

The Illinois Water Resources Center (IWRC) is dedicated to research and outreach programs on water resources issues critical to Illinois and the Midwest. This document provides an overview of the current programs of the IWRC.

IWRC Turns 40!

In the mid-1960s, the Illinois Water Resources Center was created at the University of Illinois. In the last 40 years, IWRC has amassed a sizable collection of research reports and special publications reflecting the progression of critical water resource issues in Illinois over the decades. Research Coordinator Phil Mankin notes, "Our natural desire is to always look to the future and predict trends whenever possible. Developing an objective perspective of what has been done in the past on water issues is essential to understanding how we got to where we are today. After all, misconceptions of the past can alter the way we view the future and can affect our decisions."

The publications, past and present, are available through our web site. We have begun to digitize publications whenever possible to make access even easier. We hope to have the entire collection of publications available electronically in the coming years.

In recent years, we have funded research on topics such as the impacts of pharmaceuticals in waterways, groundwater flow and contamination transport in regional aquifers, stream bank naturalization and nutrient decay in surface water.

We are also required to establish and maintain information exchange networks. According to Program Coordinator Lisa Merrifield, this mandate has seen the most transformation in the last 40 years. "In the past we relied on hard copy mailings, publications, and face-to-face meetings. While those methods for information exchange are still important, the Internet has really changed the way we do business. Our focus is on electronic information. Our challenge is to make sure we are getting people's attention."

Warner sums up the past, present and future of IWRC by saying, "We have been working on water quality and quantity, nutrient fate and transport,

flooding and drought, and everything in between for the last 40 years. We have accomplished a lot, and we look forward to doing even more in the next 40."

U of I Dissertation Wins UCOWR Award

For the third year in a row, an IWRC Ph.D. student's dissertation was awarded the Universities Council on Water Resources (UCOWR) award. Dominic Frigon, a graduate from the Department of Environmental Sciences in Civil Engineering, is the recipient in the field of natural science and engineering. "He designed and performed several major experiments that required the use of advance molecular biology techniques, mathematical modeling, sophisticated statistical tools, and process engineering analysis," explains Dr. Lutgarde Raskin, Frigon's Ph.D. advisor.

Frigon's dissertation on seasonal sludge in wastewater treatment systems and research explained he created models to answer a question long posed by water treatment managers and operators. Why is foam production higher during certain times of the year? "Focusing on fundamental mechanisms describing the activity of bacteria in the activated sludge ecosystem allows the export of results between wastewater treatment plant, and provides a global framework to understand and solve foaming and bulking problems," states Dr. Frigon. Each water treatment plant around the globe is different, making it difficult to pin-point one cause. Instead Dr. Frigon created a model in which the water treatment operator/manager would insert their information and find a solution. "One of the most pressing challenges in environmental biotechnology remains to describe the basic rules determining the interactions of microbial populations among them and with their natural environment such that we can learn to reliably manipulate microbes and achieve microbial community engineering," explains Frigon.