

Members and Friends of the Indiana Water Resources Association,

The Indiana Water Resources Association (IWRA) is pleased to announce the following 2023 award winners that were recognized during the 42nd Annual Water-Resources Symposium Awards Banquet held at the Purdue University Douch Alumni Center in West Lafayette on June 7, 2023:

William G. Wilber – John S. Zogorski Leadership Award

Andrew Pappas; IDEM, Office of Land Quality - 2023 IWRA President

Charles H. Bechert Award

Randy Bayless; USGS, Ohio-Kentucky-Indiana Water Science Center - For his dedicated career of scientific work that has significantly advanced the understanding of water resources in Indiana.

Outstanding Achievement Awards

Academic Sector: Dr. Rod William; Professor, Purdue University – for his formation of the “Help the Hellbender” partnership, a globally recognized model for freshwater conservation at the species level.

Private Sector: Dr. Indra Frank; Hoosier Environmental Council – for her tireless work advocating for safe disposal of coal ash and protection of our water resources.

Public Sector: Dave Knipe; Director, DNR Division of Water – for the creation of a statewide floodplain layer for Indiana.

Student Poster and Oral Presentation Awards

1st Place Poster (\$200 Award); Karthik B. Shivaram; Purdue University – for the poster on “Algal-bacterial consortia to treat high-strength shell egg processing wastewater”.

1st Place Oral Presentation (\$200 Award); Dongseok Yang; Purdue University – for the presentation on “Eco-intensification using recycled drainage water for fertigation”.

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

Randy Bayless: Randy received a B.S. from Purdue University with a geology major and mathematics minor, a M.S. from Indiana University with a major in hydrogeology and a minor in numerical methods, and earned a Ph.D. from Indiana University with a major in hydrogeology and a minor in geochemistry. His dissertation used hydraulic and geochemical modeling to determine that iron-sulfate minerals were responsible for acute acid-mine drainage events. Randy is an author or co-author of over 40 publications on the water resources of Indiana and our region. Randy has been with the U.S. Geological Survey and the Indiana Office of the Ohio Kentucky Indiana Water Science Center since 1989, beginning his career with the USGS as a Hydrologist and later as a Research Hydrologist and Groundwater Specialist. During this time, he has worked on a diverse range of projects related to water resources. His expertise in karst hydrology, isotope geochemistry, horizontal borehole flow meter technologies, pesticide and nutrient fate, unsaturated zone instrumentation and transport modeling, surface and borehole geophysics, and wetland hydrology is invaluable to the scientific community. Randy has also served as an Adjunct Assistant Professor at Indiana University - Purdue University Indianapolis, demonstrating his commitment to sharing his knowledge and expertise with the next generation of water resources professionals. Dr. Bayless taught Sally Letsinger’s first undergraduate hydrology course, instructing the class from the first day that “water [in Indiana] flows downhill, not just south.” It is remarkable how often that reminder has been used in Sally’s career over the years. One of Randy’s notable projects includes his work on the Glacial Aquifer System. As part of that study, in addition to developing collaborations with governmental entities in 25 states and two adjacent provinces of Canada to share their water well driller records, he and Les Arihood led a team of scientists to compile the records, and to develop, refine, and apply scripting programs to standardize differing terminology and database practices used by each governmental entity. led the USGS to prepare a new, extensive dataset and map of the hydrogeologic properties of glacial deposits in the United States. This research will serve as the foundation for future regional studies of hydrogeologic processes in the glaciated United States by government, academia, and industry. Another project included his work on horizontal borehole flowmeters, where he evaluated multiple technologies for measuring the rate and direction of groundwater flow and transport of contaminants. His research in this area has contributed significantly to the understanding of environmental and hydrologic conditions that are best suited for each tool, and his testing in both field settings across the US (New Hampshire to California) and laboratory aquifer simulators has provided valuable data for the scientific community with additional work to come in developing methods for deploying technologies for long periods and creating interfaces that provide flow data in near real time. Randy is also currently contributing to research on the monitoring of nutrients associated with groundwater and surface-water interactions within the USGS Next Generation Observing Systems (NGWOS) program in the Kankakee River near Davis, IN. His long-term service to the Indiana Water Monitoring Council and the Council’s Groundwater Focus Committee (which Randy founded) has enabled and enhanced

links among scientists and hydrologic professionals in Indiana that have furthered long-term understanding of the State's water resources. Randy's career in hydrology has been one of passion and commitment to all water resources, as evidenced by his continued role in producing the Indiana Water Summary from 2017 through this year. The groundwater professionals in Indiana especially acknowledge his leadership, work, and service to the Groundwater Focus Committee, which has earned him the high esteem and respect of his water-resource colleagues.

Outstanding Achievement Awards

Dr. Rod Williams (*Academic Sector*): Rod Williams is a Purdue University herpetologist who has been enamored with hellbenders since his early days growing up in Clark County, Indiana. Rod is the Assistant Provost for Engagement with over 20 years of experience teaching appreciation for Indiana's herpetofauna, most notably the fully aquatic hellbender salamander. Recognizing the need for an "all-hands-on-deck" approach, in 2012, Rod formed the *Help the Hellbender* partnership, a globally recognized model for freshwater conservation at the species level.

In the past decade this unique public-private partnership, which includes private landowners on the Blue River, has provided hellbender programming to adults and students in the Blue River watershed, attracted four Indiana zoos to rear juvenile hellbenders for release in the Blue River, contributed to hellbender research with 28 publications, augmented 485 hellbenders to the Blue River population and secured over 2 million dollars to aid landowners in the watershed with more conservation dollars targeting soil and water quality. Formed to not only recover North America's largest salamander to the Blue River and other Ohio River tributary streams, but also to improve habitat conditions for an expanded juvenile population, the partnership is successful due to Rod's enthusiasm and mastery at revealing each partner's distinct contribution. Rod's impact through *Help the Hellbender* is best characterized by the empowerment and organization the partnership has enabled. *Help the Hellbender* rears hundreds of hellbenders for eventual release into the wild and educates the public through various social media platforms and K-12 outreach. The Columbian Park, Fort Wayne Children's, Indianapolis and Mesker Park zoos all display hellbenders and interpret their plight in Indiana, including education on water quality improvement across the state. They also raise hundreds of hellbenders for release into the wild. Indiana agency staff from the Departments of Environmental Management and Natural Resources direct their support to sampling and funding to the Blue River, while the Natural Resource Conservation Service provides additional dollars to the Blue River watershed through the Regional Conservation Partnership Program (RCPP). Local Soil and Water Conservation Districts use the hellbender as an outreach tool for private landowners. The Nature Conservancy partners to improve in-stream habitat through dam removal, support for hiring technical assistance, and land conservation within the watershed. Individual landowners provide river access, Cave Country Canoes provides logistical support to hellbender release days and O'Bannon Woods State Park hosts a Hellbender Hustle 5K to raise local awareness of this special animal. All efforts elevate the status of hellbenders and lead to curiosity and support for how to improve freshwater habitat for these amazing creatures.

Dr. Indra Frank (*Private Sector*): Indra has dedicated her life to environmental activism, using her scientific background to understand complex issues and how proposed legislation will affect these issues, especially how the environment affects human health. Indra has been active and vocal in many issues in Indiana in the past years, but especially in bringing human health concerns about coal ash disposal in the state. Her work has been vital in highlighting the risks posed by coal ash to water resources in Indiana, which has more coal ash impoundments than any other state in the nation. Indra has a bachelors in biochemistry from Pomona College, an MD from Johns Hopkins University, and a masters in public health from Indiana University. Her first career was as a physician specializing in pathology; but in 2004, she shifted her focus to environmental health, working in environmental health programs, education, and policy with Indiana-based nonprofit organizations. In 2022, the Hoosier Environmental Council released a report on the risk of coal ash to water. The report showed that all but one of Indiana's monitored coal ash sites have contaminated the groundwater, rendering it unfit for use as drinking water. Most of the 15 sites exceed drinking water limits for a wide range of metals and contaminant by many-fold. Indra's tireless work in advocating for safe disposal of coal ash and protecting water resources has been crucial. She has been instrumental in raising awareness of the issue and pushing for safer methods of disposal. Her advocacy has brought about positive change in other states, such as North Carolina, South Carolina, and Virginia, where coal ash is being moved to lined landfills or recycled. We, as Indiana citizens, are so fortunate to have a local advocate, with an incredible history of service to us all.

Dave Knipe (*Public Sector*): Dave has overseen a multi-year project to create a statewide floodplain data layer (spatial data and maps) for Indiana. This project – this outstanding achievement – is a testament to his hard work, expertise, and dedication to floodplain management, which is key to the safety of the citizens of Indiana. In the wise management of floodplains, it is often necessary to know the elevation and extent of the regulatory floods (including the base flood) to inform and guide future development and mitigate existing flood threats. While Flood Insurance Rate Maps (FIRMs) published by FEMA are traditionally used for floodplain management, these maps are incomplete in rural and outlying areas. Therefore, the Division of Water, under Dave's leadership, has undertaken the creation of a statewide data layer that provides detailed, model-backed floodplain information for every major stream in Indiana, modeling and mapping over 18,000 miles of stream. Using many detailed data sources developed by the State of Indiana (LiDAR and NHD especially), the Division created a semi-automated process where staff create a full hydrologic and hydraulic analysis of stream reaches using the USGS Streamstats program, the U. S. Army Corps of Engineers HEC-RAS hydraulic modeling

program, and spatial software tools and scripts. The results for each stream reach are full floodplain limits, a mapped floodway, depth grids for 5 return intervals, Flood Elevation Points relating the Base Flood Elevation every 50 feet along the stream, and the full modeling input and outputs for both the hydraulic models and the geospatial files. The floodplain information is then being incorporated into a statewide data layer (the "Best Available Flood Hazard Area" layer), that integrates the new floodplain information with the FIRMS, creating the most up-to-date layer for floodplain management. Additional work has extended to viewing and distribution of this data layer through the Indiana Floodplain Information Portal for widespread and standardized application across the state. Dave's leadership, knowledge, and hard work have been essential to the success of this project. He has led a team of dedicated professionals and has been instrumental in creating an innovative and efficient process that will benefit the people of Indiana for years to come. Dave's expertise and commitment to the project have been an inspiration to everyone involved. Dave's ability to communicate complex technical concepts in a way that is accessible to everyone has been invaluable in this project.

Past Award Recipients:

Charles H. Bechert Award:

1981 Oral Hert
1982 Dan Weirsma
1984 Bill Andrews
1986 Bill Steen
1990 Dennis Stewart
1992 Jacque Delleur
1996 Jim Barnett
1998 John Simpson
2002 Tom Bruns
2004 Mark Reskin
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. Wilbur
2018 Kathleen Fowler
2019 Martin Risch
2022 Jody Arthur

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 Dr. Linda Prokopy, Laura Esman

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

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

Thanks to all who submitted nominations and congratulations to the 2023 recipients.

Sincerely,
Mark Basch
IWRA Awards Committee