



**Testimony of Dr. Daniel Devlin
Director, Kansas Water Resources Institute**

**On behalf of the National Institutes for Water Resources to the
House Committee on Appropriations, Subcommittee on Interior, Environment and
Related Agencies, February 26, 2019**

Chair McCollum and Ranking Member Joyce:

Good afternoon. I am Dan Devlin, Director of the Kansas Water Resources Institute at Kansas State University. Thank you for this opportunity to testify on behalf of National Institutes for Water Resources (NIWR), in support of the Water Resources Research Act program, a program funded as part of the U.S. Geological Survey's (USGS) budget. I would like to start by thanking the Subcommittee for its continuing support for the Water Resources Research Act, and request that the Subcommittee fund the WRRR program in FY 2020 at \$10 million.

The Water Resources Research Act, enacted in 1964, is designed to expand and provide more effective coordination of the Nation's water research. The Act establishes water resources research institutes (Institutes) at lead institutions in each state, as well as for Washington D.C., Guam, Puerto Rico, the Virgin Islands, the Federated States of Micronesia, the Commonwealth of the Northern Mariana Islands, and American Samoa.

Congress created the Institutes to fulfill three main objectives:

- Develop, through research, new technology and more efficient methods for resolving local, state, and national water resources challenges;
- Train water scientists and engineers through on-the-job participation in research; and
- Facilitate water research coordination and the application of research results through dissemination of information and technology transfers.

Since 1964, the Water Resources Research Institutes have fulfilled these three objectives in partnership with the U.S. Geological Survey. The Institutes, managed by a director in each state, promote water-related research, education, and technology transfer at the national, state, and local level through grants and sponsored projects. The program is the only federally-mandated research network that focuses on applied water resource research, education, training, and outreach.

The Institutes partner with universities, local governments, industry, and non-governmental organizations to help solve a variety of regional water challenges. Each state contributes a minimum of a 2:1 match of non-federal funds to federal funds, thus ensuring that local and regional priorities are addressed and the impact of federal dollars is maximized. The Institutes are a direct, vital link between federal water interests and needs and the expertise located within the states' research universities.

The Institutes ensure coordination between state, regional, and national interests by collaborating with 150 state agencies, 180 federal agencies, and more than 165 local and municipal offices. The Institutes, in partnership with USGS, have provided significant research results and services to our Nation and proven successful at bringing new water professionals into the work force. Although these projects primarily focus on state needs, they also address water issues relevant to our Nation. The following are several examples of research conducted by Institutes across the country.

My Institute, the **Kansas Water Resources Institute (KWRI)**, is an institute at Kansas State University. Research projects being funded help determine why and when conditions are right for harmful algae blooms to occur in surface water reservoirs. Researchers are assessing how different nutrient levels and forms affect the development of harmful algae blooms and they are also developing models that will allow forecasting when conditions are favorable for harmful algae blooms to occur. Results of this work will help agencies predict harmful algae bloom formation and protect human health.

The **Minnesota Water Resources Center** is supporting a team of researchers developing techniques for nearly continuous monitoring of over 12,000 Minnesota lakes using satellite imagery. Although Minnesota has a well-regarded water monitoring program, only a small fraction of the state's lakes are currently monitored on a regular basis. The new data will be high resolution and frequent for all lakes, allowing agencies to target field monitoring where needed while also providing new data to manage aquatic habitats.

Researchers at the **California Institute for Water Resources** are monitoring water and sediment discharge from waterways to quantify sediment impacts. Debris flows in the mountains of southern California pose acute hazards to local populations and may have far reaching water quality effects. Although debris flows in urban areas are contained in part by basis constructed to impound sediments, fine sediments are routinely discharged, and little is understood about the impacts of those sediments on downstream water bodies. The results of this study will be used to help local management agencies enhance debris basin management in terms of water quality.

Research being funded through the **Maine Water Resources Research Institute** will help determine what remediation efforts might be required by drinking water utilities in the wake of an increase in the rate and intensity of precipitation events and associated rapid runoff. These extreme events wash organic matter into lakes that can ultimately cause a buildup of organic

carbon that can trigger disastrous algal blooms, taste and odor problems, and may form unhealthy by-products. Their work will inform the development of management and adaptation strategies to ensure sustained water quality.

There are two grant components of the USGS Water Resources Research Institutes program.

The State Water Research Grants provide competitive seed grant funding opportunities for state water institutes for research priorities that focus on state, local, and community water resources problems. The study areas span the spectrum of water supply, water quality, and public policy issues of water management. These seed grants are used to develop future research proposals and secure additional external funding.

The National Competitive Grants program promotes collaboration between the USGS and university scientists in research on significant national and regional water resources issues and promotes dissemination of results of the research funded under this program.

With our funding and educational services, water-related professionals and researchers provide solutions to the many complex water management challenges we face, including toxicity in urban stormwater runoff, managing aquifer recharge in drought – stricken communities, and monitoring and alleviating human and ecological health impacts associated with water reuse.

Our Nation faces growing challenges in providing water for agriculture, human consumption, industrial use, and natural resource applications. Institutes also use their base grants to help train new scientists, disseminate research results to water managers and the public, and promote intrastate and regional collaboration. The Water Resources Research Institutes serve to build the STEM workforce as we enter a period in which there will be a disproportionate number of retirements in all sectors.

For FY 2020, the National Institutes for Water Resources recommends the Subcommittee provide \$10,000,000 to the USGS for the Water Resources Research Institute program. Given the growing challenges our Nation faces with respect to water quantity and quality, investing in programs at USGS focused on data collection and the reliability and quality of water supplies is critically important to the health, safety, quality of life, and economic vitality of communities across the Nation.

Thank you, on behalf of all the Institute directors, for the opportunity to testify and for the Subcommittee's strong support of the Water Resources Research Institutes program.