



Metropolitan Water Reclamation District of Greater Chicago

Press Release

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MWRD Environmental Microbiologist describes nutrient research during American Society for Microbiology conference

Water quality is being impaired all over the world due to excessive nutrients from agricultural runoff and wastewater. Nitrogen and phosphorus cause algae blooms, which in turn deplete oxygen in the water and make the water environment inhospitable for aquatic life. The Gulf of Mexico suffers from a “dead zone” due to low oxygen, also known as hypoxia, at the mouth of the Mississippi River.

Nationwide, regulations are starting to strengthen with regards to nutrient limits; as a result, Illinois water utilities are facing billions in costs to meet increasing demands to enhance treatment processes, improve infrastructure, and address sewer overflows. The estimated cost for all Illinois plants to implement Phosphorus removal ranges between \$570 million to almost \$3 billion.

One method currently being studied by the Metropolitan Water Reclamation District of Greater Chicago (MWRD) to target nutrient removal is called the “Molecular Gene Probe” method. Dr. Geeta Rijal, MWRD supervising environmental microbiologist, is leading the research in an effort to understand the dynamics of ammonia oxidizing bacteria and nitrite oxidizing bacteria which play an important role in the removal of nitrogen from the wastewater treatment process.

Dr. Rijal, who has worked for the MWRD for 12 years, presented her research at the American Society of Microbiology’s 113th general meeting in Denver, Colorado earlier this week.

“There are nutrient-removing bacteria naturally growing in our wastewater system,” said Dr. Rijal. “With a proper molecular identification method, we can help to evaluate their abundance and nutrient removal potential.”

In April, the American Academy of Environmental Engineers (AAEE) and Scientists Certification Board nominated Dr. Rijal as the Board Certified Environmental Scientist in the Environmental Microbiology Specialty. Dr. Rijal was invited to attend the Excellence in Environmental Engineering and Science Conference at the National Press Club in Washington, DC on April 25 and received the recognition from the past AAEE President, Dr. Cecil Lue-Hing, former MWRD Director of Monitoring and Research. Nancy Helen Sutley, who leads the White House Council on Environmental Quality, served as the conference’s keynote speaker.

“The issue of the Gulf hypoxia is a national concern,” said Commissioner Patrick D. Thompson, chairman of the MWRD Monitoring and Research Committee. “I commend Dr. Rijal and her colleagues at the MWRD for their research efforts in developing a potential solution that will have long-term benefits.”



MWRD supervising Environmental Microbiologist Dr. Geeta Rijal (on the right) meets with Nancy Helen Sutley, head of the White House Council on Environmental Quality, during a recent conference at the National Press Club in Washington, DC on April 25.

Our Water Environment: Take it personally

Established in 1889, the MWRD (www.mwr.org) is an award-winning, special purpose government agency responsible for wastewater treatment and stormwater management in Cook County, Illinois.