



## 1) Tomas Hook

<https://web.ics.purdue.edu/~thook/>

**Research Category: Ecological impacts of pollutants, emerging contaminants and degraded water quality**

Dr. Tomas Höök is a Professor of Fisheries and Aquatic Sciences and the Director of the Illinois-Indiana Sea Grant College Program.

The Höök lab at Purdue University (<https://web.ics.purdue.edu/~thook/>) studies the environmental structuring of freshwater fish populations and communities. In particular, recent projects have investigated population- and community-level impacts of diverse stressors including: climate change, fisheries harvest, nutrient loading, invasive species and microplastic pollution. Research approaches include controlled laboratory and mesocosm experiments, field surveys, retrospective statistical analyses of extant datasets, and simulation modeling.

The Illinois-Indiana Sea Grant (IISG) College Program (<https://iiseagrant.org/>) aims to use the best available science to inform the management of the Great Lakes and the communities that depend on the Earth's largest surface freshwater resource. To this end, IISG manages applied research competitions, organizes education activities and undertakes a breadth of outreach and extension programming.

## 2) Chad Jafvert

<https://engineering.purdue.edu/~jafvert/>

**Research Category: Methods for measuring water quality - water quality from point-of-use drinking water treatment technologies.**

Dr. Chad Jafvert is the Lyles Family Professor of Civil Engineering at Purdue University and holds a joint appointment in the Division of Environmental and Ecological Engineering. His primary research interests are the chemical and physicochemical fate processes of anthropogenic (man-made) substances in natural and engineered environments. He has published widely on octanol-water, soil-water and sediment-water phase distribution processes of organic chemicals, including organic cations and anions. His recent interests include: remediation strategies for contaminated sediments; aquatic photochemistry of pollutants including carbon-based nanomaterials and flame-retardant compounds; real-time continuous water quality monitoring, and drinking water treatment in rural areas of developing countries. Regarding the latter, current efforts are underway to develop drinking water monitoring strategies using simple colorimetric methods for chlorine, fluoride, arsenic species, and divalent heavy metals. Additional work is on metal ion removal through biochar filters.

### 3) Suranjan Panigrahi

<https://polytechnic.purdue.edu/profile/spanigr>

#### **Research Category: Methods for measuring water quality, Health impacts of water quality**

Dr. Suranjan Panigrahi is a professor in the department of Electrical and Computer Engineering Technology at Purdue University. He has 27 years of comprehensive experience in research, teaching and outreach. Dr. Panigrahi 's research focuses on the development and application of advanced information and sensor technologies for biological applications including agricultural and food systems. He has cross-disciplinary training and expertise in engineering, biological systems, sensors, electronics, information technologies, and management. He has successfully developed multiple sensor and information technology-based systems for different biological, agricultural, and food applications.

He established an interdisciplinary lab "Integrated Sensing and Smarty Solutions lab" at Purdue and works with faculty, staff, and students from multiple departments. He is also a resident-faculty at the Purdue's Birck Nano center, an interdisciplinary research facility for fundamental as well as applied research related to micro, nano and other emerging technologies and applications.

Adopting a systems-based approach, he and his group created a framework "SWADIN" (Sustainable Solution With Appropriate Technological Development and Innovation" for solving real-world societal issues while operating in a solution-domain, appropriate for a given location or region. Within this SWADIN framework, one of his group's research thrust focuses on creating technological innovations for water-linked health and wellness that affect people (including elderly populations, mothers and children) in different countries (including India). In 2013, a bilateral workshop was conducted in Kharagpur, India in collaboration with IIT Kharagpur. Participants from UNICEF, NGO, Government organization also participated (<https://docs.lib.purdue.edu/swadin/2013/>).

His group is now working on a project related to developing sensors for heavy metal contamination in water, soil and food system in Peru. For the WARI initiative, we are interested to work with the attendee (s) to develop collaborative solution (involving sensor and information technology) on water related problem (s) that is of significance to both India and USA (including the larger framework of global water issues).

### 4) Dharmendra Saraswat

<https://dad.saraswat.rcac.purdue.edu/>

#### **Research Category: Remote sensing applications for monitoring water quantity and quality**

Dr. Dharmendra Saraswat is an associate professor in the Agricultural and Biological Engineering Department at Purdue University. He received a bachelor's degree in agricultural engineering from the University of Allahabad; a master's degree in agricultural engineering from the Indian Agricultural Research Institute (IARI), New Delhi and a Ph.D. degree in food, agricultural and biological Engineering from The Ohio State University.

Prior to coming to Purdue, Dr. Saraswat was a faculty member at the University of Arkansas, a scientist at the Indian Council of Agricultural Research, New Delhi, India and an assistant professor at Chandra Shekhar Azad University of Agriculture & Technology, Kanpur, India.

Dr. Saraswat's research focus is on using information, communication and sensing technologies (ICSTs) for addressing challenges in plant production (field and nursery crops ) and management of

natural resources. He accomplishes research goals through innovative application of ICSTs and multi-disciplinary collaborations with colleagues within and outside Purdue University.

Dr. Saraswat's overall research and extension efforts have been recognized both nationally and internationally on a sustained basis. He has received several awards including Fellow of Indian Society of Agricultural Engineers (2014), John W. White Outstanding Extension State Faculty Award (2014), American Society of Agricultural and Biological Engineers (ASABE) Standards Award (2018), ASABE Educational Aids Blue Ribbon Award (2017, 2015 and 2013), ASABE Superior Paper Award (2012), American Society of Horticultural Sciences (ASHS) Outstanding App Award (2016), Southern Region-American Society of Horticultural Sciences Blue Ribbon Extension Communication Award (2016 and 2012), Excellence in Remote Sensing and Precision Agriculture Award from National Association of County Agricultural Agents(2013), Early Career Award (2011) and Innovation Award (2011) from the University of Arkansas.

#### **5) Maria S. Sepúlveda**

<https://www.purdue.edu/fnr/sites/sepulveda/>

#### **Research Category: Ecological and human health impacts of pollutants and emerging contaminants**

Dr. Maria S. Sepúlveda is Professor of Ecotoxicology and Aquatic Animal Health at Purdue University. She earned a Doctorate in Veterinary Medicine degree from Universidad de Chile, Santiago, Chile; her Master of Science degree from University of Florida, Gainesville, Florida (Wildlife Ecology); and her doctorate from the same University (Veterinary Sciences). Dr. Sepúlveda's main area of research is ecotoxicology. Over the last 20 years, she has conducted extensive research evaluating the sublethal effects of a wide-range of environmental contaminants on the physiology of numerous aquatic species. Dr. Sepúlveda's main area of interest involves studying the health effects of environmental contaminants in populations of free-ranging fish and wildlife. Specifically, Dr. Sepúlveda's research has focused on understanding the effects of pollutants on reproduction and early life-stage development. Besides examining whole animal and tissue-level responses to environmental contaminants, Dr. Sepúlveda also investigates the effects of chemicals at the sub-cellular and molecular levels. She has published over 130 refereed publications, authored 9 books chapters, and presented her research in multiple invited lectures and presentations at national and international conferences. She has advised 16 graduate students (11 Ph.D.) and is currently advising 2 Ph.D. and 2 M.S. students.