



Members and Friends of the Indiana Water Resources Association,

The Indiana Water Resources Association (IWRA) is pleased to announce the following 2025 award winners that were recognized during the 44th Annual Water-Resources Symposium held at Brown County State Park, Nashville, Indiana, on June 25-27, 2025:

William G. Wilber – John S. Zogorski Leadership Award

Garth Lindner; Indiana Department of Natural Resources, Division of Water

Charles H. Bechert Award

Jeff Martin, U.S. Geological Survey (retired)

IWRA Outstanding Achievement Awards

Academic Sector: Institute for a Sustainable Future PFAS Strategic Research Team; Purdue University – For the Institute’s contribution to understanding and addressing the challenges of PFAS contamination in Indiana.

Public Sector: Groundwater Section; Indiana Department of Environmental Management – For their multifaceted approach to address the complex issues of PFAS contamination in Indiana.

Private Sector: Alliance of Indiana Rural Water – For AIRW’s dedication to supporting Indiana’s rural water and wastewater utilities.

Student Presentation Awards

Best Oral Student Presentation (\$200 Award):

Isaac Bradford, Purdue University, “Estimating Biogeochemical State of Inland Water Bodies with Remote Sensed Parameters and Machine Learning Methods”

Best Student Poster Presentation (\$200 Award):

Ayomide Adepeju, Purdue University, “Assessing Potential Water Stress from Increasing Technology on the Wabash River Basin”

The IWRA congratulates these deserving award winners and is proud to honor their achievements. The following are nominations submitted for the award winners and past recipients of each award:

Charles H. Bechert Award Nomination: Jeff Martin, U.S. Geological Survey

The Charles H. Bechert Award is presented by the IWRA to a member of the water resources community who has contributed significantly to water resources activity in the state of Indiana. This year's recipient spent his entire career of over 30 years studying and analyzing the surface water resources throughout the state while working for the United States Geological Survey Indianapolis office.

Jeffrey D. Martin earned a Bachelor of Arts degree from Indiana University in 1977, with a major in Biological Sciences and a minor in Chemistry. In 1981, he earned a Master's degree in Environmental Science with a major emphasis on Water Resources. Jeff began his career with USGS collecting and analyzing surface water quality data to define the effects of coal mining in west central Indiana, and the effects of combined sewer overflows on the White River in Marion County.

By 1987, Jeff was moving toward the work for which he became known throughout the state and the country—data analysis and quality control. He continued to design and conduct surface water quality studies on metals, herbicides, pesticides, and synthetic organic compounds.

In 1991, Jeff started working on the NAWQA program with the White River Study Unit. He designed the data networks, quality control programs, sampling protocols, and the review and interpretation of field and laboratory data. He designed the national field QC program for NAWQA Study Units, and began teaching a USGS training class, "QC Sample Design and Analysis", that he continued to teach annually for the rest of his career. About this time, he advised the Water Quality staff at the Marion County Department of Public Health on ways to improve its surface water quality sampling program.

From 1997 to his retirement, Jeff concentrated mostly on pesticide data. He compiled and analyzed a national data set of surface water and groundwater samples to determine factors associated with the occurrence and distribution of pesticides, and the implications for human and biological health. He developed a national field QC program, and then developed RDB, SAS, Splus, and UNIX programs for the retrieval, compilation, screening, and statistical analysis of nationally aggregated pesticide QC data from the NAWQA Study Units.

In recent years, Jeff continued refining the models, and developed new ones, to calculate and compare the recovery of field-spiked and laboratory-spiked QC samples. He compiled and analyzed a national data set of surface water samples for use in summarizing pesticides in the nation's streams and rivers from 1992-2010, and compared bias and variability in newer and older analytical methods.

During his career, Jeff authored or co-authored over 60 publications, and made over 30 presentations, on top of teaching the annual QC class.

Although it is difficult to imagine Jeff had any free time, music was a constant in his life. He and some of his USGS colleagues performed as "The Lost Water Boys" for years, composing water-related lyrics for the enjoyment of his friends and co-workers. He held house concerts, often of music from his ancestral Irish homeland, and he was a longtime fan of singer-songwriter Todd Rundgren.

Jeff collects and enjoys good wine, and was the frequent facilitator of IWRA social hours. He attended every IWRA meeting (except in 2018 when he was in Ireland). Jeff served as President of IWRA in 1992 and again in 2017. He WAS the Membership "Committee" from 1993-2019, maintained the IWRA mailing list and Symposium registrations, and served as communication guru to distribute water resource info.

For these and many more reasons, we are pleased to present the 2025 Charles H. Bechert award to Jeffrey D. Martin.

Outstanding Achievement in the Academic Sector Nomination: Institute for a Sustainable Future PFAS Strategic Research Team; Purdue University – For the Institute's contribution to understanding and addressing the challenges of PFAS contamination in Indiana.

This is a nomination of the Purdue University Institute for a Sustainable Future (ISF) PFAS Strategic Research Team and its collaborators for the Indiana Water Resources Association's 2025 Outstanding Achievement in the Academic Sector Award. Their work, particularly as presented in the comprehensive "Indiana Statewide PFAS Assessment" report published in February 2025, represents a significant contribution to understanding and addressing the challenges of PFAS contamination in Indiana, with a critical focus on water resources and public health.

The nominated team, including researchers from Purdue University, Indiana University-Bloomington, the University of Notre Dame, and state agencies such as the Indiana Department of Environmental Management (IDEM), has produced a report that provides a vital overview of the current scientific understanding of PFAS and a concise assessment of their impacts in Indiana. This collaborative effort effectively compiles existing knowledge and highlights key areas of concern and future research needs specific to the state.

A central focus of the report and the team's research is the understanding of PFAS in Indiana's water systems and the subsequent impacts on human health. Key findings emphasize that Indiana residents are exposed to PFAS through several pathways, with contaminated drinking water being identified as a primary route.

The report details how PFAS enter water bodies through various sources, including releases from industries, the historical use of firefighting foams, and the land application of biosolids, which can lead to runoff into surface water and potential impacts on groundwater. Atmospheric deposition is also noted as a pathway for PFAS to enter lakes and other waters.

The team's research, which extends the impact of IDEM's sampling projects, has led to the mapping of PFAS detections and exceedances in drinking water utilities across Indiana counties. This public presentation of data is crucial for raising awareness and guiding targeted monitoring efforts. The report also critically points out the significant private water-well data gap and potential exposure risk for many Hoosiers, particularly in rural areas.

The effective presentation of this research in the "Indiana Statewide PFAS Assessment" report makes it particularly deserving of recognition. The work provides tangible benefits to Indiana citizens by consolidating complex scientific information into an accessible report, identifying key exposure risks relevant to their daily lives, and offering practical guidance. The report also serves as a crucial tool for informing policy and action within the state.

In conclusion, the work of the Purdue University ISF PFAS Strategic Research Team is a significant contribution to advancing our understanding and capacity to manage PFAS risks within the state's water resources. The project directly benefits Indiana citizens and aligns strongly with the mission of the Indiana Water Resources Association.

Outstanding Achievement in the Public Sector Nomination: Groundwater Section; Indiana Department of Environmental Management – For their multifaceted approach to address the complex issues of PFAS contamination in Indiana.

IDEM has been taking a multifaceted approach to address the complex issue of PFAS contamination in Indiana. This includes monitoring, risk assessment, public awareness, and preparedness for regulatory action.

PFAS are a large class of synthetic chemicals used since the 1940s for their water and grease repellent properties and heat resistance. They are found in numerous consumer and industrial products, including non-stick cookware, water-repellent clothing, firefighting foams, and in manufacturing processes for electronics and pharmaceuticals. A key concern is their persistence in the environment – earning them the nickname "Forever Chemicals" – and their ability to bioaccumulate in living organisms, including humans and wildlife. Exposure to PFAS above certain levels has been linked to adverse health effects.

IDEM identified PFAS as an emerging concern and recognized that there was an absence of data for assessment and decision-making. The program was assigned to the IDEM Groundwater Section of the Drinking Water Branch for implementation. They responded by initiating and standing up a brand new comprehensive, phased sampling program for PFAS in Indiana's Community Public Water Systems in early 2021. This program involved testing both raw (wells and intakes) and finished (after treatment) water, was guided by EPA health advisory levels and IDEM's own action levels, and the results were made publicly available.

IDEM structured the sampling plan into phases, prioritizing systems based on the population they serve, starting with the smallest systems because most were not included in the U.S. EPA's Unregulated Contaminant Monitoring Rule sampling completed in 2014 and 2015. Systems serving over 10,000 people were sampled last.

When IDEM received results, they provided them to the community water systems. Additional investigation was sometimes necessary, and mitigation options were evaluated. IDEM posted all results from the CWS sampling project on its PFAS website.

Beyond the CWS sampling program, IDEM has also conducted other related PFAS monitoring efforts, including analyzing fish tissue for PFAS since 2017 to track trends, understand background levels, identify sources, and support fish-consumption guidelines. IDEM also partnered with ORSANCO and other member states on an ambient sampling project for PFAS in the Ohio River in 2021 to determine background levels.

IDEM's work has also been crucial in informing academic research. The "Indiana Statewide PFAS Assessment" report, published by Purdue University's Institute for a Sustainable Future in February 2025, explicitly acknowledges that the Indiana Department of Environmental Management (IDEM) provided important data and valuable advice based on their leadership in PFAS management.

This initiative is a significant step in understanding PFAS occurrence and treatment efficacy. This program is a quality example of the value that governmental agency programs provide to the citizens that their mission areas support. It is my pleasure to nominate the Groundwater Section of the IDEM Drinking Water Branch for the 2025 Indiana Water Resources Association award for outstanding achievement in the public sector.

Outstanding Achievement in the Private Sector Nomination: Alliance of Indiana Rural Water – For AIRW's dedication to supporting Indiana's rural water and wastewater utilities.

Established in 1982, the Alliance of Indiana Rural Water (AIRW) has been a vital organization dedicated to supporting Indiana's rural water and wastewater utilities for over four decades. Its core mission is clear: to "empower Indiana's rural utilities, fostering sustainability and resilience" and "ensuring clean, reliable water for the communities they proudly serve".

From its inception, the Alliance has elevated standards and support for rural communities across the state, acting as a steadfast ally. AIRW has experienced enormous membership growth, currently supporting over 1,000 members comprised of water and wastewater systems and related professionals throughout the state. This large membership base allows for a collective voice and shared resources. AIRW offers comprehensive support to its members through various services. They are recognized as an outstanding resource, consistently providing valuable knowledge and resources that utilities might otherwise find difficult to access.

A significant focus of AIRW is proactively addressing the substantial workforce challenges within the industry, particularly the anticipated retirement of approximately 50% of the dedicated men and women in the field over the next decade. Recognizing this impending personnel turnover, the Alliance began collaborating in 2017 to tackle these challenges. This led to the development of their highly successful apprenticeship program.

The program is now regarded as one of the top water and wastewater apprenticeship programs in the United States and operates on an "earn while you learn" model. Utilities are leveraging this program for succession planning and to fill the critical skills gap left by retiring operators. Apprentices gain utility-specific knowledge as well as broader understanding and new processes and technologies, laying the foundation for a sustainable career and training the next generation of certified operators. The apprenticeship program's success recently earned the Alliance the 2024 State Association of the Year award from the National Rural Water Association (NRWA).

On a personal level, their commitment to helping operators is clear, as one operator noted, "you guys answer the phone," providing spot-on assistance and answers needed to succeed. At the local level, AIRW collaborates with key partners like the Indiana Finance Authority (IFA). This partnership has engaged the Alliance in programs like the lead service line inventory, and the IFA regularly features Alliance speakers at IFA Regional Meetings to inform and educate water utility operators. A key aspect of AIRW's function is uniting the voices of rural utilities, emphasizing that "the impact of one voice pales in comparison to the Collective Strength of many voices", facilitating a powerful coalition.

The Alliance has long been part of the fabric of the Indiana water resources community, and I am pleased to nominate them for the 2025 Outstanding Achievement Award in the Private Sector from the Indiana Water Resources Association.

STUDENT PRESENTATION AWARD WINNERS – Abstracts

BEST STUDENT PRESENTATION (ORAL)	Estimating Biogeochemical State of Inland Water Bodies with Remote Sensed Parameters and Machine Learning Methods	Isaac Bradford* Purdue University
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Authors: *Isaac Bradford, Nileshwari Yewle, Nhu Hoang Van Pham, Sheng Tan, Cary Troy, Melba Crawford, Zhi Zhou, Keith Cherkauer

Abstract:

Cyanobacterial harmful algal blooms (cyanoHABs) pose risks to human and animal health and can disrupt the use of inland freshwater for consumption and recreation. Monitoring these blooms presents significant challenges, but chlorophyll-a (chl-a) is a widely recognized water quality indicator that often occurs with cyanobacterial presence. In this stage of the research, data collected from 4 inland water bodies in north-central Indiana in 2023 and 2024 were analyzed. The study assessed biogeochemical state by measuring microcystin, nitrate, temperature, phosphate, turbidity, dissolved oxygen, conductivity, total solids, total organic carbon, and pH at the selected sites in accordance with Environmental Protection Agency (EPA) standards. Spectral reflectance is measured at each sample site using a handheld spectrometer, and satellite remote sensing imagery. Sample sites with Global Positioning System (GPS) and satellite imagery is clipped in a region around the boat sample location to allow for drift that occurred during the sample collection process. Most of the characteristics used to quantify the biogeochemical state of the water characteristics are not visible to multispectral sensors, so we incorporate supplementary environmental data including topography, land use, precipitation, wind speed and direction, air temperature and water level into our assessment. Linear regression and machine learning models are trained on a subset of the data collected over two years to identify remote sensing products and environmental metrics that are the best predictors of biogeochemical state on the dates of field observations. Results from data analysis and preliminary model development are presented, highlighting the parameters that are most predictive of the biogeochemical state of the water bodies. The compiled data and models will eventually be used to develop a predictive model of harmful algal bloom risk, incorporating optical properties, land use, and weather information.

BEST STUDENT PRESENTATION (POSTER)	Assessing Potential Water Stress from Increasing Technology on the Wabash River Basin	Ayomide G. Adepeju* Indiana University – Indianapolis
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Authors: * Ayomide G. Adepeju, Laura C. Bowling, and Keith A. Cherkauer

Abstract:

With the increasing demand for large volumes of water for industrial purposes such as microchip production and cooling for data centers, there is the potential for future water stress even in traditionally water-abundant areas. Groundwater exchange between subbasins is a plausible option to support water-intensive industries in regions where water is either scarce or insufficient to support increased local demand. The VIC Groundwater (VIC-GW) hydrologic model simulates the effect of groundwater storage and withdrawals on streamflow. Here the VICGW model is set up to simulate the Wabash River basin using historical climate forcing and water withdrawal data. The VIC-GW model is then used to quantify changes in groundwater and streamflow resulting from significant groundwater withdrawals and interbasin transfers within the Wabash River basin using scenarios for water transfers based on proposed and hypothetical development cases. Changes to water sustainability are quantified using the Water Stress Index (WSI) for both historical and future climate scenarios, to evaluate when transfers exceed local water availability and how future climate changes may affect when and where these thresholds are exceeded. This study is therefore crucial for improving the management of surface and groundwater resources in communities.

Past Award Recipients:

Charles H. Bechert Award:

1981 Oral Hert
1982 Dan Weirsmas
1984 Bill Andrews
1986 Bill Steen
1990 Dennis Stewart
1992 Jacque Delleur
1996 Jim Barnett
1998 John Simpson
2002 Tom Bruns
2004 Mark Reshkin
2006 Charlie Crawford
2007 Judith Beaty
2008 Jim Stewart
2009 Dennis Clark
2010 Jim Gammon
2011 John Craddock
2012 Dick Powell, Noel Krothe
2013 Henk Haitjema
2014 Les Arihood
2015 Greg Olyphant
2016 Manuela Johnson
2017 Dr. William G. Wilber
2018 Kathleen Fowler
2019 Martin Risch
2022 Jody Arthur
2023 Randy Bayless
2024 Scott Morlock
2024 Harold Templin
2025 Jeff Martin

Outstanding Achievement Awards:

Academic Sector:

2009 Lenore Tedesco
2010 Bill Jones
2011 Ron Turco
2012 Alan Johnson
2013 Sara Pryor
2014 Jane Frankenberger
2015 Manchester University Environmental Studies
2016 IUPUI Dept. of Journalism and Public Relation
2017 Bob Barr
2018 Venkatesh Merwade
2022 Linda Prokopy, Laura Esman
2023 Rod Williams
2025 Institute for a Sustainable Future

Private Sector:

2009 Siavash Beik
2010 The Nature Conservancy
2011 Jill Hoffmann & Lyn Crighton
2012 Robert Armstrong
2013 Jack Wittman
2014 Sara Peel
2015 Acres Land Trust
2016 Todd Feenstra
2017 Mike Starkey & Jack Maloney
2018 David Hillman
2019 Justin Schneider
2022 Maggie Sullivan
2023 Indra Frank
2025 Alliance of Indiana Rural Water

Public Sector:

2009 Dave Knipe
2010 Rod Renkenberger
2011 IDNR, Division of Water
2012 Johnson Co. WHP/LPT
2013 Sally Letsinger
2014 Bill Guertal
2015 Jane Hardisty
2016 James Sullivan
2017 Shannon Zezula
2018 Indiana Finance Authority
2019 Hamilton Co. Tourism and the City of Indpls.
2022 Odetta Cadwell
2023 Dave Knipe
2025 Groundwater Section, Indiana Department of Environmental Management

Thanks to all who submitted nominations and congratulations to the 2025 recipients.

Sincerely,
Mark Basch
IWRA Awards Committee