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INSTITUTE FOR WATER AND HEALTH

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ABOUT IWH

Clean water is a necessity for healthy communities, dynamic economies, and a sustainable environment. Increasing water demand, aging infrastructure, and rising sea levels challenge communities to adopt long-term solutions for current and future environmental changes. The IWH supports regional and global communities by providing scientific expertise and technology where and when it is needed most.

The Institute for Water and Health (IWH) at Georgia Southern University is a hub for research, education, and community engagement. The Environmental Research and Services Laboratory, is located in Savannah and launched in March 2024, serves the region with advanced analytical capabilities to support water and environmental health. The Water Academy, IWH's education unit, is opening its doors in April 2026, and will start offering courses and certificate programs targeted for K-12 to incoming and existing water professionals in partnership with our industry, state, and federal collaborators.

Our core team includes experts in water science and education who deliver cutting edge research tools to meet the needs of environmental agencies, municipalities, community-based organizations, and industry partners. The Institute is also home to more than 30 affiliated faculty from over 10 academic disciplines. These faculty members, from environmental sciences, public health, engineering, education, and the humanities, work together to advance water sciences and education aimed at solving some of the world's most pressing challenges.



WELCOME MESSAGE

Asli Aslan, PhD, MSc

Founding Director of IWH and Professor of Environmental Health Sciences

Welcome to the Institute for Water and Health (IWH) at Georgia Southern University! We invite you to explore the impactful work of our Institute, dedicated to addressing the critical challenges of water security and safety. From cutting-edge water quality diagnostics to hydrological and health risk modeling, our multidisciplinary team delivers science-based solutions tailored to local, regional, and global needs.

Our flagship initiative, Safe Water Together, funded by the United States Congress and the National Oceanic and Atmospheric Administration (NOAA), empowers data-driven decision-making to advance water resource management policies in Georgia. The Environmental Research and Services Facility, located in Savannah and equipped with advanced instrumentation, provides high-precision analytical services for municipalities, environmental agencies, academia, and the public.

Our award-winning education team designs innovative programs at our new Water Academy to cultivate a skilled, informed water workforce ensuring society is prepared to navigate and adapt to an ever-changing environment.

Your support and engagement are vital to achieving our shared vision. Together, we can build a future where every community has access to safe, reliable water.

Let's achieve **Safe Water. Together.**

www.georgiasouthern.edu/iwh

VISION & MISSION

Vision

To be a global leader in advancing safe water, environmental sustainability, and community resilience through science, innovation, and collaboration.

Mission

The Institute for Water and Health (IWH) delivers scientific and technological solutions to address critical water challenges by integrating research and education. We foster partnerships across academia, industry, government, and nonprofits to drive sustainable development, strengthen environmental resilience, and support economic growth. Through our work, we empower the next generation of water professionals to meet global demands with innovation and impact.



“ ACCESS TO SAFE WATER IS A GLOBAL CHALLENGE. IT UNLOCKS ECONOMIC DEVELOPMENT, IMPROVES HEALTH, AND PROVIDES OPPORTUNITIES SO EVERYONE CAN HAVE A QUALITY LIFE. ”

-DR. ASLI ASLAN, IWH DIRECTOR

OUR STORY



Ribbon cutting ceremony (L to R): Dr. Asli Aslan, President Dr. Kyle Marrero, Representative Buddy Carter, Victoria Clower, and Dr. Annalee Ashley.

**2022
&
2023**

IWH was officially established as an institute under the leadership of President Kyle Marrero in 2022. Renovations of the previously known “Georgia Bureau of Investigation Criminal Laboratories” started that year. The first staff members were hired, key departmental setup processes and major instrumentation acquisition were completed. Marketing and promotional materials were developed, over 6,000 people were reached through outreach activities, and formal introductions were made to over 60 key stakeholders.

2024

In March 2024, the IWH Environmental Research and Services Laboratory (ERSL) celebrated its Grand Opening with over 70 guests, including U.S. Congressman Buddy Carter and staff from Senators Ossoff and Warnock offices. Same year, the Safe Water Together Program was awarded with a \$2 million in congressional funding. IWH affiliates and staff also successfully secured an additional \$3.6 million in external funding from the National Science Foundation, National Academies of Sciences, Engineering, and Medicine, and the Partnership for Innovation. To support these growing initiatives, a laboratory manager, and a project manager were hired.

2025

The laboratory initiated a national accreditation process for its services. A hydrologist, a post-doctoral research associate, and a statistician were hired to support ongoing projects. In April, IWH was awarded a new \$300,000 grant from the Georgia Environmental Protection Division to support the development of new water quality standards for the state of Georgia. In 2025, the IWH team also started to expand its global research footprint. Since then, IWH has been supporting six affiliated faculty members and eight students who are currently engaged in international projects in Brazil, Honduras, Ghana, and Türkiye.



Our team has years of experience in environmental research, computational analysis, data visualization, and communication to create products that are easily interpreted by the targeted audience for the maximum impact.

Environmental Testing

Our state-of-the-art laboratory is one of its kind in Southeast Georgia and offers services in drinking water, ambient water, storm water, wastewater, river sediments, beach sand, and soil for over 40 parameters, including physical, chemical, and microbiological analytes.

Modeling, Risk Assessment, and Data Visualization

Our hydrology team offers unique decision-making tools that combine hydrological assessments, contaminant fate and transport modeling, and quantitative microbial risk assessment. These system-based approaches help better understand complex environmental problems and assist with developing targeted solutions through user-friendly visualization tools.

Community Based Participatory Research

Our expertise allows the IWH to investigate the human cost of complex environmental issues through community-based research integrating public health education and promotion tools. Through surveys, interviews, and focus groups we identify needs and design targeted interventions for localized issues. From decentralized water and wastewater systems to identifying sources of non-point source pollution, these tools help design best water management tools, supporting regional policies.

Water Academy

Our informal educational activities span from citizen science training to teacher professional development. The Water Academy, opening in 2026, will offer courses and certificate programs designed for both incoming and current water professionals, as well as summer educational programs for K-12 students. The goal of this initiative is to strengthen the water sciences workforce by fostering interest from an early age and supporting in-service professionals through exposure to modern concepts and practices.

OUR PROJECTS



Safe Water Together (SWT)

Funding Agency: US Congress and National Oceanic and Atmospheric Administration

Safe Water Together (SWT) is a research and community education initiative designed to support the long-term sustainability of water resources across Coastal Georgia. In response to growing pressures from sea-level rise, economic growth, and aging water infrastructure, this program equips communities and decision-makers with real-time water quality data, source tracking tools, and regional monitoring networks. By integrating nature-based solutions and advanced monitoring technologies, SWT promotes cost-effective strategies to protect drinking water, reduce infrastructure burdens, and support continued economic development in sectors such as tourism, agriculture, and the ports. It aims to enhance regional workforce development through student training and applied research that aligns with Georgia's economic and environmental priorities.

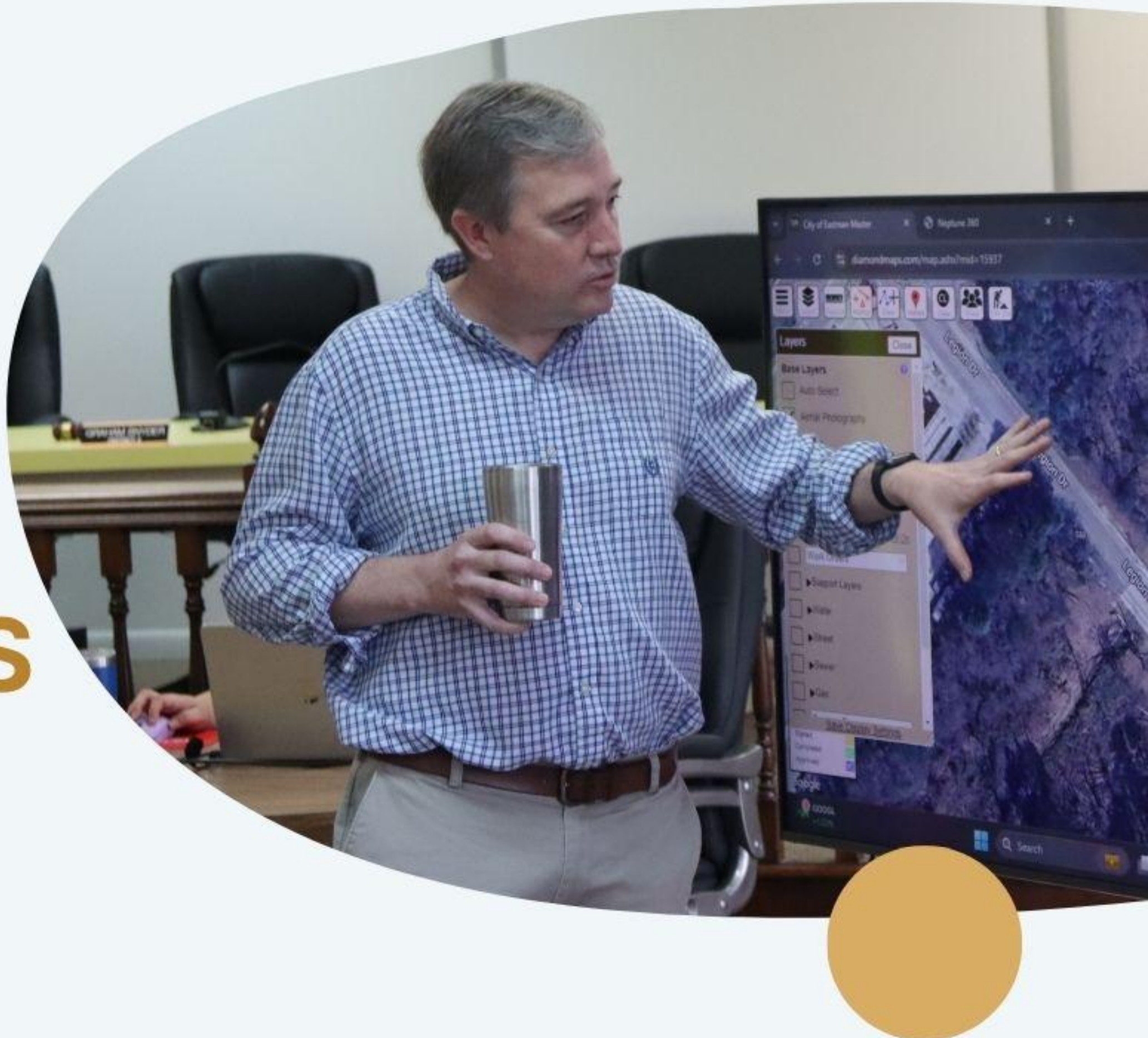
Characterization of Blackwater Systems in Georgia

Funding Agency: Georgia Environmental Protection Division

This project focuses on understanding and protecting blackwater systems (BWS) in Georgia. The project aims to define scientifically defensible water quality criteria, especially for pH and dissolved oxygen (DO) to better reflect natural conditions and protect aquatic life. Key activities include compiling and analyzing existing water quality and biological data, conducting Geographical Information Systems-based watershed characterizations, performing targeted field sampling to address data gaps, and applying advanced statistical and machine learning techniques to understand ecological processes. In partnership with the Georgia Environmental Protection Division, the IWH scientists are developing brand new water quality standards for the State of Georgia. The outcomes will improve non-point source pollution management across the state.

Photo: Victor Obi, IWH Hydrologist and Jaya Johnson, student assistant in the field collecting data.

OUR PROJECTS



Developing pathways for the next generation water stewards in Marion, AL

Funding Agency: Alabama Power & Partnership for Innovation

Nationwide, community water systems are managed by specialized professionals to ensure safe water every time we turn on the tap. However, about 50% of water operators working at these utilities will retire in the next decade, and only 10% are expected to be replaced. Training the next generation of water operators and developing leaders for rural water systems is a matter of national security. The IWH is committed to launching a regional program to equip future water managers with the necessary skills to ensure safe water. This pilot project will lay the foundation for this goal and aims to expand the program throughout the Southeastern United States.

RaMP: Mentoring and Research Opportunities for Careers in Coastal Science

Funding Agency: National Science Foundation

The MROC₂S program led by Dr. Colón-Gaud brings together a network of scientists, educators, and experts from various sectors to support participants from groups traditionally underrepresented in Science, Technology, Engineering, and Math. In addition, it trains individuals with limited research experience in a cohort setting to develop the next generation of natural resource professionals. The goal is to provide year-round mentoring, professional development, and multiple research training opportunities in natural resource science for postbaccalaureate participants. The IWH team in this project as a co-principal investigator, provides network partners contribute to a common scientific theme that centers on the restoration, conservation, and management of natural resources in the Atlantic Coastal Plain and Gulf Coast.

Photo: Dr. Spencer Barron, City Manager of Eastman GA and a Georgia Southern graduate, showcasing the improvements he made in lead and copper pipes in his rural community.



Developing Sustainable Practices for co-Digestion of Food Waste and Paper Mill Sludge Leveraging Existing Anaerobic Digestion Infrastructure

Funding Agency: United States Environmental Protection Agency

This project is a feasibility study to advance the understanding of how existing anaerobic digestion (AD) capacity at pulp and paper mills can be sustainably leveraged to treat food waste from university campuses. In anaerobic digestion, microbes break down (digest) organic matter in waste from animals, food, and wastewater without oxygen. This occurs in a small, sealed container called a reactor, specifically designed for the type of waste used. The complex microbe community that lives in the reactor digests industrial waste and creates biogas that can be used for energy. Led by IWH affiliate Dr. Rowles at the College of Engineering, this project aims to reduce food waste going into landfills by feeding ADs with the food waste created at university campuses. IWH team provides laboratory and environmental microbiology expertise in this project to advance the AD systems. These advanced ADs will improve industrial wastewater treatment capacity, protecting our water environment.

Suwannee Watershed Assessment and Monitoring Project to Gain Understanding of Local Flow (SWAMP 2 GULF)

Funding Agency: National Academies of Sciences, Engineering, and Medicine

Led by IWH affiliate Dr. Lacey Huffling from the College of Education, the SWAMP 2 GULF is an immersive experiential professional development (PD) for Florida middle school science teachers to monitor local watershed conditions and examine the health and resilience of local ecosystems along the Gulf through place-based research service learning. Teachers use integrated place-based citizen science projects and create inquiry-based lessons to increase students' understanding of local watersheds in the Gulf region to support Gulf Research Programming. IWH staff provides support for community engaged research activity development and implementation in this program.

Photo: Swamp2Gulf teacher participants led by Dr. Lacey Huffling and supported by Mary Thaler, IWH Project Manager, on a boat in the Okefenokee Swamp learning about ecology and water quality in the swamp.



Georgia Smart Communities: Safe Water Together at Glynn County

Funding Agency: Partnership for Innovation

Glynn County, located on Georgia's southeastern coastline, includes the beach communities of Jekyll Island, St. Simons Island, and Sea Island, with the county seat in the City of Brunswick. This area is home to four Superfund sites. During the COVID-19 pandemic, County Commissioner Allen Booker approached the IWH with a concern: he had observed an increase in subsistence fishing in Terry Creek, a waterway known for its high levels of pollution. Despite posted fishing advisories and ongoing monitoring by the EPA many residents continued to fish in the area. In response, IWH partnered with the local nonprofit organization Rebuilding Glynn County to establish a community based research and educational program. Twelve local pastors underwent extensive training in water quality testing and became certified through Georgia's Adopt-A-Stream Volunteer Program. IWH staff oversaw establishing a new water quality laboratory owned by the community. Today, these community researchers continue to collaborate with the IWH on new projects, maintaining a strong and lasting partnership. This project won the Private-Public Partnership Award in 2025; a national competition that recognizes partnerships that address global challenges.

A Pilot Web-based Water Dashboard for Coastal Georgia Regional Water Planning

Funding Agency: Georgia Environmental Protection Division

This interactive water resource data tool, presents a snapshot of historical and current hydrologic conditions including groundwater levels in Coastal Georgia. The dashboard developed by IWH staff and Environmental Protection Division and the Coastal Regional Water Planning Council contributed expertise and advised on the design of the dashboard. Our diverse set of stakeholders prioritized ease of use, agile data selection, and clear communication by targeting a regional approach and screening groundwater and surface water availability. IWH is currently in the process of evaluating the effectiveness of historical water policies, and assessing the potential challenges for broader-scale implementation.

Photo: Mr. Terry Walker, IWH's community researcher conducting water test at Brunswick, GA.

IWH GOES GLOBAL



Photo: Dr. David Azanu, a geoscientist at the Kwame Nkrumah University of Science and Technology is walking to a mining site to collect water and soil samples.

New Projects through International Partnerships

This year, IWH initiated new international research projects from South America, to West Africa to the Mediterranean. These projects are seeds for long term partnerships that will eventually develop into regional programs. Our affiliated faculty and students -whom mostly are visiting a foreign country- are working towards making impact on lives beyond Georgia borders.



Photo: Dr. Sérgio Henrique Godinho Silva, a soil scientist and his student at the KFederal University of Lavras is collecting water samples from runoff sites to test a new rapid water quality method.

In partnership with scientists from the Federal University of Lavras in Brazil, our team is investigating methods to expand this portable device's use in areas for water quality. A research paper was published in Water Research X in February 2026 and a patent is currently pending. This method is groundbreaking for rapid testing of heavy metals in water, allowing for more informed decisions in heavily contaminated areas where people live.



Photo: Taryn Black, IWH student researcher is using a rapid water test method at the field, showing mothers how much bacteria are there in their water.

During Spring Break 2025, the IWH team visited Intibucá, Honduras, to conduct a Water, Sanitation, and Hygiene (WASH) study. IWH affiliate Dr. Ana Palacios from College of Public Health, along with two students investigated contamination levels in pilas; unprotected outdoor water containers commonly used for household activities such as drinking and cooking. In partnership with the nonprofit organization Shoulder to Shoulder, the researchers trained women in the community on how to use bleach to safely treat water.



Photo: Portable X-Ray Florescence instrument, testing soil and water samples at a local school close to gold mines in Kumasi, Ghana.

Soar Beyond...

Global research at IWH is just beginning. In addition to ongoing projects in Honduras, Ghana, and Brazil, several new initiatives are currently in the planning phase. In 2026, we will expand our research activities to include Portugal and Türkiye. We are setting the bar high to broaden our international impact, with the ultimate vision of establishing IWH as a globally recognized research and education unit of Georgia Southern University.



Photo:View of agricultural lands nearby marine protected areas in Mugla, Türkiye.

In partnership with scientists Dr. Nedim Ozdemir and Dr. Ahmet Demirak from Mugla University, Türkiye, our team is investigating new water quality indexes for non-point source pollution caused by agricultural activities in marine protected areas of Southwest Türkiye. A team of eight scientists from both countries are currently gearing up to initiate a new research project in 2026. A memorandum of understanding between two universities are currently in progress for future visiting researcher exchange programs as well.



Photo: Georgia Southern student Taylor Brennen and KNUST student Prince Nana Opoku are assessing a water barrel used to store water at a household in Kumasi, Ghana.

In partnership with scientists from the Kwame Nkrumah University of Science and Technology (KNUST), Ghana, our team is exploring health risk factors of heavy metal exposure through water and soil among mining communities. In four days of intense field work, over 350 health assessment surveys, and 150 water and soil samples were analyzed. IWH affiliates Drs. Bettye Apenteng, Sam Opoku, Eric Gato, David Weindorf, and Asli Aslan, along with a total of 17 students from Georgia Southern and KNUST submitted multiple research papers and grants proposals from this pilot project.

MEET THE TEAM



Dr. Asli Aslan
IWH Founding Director



Mary Thaler
Project Manager II



Dr. Whitley Stewart
Research Laboratory Manager



Victor Obi
Hydrologist

MEET THE TEAM



Dr. Victoria Clower
Postdoctoral Research Associate



Alyssa Archer, BSc
IWH Laboratory Technician



Jermaine Allen
Undergraduate Researcher



Jaya Johnson
Undergraduate Researcher



Hazel Quartermann, BSc
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OUR CONTACT



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