



Idaho Water Resources Research Institute

The Current

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Letter from the Director

“May you live in interesting times” is an English expression that purports to be a translation of an ancient Chinese curse. Regardless of its origin, the Fall of 2020 certainly counts as very interesting time in our history. Covid-19 has not abated during the summer months as was hoped, and Black lives continue to matter despite the fact that some in our country remain tone-deaf to the struggle. In spite of the times in which we live the Water Institute remains cautiously optimistic. As is evident from the articles in this newsletter, the Water Institute is making new connections, both on campus and off, and is preparing for the post-Covid-19 future.

With the new semester come new students, both undergraduates and graduates, and with them comes a sense of enthusiasm and positivity. In this issue we celebrate the accomplishments of two students in particular, Maddie Goebel and Camas Curran, both of which recently finished summer internships with the Water Institute. At the same time, we are also welcoming two new Water Institute Affiliates, Jaz Ammon and Riveraine Walters, into the program.

In addition to student recognition, this issue documents the beginning of the University of Idaho’s Presidential Sustainability Initiative, a transdisciplinary program that provides seed funding to faculty working within the realm of Water and Sustainability. The Water Institute is proud to be working in cooperation with the Office of Research and Economic Development on this initiative, and we will have more to say about the program as faculty research progresses.

We are living in interesting times, and while interesting can be defined as engrossing or compulsive, it can equally be described as fascinating and compelling. We will get through the pandemic, and the future just beyond does indeed look bright.

Alan Kolok, Director of the Water Institute

Editor's Note: The Water Institute was delighted to be work in conjunction with the WWAMI Medical Education Program to host a second-year medical student to conduct geospatial analysis of pediatric cancer in Idaho. The press release below was generated by the WWAMI Medical Education Program and is presented in its entirety.

Idaho WWAMI and IWRRI Form a Pesticide Partnership

by Lindsay Lodis, WWAMI Medical Education Program, University of Idaho

When second-year WWAMI Medical School student Camas Curran saw a summer research opportunity with the Idaho Water Resources Research Institute (IWRRI) that involved pediatric oncology – an area of medicine that does not appeal to her – she knew she had to apply. “I wanted to research something that was outside of my comfort – and interest – zone to help me become a well-rounded physician,” she said.

The experience provided Curran with an opportunity to sharpen her research skills and deepen her understanding of adverse environmental health outcomes. “Now that I have worked with IWRRI, there’s more of a personal connection to pediatric oncology. It’s more meaningful to me now than it was when I started,” she said.

IWRRI’s Pesticide and Pediatric Cancer Project

IWRRI, which is one of the nation’s 54 water research and technology centers, is working on the first comprehensive analysis of cancer incidence relative to environmental toxicity in the Mountain West Region. Curran, who grew up in Meridian and is considering a career as an orthopedic surgeon, helped IWRRI assess whether there is a correlation between pediatric cancer and agricultural pesticide use in Idaho. For the study, Curran cross-examined data from the Idaho Cancer Registry and the United States Geological Survey’s National Water-Quality Assessment Project on a county-by-county basis.

“Originally, I was going to focus on just the Snake River region, but I ended up examining the entire state,” Curran said.



IWRRRI's Director, Alan Kolok, welcomed the partnership between IWRRRI and WWAMI. He previously directed the Center for Environmental Health and Toxicology in the College of Public Health at the University of Nebraska Medical Center, where he saw firsthand how environmental health research can benefit from medical students' contributions.



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— Camas Curran, Idaho WWAMI medical student

"We tend to silo into work that we're most comfortable with, myself included," Kolok said. "But getting into trans-disciplinary research relative to adverse health outcomes is an exciting area of growth for the University of Idaho. Our university has incredible research capacity. To leverage it, we just need to get people talking to each other.

"Joseph Naveen, an IWRRRI post-doctoral fellow, recognized the value of Curran's medical training early in the project. "Camas is important to this research because she has medical knowledge that helps us look at the types of pediatric cancers we're seeing in our data through a new lens," he said.

An example of Camas's contribution to the team was her interpretation of IWRRRI's pediatric cancer datasets. In the datasets, which included children ages 0-19, an increase of epithelial cancers in individuals 15-19 years old was visible. This pattern was puzzling to IWRRRI but made sense to Curran as epithelial cancer is much more common in adults than children. "IWRRRI's dataset did not illustrate a unique problem to Idaho; rather, it substantiated a larger trend widely known in the medical community," she said.

Post-Analysis Plans

IWRRRI continues to identify links between pesticides and pediatric cancer in the Mountain West Region and hopes to test significant correlations to confirm whether there is causation. IWRRRI estimates their analysis can be completed by the end of next year, at which time they may be able to provide environmental management recommendations to state leadership to help protect public health.

As Curran heads into another demanding year of medical school, the IWRRRI research experience will help shape her approach to a career in health care. "We know that environmental exposure to toxins have adverse health effects, but it might not be the first thing that comes to mind when looking at a patient's symptomology," she said. "I don't need to be a water resources expert, but it's been fascinating to work with people who are so that we can share our perspectives with each other. I think this experience will stay with me throughout my medical career."



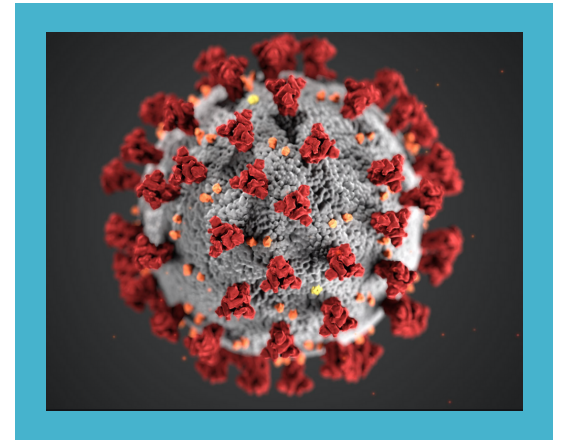
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— Alan Kolok, IWRRRI director

Water and Public Safety

By Alan Kolok

The novel coronavirus, SARS-CoV-2, was first identified in Wuhan, China in late 2019. The illness caused by this virus, or COVID-19, has spread exponentially since then, infecting tens of millions world-wide while destabilizing economies, as well as social and political stability. Closer to home, in Idaho and the United States, stay-in-place strategies were implemented in mid-March, with the hope that by Fall semester there might be some relief. That has not come to pass. While there is no silver lining to the Covid-19 pandemic, there are a few things I try to remember that steel my resolve, give me hope and keep me focused.



First, it helps to remember that, in many public health crises, water management has played a pivotal role. In 1854, for example, Dr. John Snow curtailed a vicious Cholera outbreak in the Soho region of London by disabling the Broad Street pump, thereby preventing the community from drinking contaminated water. Likewise, at the turn of the 20th century, Dengue fever was eliminated from the island of Cuba via stringent control of the *Aedes aegypti* mosquito. Water management was critical to mosquito control, and dengue was wiped off the island by draining stagnant waters where the insect bred. Water and public health are inexorably linked, as has always been so.

Second, it may be valuable to keep in mind that there is no evidence that water, either wastewater or untreated surface or ground water, is likely to be a vector for the transmission of Covid-19. The virus spreads from person to person in respiratory droplets released when an infected individual coughs, sneezes or otherwise exhales. While the virus is detectable in human wastes, there is no evidence that wastewater represents a significant source of infection.

Third, while viral particles in wastewater are not likely to be sources of infection, they can be used in public health reconnaissance. In fact, the national Water Resource Foundation is joining with other partners to evaluate current analytic methods to test for the genetic signal of Covid-19 in wastewater. They argue that surveillance of wastewater may have the potential to serve as an early detection tool relative to community health, which may save lives.

Finally, while water may not play a pivotal role in the fate, transport and spread of the virus, water is definitely part of the solution. Prior to the development of a vaccine, the best that we can do to aide health professionals is to maintain social distance, wear a mask and repeatedly wash our hands. Potable water saved lives back in Dr. John Snow's days in London, and it continues to do so today.

Without minimizing the significant impact that Covid-19 is having on all of us, I take comfort in the scientifically supported facts, including the heretofore mentioned interplay between the virus and water resources. In the meantime, heed the safeguards that we have all been practicing. Maintain safe distancing, wear a mask and repeatedly wash your hands.



Idaho Water Resources Research Institute

The Water Directory

- The Water Directory is a online directory of all water related professionals on campus, compiled by the Water Institute.
- To connect with water related professionals scan the directroy link below.

Directory Link





University
of Idaho



Idaho Water Resources Research Institute



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