackish Groundwater Desalination Demonstration Projects</i></b> Saqib Shirazi, Texas Water Development Board
Noon	Day 3 Concludes
Noon - 2 p.m.	Exhibitor Tear-Down



Thank you for attending the South Central Membrane Association's 2011 Annual Conference & Membership Meeting. Please don't forget to complete and return your event surveys and CEU request forms to the SCMA staff.

[www.scmembrane.org](http://www.scmembrane.org)

## Presenters

### **Kaumudi Atapattu, Carollo Engineers**

Ms. Atapattu focuses primarily on water and wastewater master planning and financial analysis. Her experiences include development of financial models to identify and allocate costs and economic benefit-cost analysis.

### **Jorge Arroyo, Texas Water Development Board**

Mr. Arroyo is a Civil Engineer with the Texas Water Development Board overseeing innovative water technologies programs. For the past 20 years he has worked for the State of Texas in various capacities ranging from utility rate design, planning and designing water and wastewater treatment facilities for communities located in the Texas-Mexico border; and implementing regional and state water planning. He currently leads the TWDB Innovative Water Technologies Programs focusing on desalination, water reuse, rainwater harvesting, and, more recently, aquifer storage and recovery activities.

### **Meagan Brown, San Antonio Water System**

Meagan Brown graduated from The University of Oklahoma in 2002 with a degree in Environmental Engineering. Meagan has experience in groundwater chemistry and treatment and water system and treatment design. She began working for San Antonio Water System in 2006 and is currently working on the Brackish Groundwater Desalination Program pilot program.

### **Duane Bryant, San Antonio Water System**

Duane Bryant graduated from The University of Texas in 1990 with a degree in Civil Engineering, after which he immediately began working for San Antonio Water System. In 2006, he began working on the Brackish Groundwater Desalination Program. Duane is currently overseeing the reverse osmosis membrane pilot study portion of the program.

### **Steven Coker, Dow Water & Process Solutions**

Mr. Coker has a BS in Chemical Engineering from the University of Texas and is a member of various water treatment associations, including AMTA, SEDA, SCMA, IDA, and CaribDA. Mr. Coker has been with Dow Chemical for over 30 years and has worked in various Research and Development and Technical Service functions. He is the author of several technical papers on the application of ion exchange and membrane technology for water treatment. He is currently responsible for the design, commissioning and technical support of reverse osmosis membrane plants in North America.

### **Susan L. Crawford, P.E., BCEE, CDM**

Ms. Crawford is a Senior Vice President with CDM with 22 years experience. She has served as project director or manager for membrane projects across the southern U.S.

### **Roy Daly, CSM**

Roy Daly has a Bachelor of Science in Chemical Engineering from The University of California at San Diego. He currently is a Sales Engineer for CSM and is based in Houston, TX. Roy has worked in a variety of roles within the water treatment industry specializing in membrane filtration, including sales, marketing, system engineering, plant start ups and operations, as well as having an extensive background in product development, application development and field testing.

### **Charles Dyke, WorleyParsons**

Chuck is a Chemical Engineer and a specialist in industrial water and wastewater treatment. While working for Texaco in the 1980s he helped form a group that was tasked with using membrane technologies to treat high

## Presenters

strength refinery wastewaters and oil field produced waters. He also developed an RO membrane-based zero liquid discharge treatment process for Texaco's refinery wastewater. Since then he has worked on numerous industrial and municipal water and wastewater treatment projects involving membrane technologies. He is currently working on the design of what will be the world's largest produced water RO treatment plant for oil field steam flooding, located in Kuwait.

### **Emily Gilbert, Kruger, Inc.**

Emily Gilbert is a Product Manager for Kruger Membrane products, based in Cary, NC. She has been with Veolia for seven years, working in both their Kruger US and Birmingham UK offices on the Hydrotech Discfiler product, and the Kruger Membrane products. She has been involved in all the Kruger ceramic membrane pilot studies since joining the Kruger MF/UF membrane team in 2008. She is a graduate in Chemical Engineering from Texas A&M University.

### **Mark Graves, HDR Engineering, Inc.**

Mr. Graves is with HDR Engineering in Austin, Texas and is a project manager with 14 years of experience that includes the management of several membrane pilot studies and the design of numerous water treatment facilities. He is a graduate of Auburn University and received a Master's Degree in Civil Engineering from the University of Texas at Austin.

### **Scott Hekman, Freese & Nichols**

Scott Hekman is an Environmental Engineer, EIT at Freese and Nichols, Inc. in Austin, Texas. While receiving his master's degree from the University of Texas in Austin's Environmental and Water Resources Engineering program, Scott researched concentrate improvement methods in reverse osmosis (RO) desalination under the advisement of Dr. Desmond Lawler. Scott has presented at several regional and national conference and is currently designing the first municipal water use project on Lake Whitney in central Texas, which will be a direct ultrafiltration to RO total dissolved solids scalping plant.

### **Deborah Helstrom, Texas Commission on Environmental Quality**

Deborah Helstrom is a registered Professional Engineer in the state of Texas. She has a B.S. and M.S. in Environmental Engineering. She has over thirty years of experience in design, construction and regulation of drinking water, storm water, industrial and municipal wastewater and hazardous wastes for consulting companies and government agencies. Her work for the agency has included water quality and water supply. Currently she performs drinking water supply, treatment and distribution construction plan review.

### **John M. Jansing, Jr., P.E., Gray-Jansing & Associates**

John M. Jansing, Jr., P.E. received a Bachelor of Science in Civil Engineering from the University of Texas at Austin. Mr. Jansing has served as a Principal of the firm Gray-Jansing & Associates, Inc. since its creation in 1989. In his position with the firm, he currently oversees the West Texas operations of the firm and its water and wastewater treatment projects. Mr. Jansing has been the engineer of record for the Horizon Regional MUD since 1995 and was instrumental in the conceptual design and financial planning for the RO water treatment plan that currently serves the municipality.

### **Tim Kirk, Avista Technologies**

Tim Kirk has over fifteen years of experience on operations, maintenance, and optimization of membrane water treatment systems. Mr. Kirk received his Bachelor's Degree in Mechanical Engineering from Texas

## Presenters

Tech University, and also has a Master's Degree in Civil/ Environmental Engineering from New Mexico State University. In addition, he is a registered Professional Engineer.

### **Dr. Desmond Lawler, University of Texas**

Dr. Desmond Lawler earned his Ph.D. in environmental engineering from the University of North Carolina at Chapel Hill in 1980. He joined the faculty of The University of Texas at Austin in that same year. His research includes both experimental and mathematical approaches in studying physical and chemical treatment processes for the treatment of drinking water, wastewater, and industrial process water. Much of his work focuses on the removal of particles through modern membrane processes as well as through conventional processes, and his current focus of his work is on pretreatment for membrane processes, including the improvement of water recovery in desalination by reverse osmosis.

### **Stuart Mitchell**

Stuart began his career in the water industry in 1975 regenerating ion exchange resins and servicing reverse osmosis equipment in the lab and dialysis industry for Continental Water Systems of Houston. He graduated from Texas A & M University with a degree in Mechanical Engineering in 1982. He has been involved in the technical sales and service of equipment, membranes, ion exchange resins and filtration components for the past 20 years, working for various manufacturers of all these products. He is an active member and active participant in SCMA as well as the Southeast Desalting Association, American Water Works Association and American Membrane Technology Association.

### **David Russell, Professional Water Technologies**

David Russell has specialized in membrane separation processes since 1982, including the construction, installation, commissioning and field service of reverse osmosis systems. His expertise also includes the application and management of filtration processes including mixed-media with filtration aids.

### **Saqib Shirazi, Texas Water Development Board**

Dr. Saqib Shirazi is an engineer in the Innovative Water Technologies Division of the Texas Water Development Board. He has over eight years of experience in the field of water reuse, desalination, and water and wastewater treatment. He has published numerous technical articles on desalination and water reuse. He is a member of several professional organizations including the Texas American Water Works Association (TAWWA), and the South Central Membrane Association (SCMA).

### **Justin Sutherland, Ph.D., P.E., Carollo Engineers**

Dr. Sutherland earned a B.S. in Chemical Engineering, M.S. in Chemical Engineering, and M.S. in Civil Engineering, all from the Missouri University of Science and Technology. He currently works with the Carollo Research Group and has 12 years of experience in water quality assessments, applied water research, and design work, including filtration, nitrification, desalination, and disinfection by-product mitigation. He is the Carollo Project Engineer for the current project that will be presented.

### **David A. Williams, P.E., Texas Commission on Environmental Quality**

David received his Bachelor of Science in Civil Engineering from the University of Texas at San Antonio. Prior to moving to Austin in February 2007 and working for the TCEQ, David worked for water utilities in the San Antonio area. Currently, David reviews pilot studies and designs for innovative water treatment technologies and requests for exceptions to the commission's minimum requirements for the design and operation of public drinking water systems.

## Sponsors

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**Carollo Engineers** is an environmental engineering firm specializing in water and wastewater treatment planning, design and construction management. Membrane technologies are a vital part of our business and we are a leader in the science, policy, and implementation of these technologies for water and reuse applications. Not only does Carollo deliver quality design and construction phase services, but we also support these projects during operation. Our nationally recognized membrane experts work to provide operations support and training and are frequent instructors at operator certification schools across the country. [www.carollo.com](http://www.carollo.com)



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**CDM** is a consulting, engineering, construction, and operations firm delivering exceptional service to public and private clients worldwide. Drawing on decades of engineering excellence, CDM provides clients with design expertise in all functional areas—automation and instrumentation, civil and structural design, electrical and mechanical systems, process design, and geotechnical engineering. CDM's goal is to help each client meet its goal of a superior—and cost-effective—engineered project. [www.cdm.com](http://www.cdm.com)



## Exhibitors



ALTIVIA is a chemical manufacturer and equipment provider focusing primarily on water treatment solutions for municipal drinking water and wastewater plants primarily located in the US Gulf Coast and Midwest. We have the unique ability to provide our customers with most, if not all, of their water treating needs. ALTIVIA supplies aluminum sulfate, aluminum chlorohydrate, ammonium sulfate, coagulant blends, caustic soda, chlorine, copper sulfate, sodium hypochlorite, sulfuric acid, iron salts, biologicals, corrosion inhibitors, and polymers.

ChemCal is one of the largest and most successful independent water treatment companies in the United States. We have been in continuous operation since 1984 with uninterrupted growth in sales, geographic coverage, and workforce. ChemCal has sales and service representation throughout all major market centers of the mid-south. We provide water treatment chemicals, control equipment, and technical services to the owners and operators of reverse osmosis units, cooling towers, steam boilers, closed loops, and a variety of other industrial water applications. ChemCal's headquarters, laboratories, and manufacturing facilities are located in Grapevine, Texas, which is within the Dallas/Fort Worth Metroplex.



### Water & Process Solutions

The global leader in sustainable separation and purification technology, Dow Water & Process Solutions is making a clear impact in the world. We're helping to make water safer & more accessible, pharmaceuticals more effective and industries more efficient and spearheading the development of sustainable technologies that integrate water and energy requirements. DW&PS offers a broad portfolio of ion exchange resins, RO membranes, UF membranes and EDI products, with strong positions in a number of major application areas, including industrial & municipal water, industrial processes, pharmaceuticals, power, residential water and waste and water reuse. Visit [www.dowwaterandprocess.com](http://www.dowwaterandprocess.com) for more information.

The global leader in sustainable separation and purification technology, Dow Water & Process Solutions is making a clear impact in the world. We're helping to make water safer & more accessible, pharmaceuticals more effective and industries more efficient and spearheading the development of sustainable technologies



GE Water & Process Technologies is a leading supplier of membranes for water treatment, wastewater treatment and water reuse. GE manufactures membranes and assembles systems for reverse osmosis, electrodialysis reversal, and ultrafiltration applications. We have systems in Texas treating brackish surface and ground water, river water, lake water, wastewater and seawater.

Hydranautics is a world leader in the manufacture of membrane separation products.



Founded in 1963, we have engineering, service and manufacturing facilities in the U.S. (Oceanside, CA), Japan and China. With R & D centers in the U.S. and Japan, Hydranautics continues to produce the most innovative and effective membrane products for the water treatment industry. Our ISO9001:2000 certification demonstrates a commitment to quality and customer satisfaction. Most recently, we have developed low differential pressure membrane elements with wider biostatic feed spacers that offer fouling resistance, lower feed pressures and balanced flux between stages as well as the most productive, energy efficient seawater membranes on the market.

## Exhibitors



McCain Waterworks Marketing

Jim McCain is the principal in McCain Waterworks Marketing with headquarters in San Antonio, Texas and sales representatives in Dallas and Houston, Texas. He has B.S. and M.A. degrees from Southwest Texas State University. He has worked in sales in the Water and Wastewater industry since 1976 in Texas and started McCain Waterworks Marketing in 2004.

His firm works with Municipalities, Water Supply Corporations and other water and wastewater utilities and their consultants in specification and application of cost effective products including air release valves, piping and related appurtenances. [www.mccainww.com](http://www.mccainww.com)



Piedmont Pacific Corporation specializes in stainless steel couplings for wet and corrosive environments where high strength and long service life are required. Water, wastewater, seawater and some chemical process industries have these requirements and stainless steels have proved over time to be the most cost effective material for these applications. Piedmont uses both type 316 stainless and duplex stainless, depending upon the type of coupling. Type 316 is the most commonly used stainless steel in the water industry and for exposed applications, it provides long and trouble-free service. Although more expensive, Duplex steel has the advantages of being both substantially stronger and more corrosion resistant than type 316; Piedmont uses duplex for most high pressure couplings.

Professional Water Technologies synthesizes specialty pretreatment chemicals for RO, and NF membrane processes. They provide complete membrane forensics autopsy services including biological and microscopic analysis, and element or membrane characterization capabilities. PWT also has a complete line of membrane cleaners



for inorganics, silica, colloids, biological, and other specialty applications, as well as the FilteRx line of organic and inorganic filter aids for coagulation/flocculation. PWT is the only RO specialty chemical company that synthesizes its own raw dendrimer-based polymers. They provide the only IIX super-concentrated pretreatment line to cut shipping/handling by 90%. PWT also developed the first NSF Std. 60-compliant bioinhibitor for RO.



Toray, a leading global membrane manufacturer for water purification and wastewater reclamation, offers expertise in water and wastewater treatment technologies, including integration of membrane solutions such as MF/RO, UF/RO or MBR technology to help our customers improve their competitiveness and plant performance. Toray is one of a very few companies with manufacturing and application expertise across the entire spectrum of high-performance water treatment membranes, including reverse osmosis (RO), ultra-filtration (UF) and micro-filtration (MF) membranes as well as membrane bioreactors (MBR) modules. Toray's state-of-the art automated winders assemble membranes using Toray's automated technology ensuring consistent product quality and superior performance.

The Texas Water Development Board's mission is to provide leadership, planning, financial assistance, information, and education for the conservation and responsible development of water for Texas. Our mission is a vital part of Texas' overall vision and its mission and goals which relate to maintaining the viability of the state's natural resources, health and economic development.

