

2009 Technical Review Committee Insights



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Susan B. Rivera is the Manager of Research and Applications at MIOX Corporation, a manufacturer of on-site hypochlorite (chlorine) generators. Since joining MIOX three years ago, Rivera has assumed responsibility for understanding each application where generating hypochlorite at non-hazardous concentrations from salt, water and power offer a cost-effective replacement to chlorine gas, calcium hypochlorite, bulk bleach, or other halogen-based chemicals. In addition to technical applications, Rivera and her team provide input for new product development.

Rivera received her doctorate in biochemistry in 2001 from the University of Utah. Next, Rivera commenced two research fellowships at Sandia National Laboratories; one in bionanomechanical system characterization with a diverse team of engineers and material scientists, and the other in international biological threat-reduction policy. Rivera's two-year policy position provided her with security, expertise and a broad understanding of international relations. Assignments included India and secondment to the World Health Organization.

At MIOX, Rivera utilizes her scientific, regulatory and policy experience to further scalable, on-site generation disinfectant equipment, and novel applications for the technology. This includes managing the company's Small Business Innovative Research (SBIR) awards from the National Science Foundation and the Department of Defense. Rivera plays a key role in developing the relationships necessary to commercialize promising technologies and bring them to appropriate markets.

MIOX Corporation's core mission is to help provide sustainable, energy-efficient, practical, innovative solutions to the world water crisis. This includes exploring market-based options for providing safe water to the billions who lack access. Rivera is working with PATH, a Seattle-based NGO, and Cascade Designs Incorporated to design on-site electrochlorinator product(s) capable of meeting price-points for each developing-nation market segment. Proper implementation and microfinancing where appropriate could help produce chlorine from local salt sources in areas where electricity is intermittent and logistics difficult.

Because operations, water chemistries and facilities differ from application to application, Rivera obtains operator

certifications and training whenever possible. When asked for technical application advice from colleagues and customers regarding commercial aquatics applications, Rivera completed the National Swimming Pool Foundation's internationally recognized Certified Pool-SPA Operator® course. She now assists customers in troubleshooting pools suffering from chemical imbalances, high bather loads and inadequate maintenance.

Rivera is an active member of the American Water Works Association, the Water Environment Federation, the American Chemical Society, and the American Association for the Advancement of Science. She and her team have published a number of articles about on-site hypochlorite generation and its applications.

1. How did you get started in the water conditioning and purification marketplace? What was your first job in it?

My first position in the industry is the one I currently hold at MIOX. I started my career in biochemistry with the expectation of joining the health or pharmaceutical industry. I now have the privilege of leading MIOX's research and applications team.

2. How/why did you start/maintain your professional involvement?

The field of water treatment allows industry professionals to work anywhere safe water is needed. This provides worldwide opportunities in nearly any application where water is needed for power/energy production, cooling, processing or drinking.

3. What are you most proud of in your profession?

Applying my talents and learning new disciplines to help improve water quality and health in environmental and market-sustainable ways.

4. What are you least proud of in your profession?

While professionals from biology, chemistry, engineering, business, policy, water treatment and community leaders have made progress in understanding how to solve global water problems, we still have many challenges ahead of us. Greatest among these is the lack of public understanding concerning how much safe water costs to manage, produce and transport to each user.

5. What gives you the most joy in your professional life?

I enjoy building successful collaborations and teams with the capability to provide new technology or improved applications of existing technology to solve water quality problems.

6. What do you dislike most in your professional life?

Time away from family.

7. If there were three portraits on the wall behind your desk, not of family, who would they be and why?

Marie Curie, wife and mother of two children, was honored twice with a *Noble Prize*, once in 1903 in physics and again in 1911 in chemistry.

John Snow, an accomplished anesthesiologist, who also established the link between cholera infections and water. He systematically located the source of an outbreak in England, which required perseverance during a time when skepticism

about germ theory was high.

Ansel Adams because of his masterful communication abilities through photographs and diplomatic activism.

8. If you were not in the water conditioning and purification industry, what would you be doing?

Business and international program development.

9. Why would you do that?

These areas provide interesting challenges with the potential to positively affect individuals, groups and nations.

10. Polish up your crystal ball...what will be the three most important issues in our industry within the next five years?

Water conservation, water quantity/quality and water resources as a major geopolitical driver. ♦