

NATIONAL WATER RESEARCH INSTITUTE

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For more information, please contact:

Gina Vartanian, NWRI (714) 378-3278

Jeff Mosher, NWRI (714) 378-3278

www.nwri-usa.org

**BRUCE LOGAN, PIONEER IN ENERGY GENERATION FROM WASTEWATER,
TO RECEIVE THE 2009 CLARKE PRIZE**

FOUNTAIN VALLEY, Calif. – The National Water Research Institute (NWRI) announced today that environmental biotechnologist Bruce E. Logan, Ph.D., of The Pennsylvania State University will be the sixteenth recipient of the NWRI Athalie Richardson Irvine Clarke Prize for excellence in water research. Logan was selected because of his innovative efforts to generate clean, renewable forms of energy during the treatment of wastewater.

The 2009 Clarke Prize will be presented to Logan on Thursday, July 9, 2009, at the Sixteenth Annual Clarke Prize Lecture and Award Ceremony, to be held at the Fairmont Newport Beach in Newport Beach, CA. NWRI established the Clarke Prize in 1993 to recognize outstanding research scientists who have demonstrated excellence in water-science research and technology. The prize, which includes a medallion and \$50,000 award, is presented annually.

Logan has taught courses in water and wastewater treatment at Penn State since 1997, where he serves as the Kappe Professor of Environmental Engineering. He also established and directs the Penn State Hydrogen Energy (H₂E) Center, which is dedicated to developing and promoting the use of hydrogen for sustainable energy production.

Five percent of the electricity generated in the United States is used for water infrastructure, such as powering treatment plant processes. In developing nations, the energy needed to power water infrastructure is often cost-prohibitive, leaving millions of people without adequate supplies of water or sanitation. In response, Logan has taken the initiative on developing an energy-sustainable water infrastructure for both industrialized and developing nations.

The new technologies pioneered by Logan have made it possible to directly generate energy from organic matter (or, decaying compounds) found in wastewater. These technologies have the potential not only to transform wastewater treatment plants into self-sufficient power plants, but also to produce excess power for the broader community.

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Logan is best known for his groundbreaking work on microbial fuel cells, which are bioreactors that use natural bacteria to break down organic matter in wastewater, producing both electricity and treated effluent. His 2008 textbook, *Microbial Fuel Cells*, is one of the first books written on this technology. He is also currently working on a newly invented bioreactor, the microbial electrolysis cell, which breaks down organic matter to produce hydrogen as an energy source.

A prolific and internationally renowned researcher, Logan has published over 220 technical papers and several books on topics such as bioenergy production, bioremediation, and environmental transport processes. He is also actively involved in collaborations around the world to promote the development of energy-sustainable water infrastructure. Among these efforts, he is a Visiting Professor at both Harbin Institute of Technology in China and Newcastle University in the United Kingdom, focusing on renewable bioenergy production, and a collaborator with Tsinghua University in China, where he is developing a new zero-electrical energy desalination technology. He is also a Global Research Partner with King Abdullah University of Science and Technology in Saudi Arabia, investigating novel technologies for energy production using wastewaters and agricultural waste.

Established in honor of NWRI's co-founder, the late Athalie Richardson Irvine Clarke, the Clarke Prize is awarded to outstanding research scientists who are currently active in the water and wastewater fields. It is one of only a dozen water prizes awarded worldwide and has been distinguished by the International Congress of Distinguished Awards as one of the most prestigious awards in the world.

Recent past recipients of the Clarke Prize include: aquatic scientist Nancy N. Rabalais, Ph.D., of the Louisiana Universities Marine Consortium (2008); environmental engineer James L. Barnard, Ph.D., P.E., of Black & Veatch Corporation (2007); water-quality engineer Philip C. Singer, Ph.D., P.E., of the University of North Carolina at Chapel Hill (2006); water-quality engineer Menachem Elimelech, Ph.D., of Yale University (2005); water-quality engineer Vernon L. Snoeyink, Ph.D., of the University of Illinois at Urbana-Champaign (2004); and wastewater engineer George Tchobanoglous, Ph.D., P.E., of the University of California, Davis (2003).

More information about the Clarke Prize can be found at www.nwri-usa.org/ClarkePrize.htm.

The National Water Research Institute (NWRI) was founded in 1991 by a group of Southern California water agencies in partnership with the Joan Irvine Smith and Athalie R. Clarke Foundation to promote the protection, maintenance, and restoration of water supplies and to protect the freshwater and marine environments through the development of cooperative research work. NWRI's member agencies include Inland Empire Utilities Agency, Irvine Ranch Water District, Los Angeles Department of Water and Power, Orange County Sanitation District, Orange County Water District, and West Basin Municipal Water District.

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