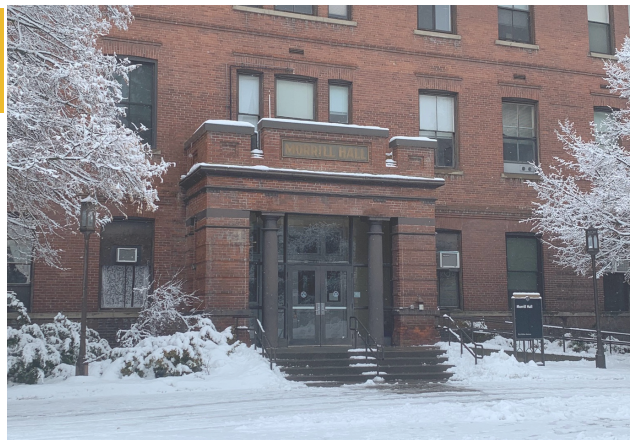
Idaho Water Resources Research Institute

THE CURRENT

Volume 4 Issue 1 - Spring 2021

LETTER FROM DIRECTOR



In the four years that I have been Director of the Idaho Water Resources Research Institute I have used the Spring issue of the Current to herald in a new beginning. But this year, after 12 months with Covid, it all seems a bit insincere. We are not out of the viral wood just yet though it certainly appears that, with the rapid dissemination of vaccination shots, we are heading in the right direction.

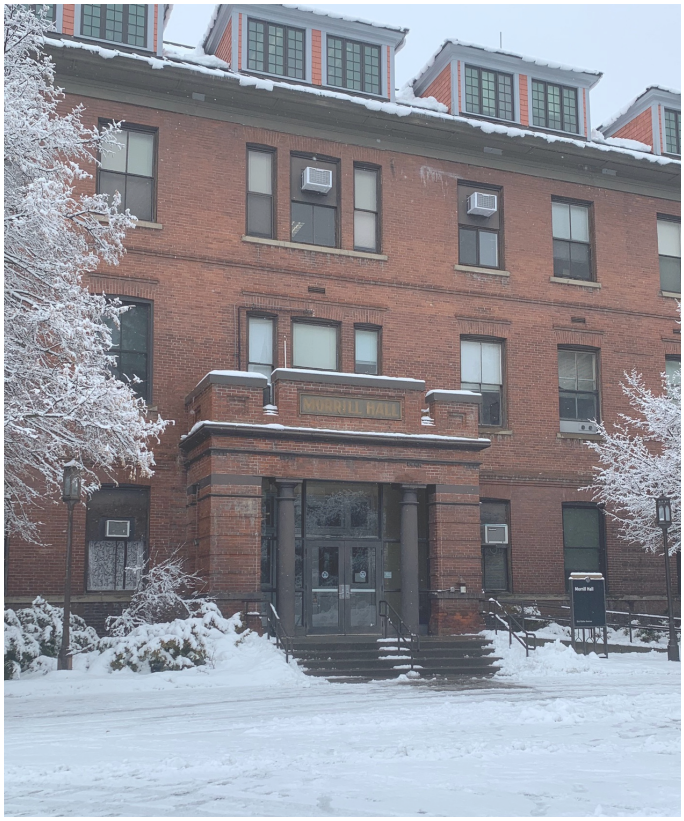
GRADUATE AFFILIATE

Rveraine Walters is an interdisciplinary PhD candidate in Water Resources at UI and has been a part-time Idaho Water Institute graduate student affiliate since August 2020. Her dissertation research takes a contextual engineering approach to hydrosocial challenges for smallholder farmers in Chile.

GEOHEALTH

In the last newsletter, I wrote an editorial on Wicked Water Problems, that is problems that have no simple answers. Rather than being solvable, partial solutions for these problems are nuanced, with the final outcome being a trade-off, in which some aspects of the problem can be satisfied, while other adverse effects can only be minimized.

LETTER FROM THE DIRECTOR



In the four years that I have been Director of the Idaho Water Resources Research Institute I have used the Spring issue of the Current to herald in a new beginning. But this year, after 12 months with Covid, it all seems a bit insincere. We are not out of the viral wood just yet though it certainly appears that, with the rapid dissemination of vaccination shots, we are heading in the right direction. Where a year ago, we were shutting down, and figuring out just what we needed to work from the relative safety of our own homes, now we are asking the question, what do we move back into our offices, and when do we do it.

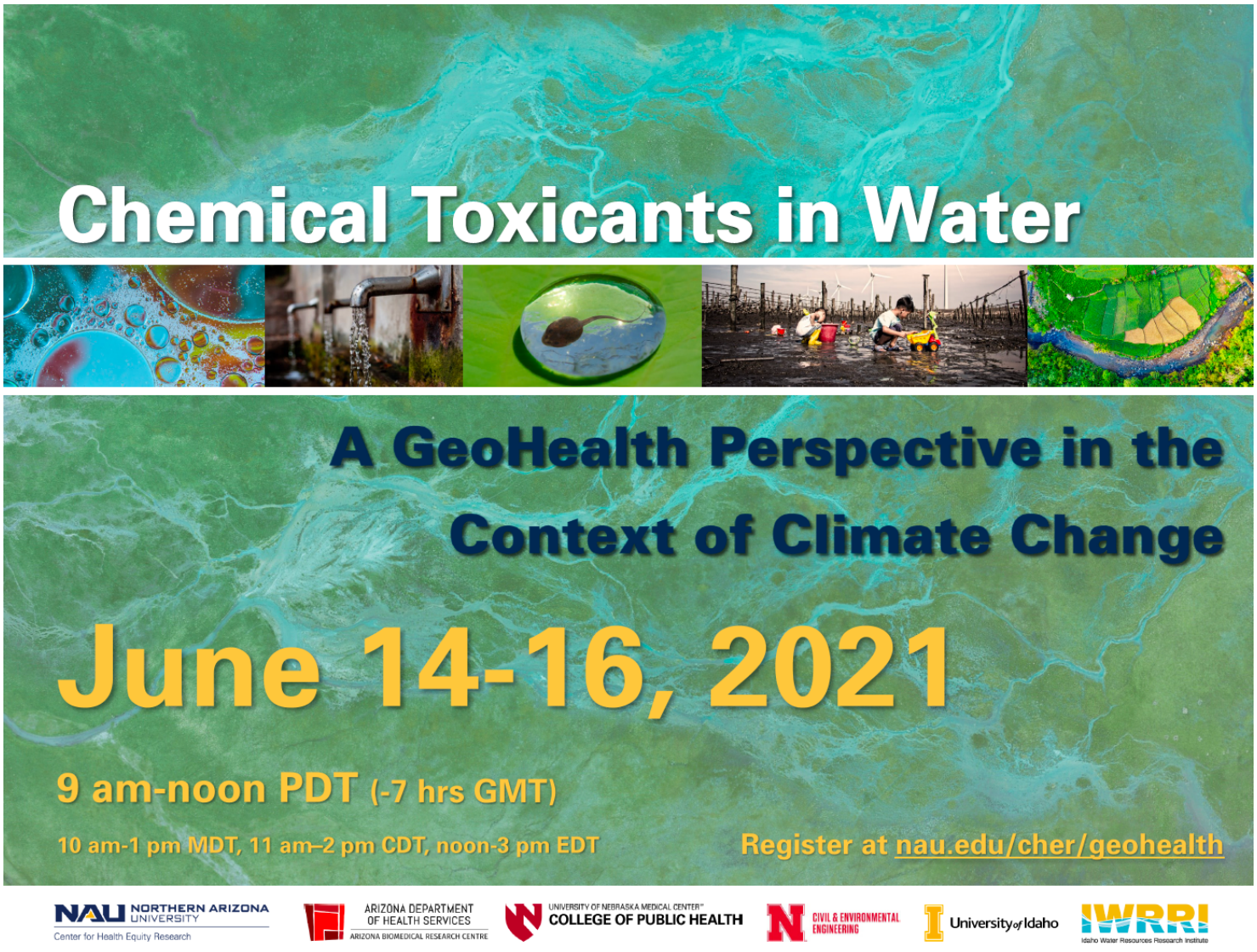
On a University campus, spring represents an ending as much as it does a beginning, so perhaps it is more appropriate to celebrate that. A few weeks from now, students will be packing their bags and leaving Moscow. For the graduates among them, leaving Moscow may be a finality, as they may never pass this way again. Their departure reminds us that students are our life blood and the principal reason that we are here. At the Idaho Water Institute, we take the challenge of training the next generation of water resource professionals seriously, and we are equally proud to laud their significant accomplishments. With that in mind, a portion of this newsletter (page 7) is dedicated to the students and post-doctoral fellows that have worked with The Idaho Water Institute over the past year, and the accomplishments that they have produced.

Charles Darwin has been quoted as saying that, “It is not the strongest of the species that survives, nor the most intelligent that survives, it is the one that is most adaptable to change.” Over the last year, we have seen many changes, some positive, others disruptive. We adjusted, stayed calm and persevered. We will continue to do so.

I would like to end this letter by saying that the battle has been won and that we have emerged victorious, however that would be disingenuous. What I can say, however, is that whatever the future holds, we will be there, ready to serve the University of Idaho students, Idaho, and the nation. It is that commitment that gives us continued strength.

Remain vigilant and stay safe,

Alan



Understanding the local, regional and global geospatial links between water contamination and human health is critical to evaluating exposure risks. We would like to invite you to our FREE VIRTUAL workshop titled: “Chemical Toxicants in Water: A GeoHealth Workshop in the Context of Climate Change.” This workshop will feature nine distinguished speakers across three themes: Chemicals of Emerging Concern, Arsenic in Water Resources, Intersection between Chemical Pollution and Climate Change. The talks will be followed by breakout rooms to discuss the critical next steps for research in this area. The workshop will take place from 9:00 am-12:00 pm (Mountain Standard (Arizona)/Pacific Daylight time; 10-1, Mountain Daylight Time; 11-2, Central Daylight Time; 12-3, Eastern Daylight Time, -7 GMT) on June 14-16, 2021. The speaker lineup for the workshop and registration site can be found at: nau.edu/cher/geohealth

IDAHO WATER INSTITUTE GRADUATE STUDENT AFFILIATE, SPRING 2021, RIVERAINE WALTERS

Riveraine Walters is an interdisciplinary PhD candidate in Water Resources at University of Idaho and has been a part-time Idaho Water Institute graduate student affiliate since August 2020. Her dissertation research takes a contextual engineering approach to hydro-social challenges for smallholder farmers in Chile. However, as a participant in the National Science Foundation funded, Integrative Graduate Education and Research Traineeship (IGERT) program, Raine was elated to work with the Idaho Water Institute on a project to secure Idaho's water future.

Raine's resume comprises a variety of research assistantships, including: activity with the EPSCOR MILES program related to Coeur d'Alene Lake, the iDrone Program for advancing STEM education among middle and high school students, and a system dynamics modeling of the Eastern Snake Plain Aquifer. In addition, she was an intern with the Northwest Power and Conservation Council, a peer-advisor for three cross-cultural/interdisciplinary water resources courses in Chile, a Graduate Student Fellow and lead a project at the National Socio-environmental Synthesis Center, an Affiliate at the Lawrence Berkeley National Lab, and a Graduate Scholar and mentor for the Innovations at the Nexus of Food, Energy, and Water Systems Educational Resources - Disaster Relief and Resilience Project. She has also had the opportunity to represent the University of Idaho by presenting her work at international conferences in Michigan, Wisconsin, Alaska, and Mexico City and has already published several journal articles as a PhD student.

As an Idaho Water Institute Affiliate, Raine has been working with Drs. Karen Humes and Jae Ryu to help develop the Water Chapter for the McClure Center's Idaho Climate-Economy Impacts Assessment. The assessment is a nonpartisan, science-based resource to help Idahoans plan for a productive, prosperous, and resilient economy. It also connects the latest scientific research on Idaho's changing climate with economic risks and opportunities that impact businesses, residents, and local and state economies. In addition, the assessment will seek to inspire new collaborations, commitments, and ongoing forums to leverage resources, encourage innovations, and spur investments in Idaho climate solutions. The first two chapters in the assessment, climate, and water, are intended to articulate the scientific underpinning on the impacts of climate change on the physical environment and water cycle in Idaho, including forecasted changes in temperature and precipitation, snowpack, streamflow, stream temperature, and to the extent possible, other water quality impacts.

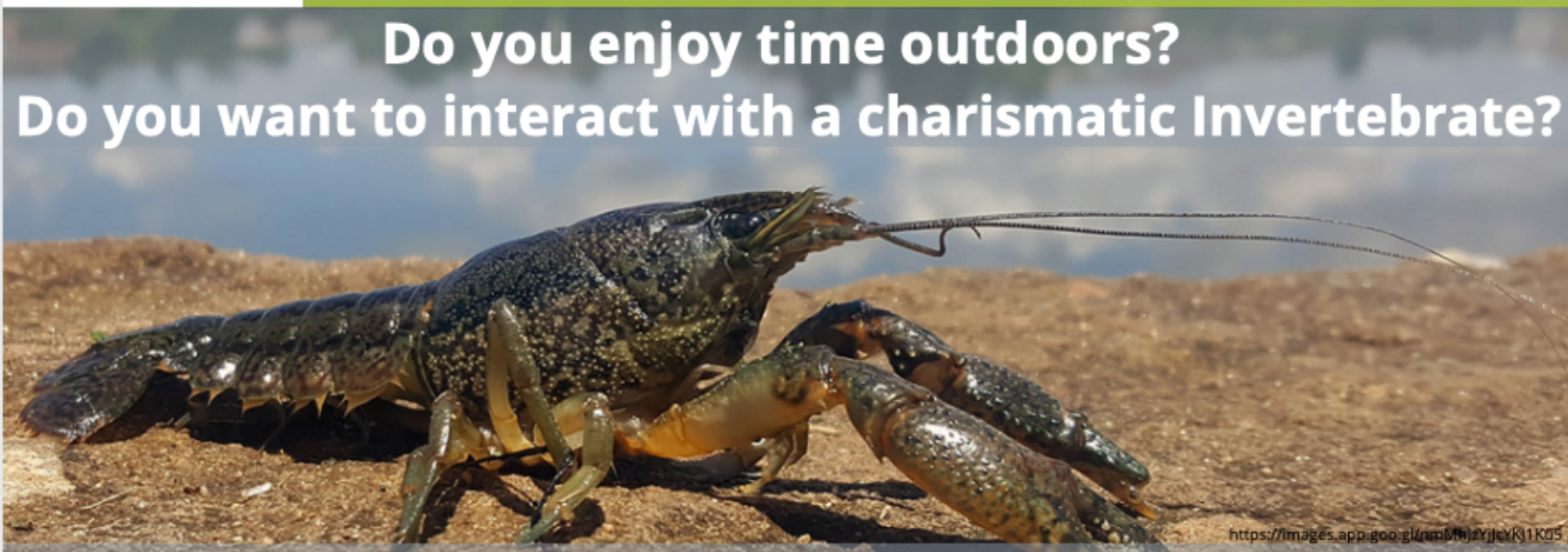
Raine's specific writing contributions have been sections on water governance, water supply and demand, and changes in stream flow and magnitude, along with additional subsections in other areas. In addition, she has been responsible for literature reviews, proofreading, editing, and collaborating with authors of other chapters/sections.

Upon graduation this May, Raine intends to continue learning and growing in this wicked field of water and society, by exploring compassion for socio-natural suffering through disaster chaplaincy. She is also currently serving as a reservist with the federal government to respond to disasters in her capacity as an environmental floodplain specialist and plans to continue that service. Raine also intends to continue researching and publication contributions to multiple fields and to further the University of Idaho's legacy of leading as a proud Vandal.

University of Idaho

CRAYFISH MERCURY PROJECT

Do you enjoy time outdoors?
Do you want to interact with a charismatic Invertebrate?



Are you curious about water pollution?

If this sounds interesting, then the Idaho Water Institute needs your help.
Opportunities will be available June-October 2021!

Where: Crayfish can be collected from anywhere within the Columbia River Basin, with an emphasis on the Spokane and Boise Rivers.

Our Goals:

- To get you involved in a project collecting real scientific information on mercury in crayfish across the Columbia River Basin.
- Collect data that will help us gain a better understanding of mercury and crayfish throughout the basin.

Who is able to participate? Anyone who is interested can participate in this project. We will have several collection opportunities with our partners- see links below for information on how to sign up. For anyone who may want to collect crayfish independently, please contact us so we can make arrangements to work with you.

IWRRI
Idaho Water Resources Research Institute

For detailed information go to:
https://citsci.nkn.uidaho.edu/

To get involved:
Email us at IWRRI@uidaho.edu

United States Environmental Protection Agency

Boise River Enhancement Network

SPOKANE RIVERKEEPER

IDAH2O Master Water Stewards

Engaging Every Student

TRM The River Mile

A VIRTUAL (AND FREE!) GEOHEALTH WORKSHOP

BY: ALAN KOLOK

In the last newsletter I wrote an editorial on Wicked Water Problems, that is problems that have no simple answers. Rather than being solvable, partial solutions for these problems are nuanced, with the final outcome being a trade-off, in which some aspects of the problem can be satisfied, while other adverse effects can only be minimized. In that same article, I also mentioned the concept of GeoHealth, the study of the geographic distribution of adverse health outcomes.

Water, of course, plays a pivotal role in GeoHealth, for we are all intimately connected into the water cycle, and it, in turn, impacts our health and well-being.

I am delighted to announce that the Idaho Water Institute, in conjunction with faculty from the University of Nebraska Medical Center, the University of Nebraska Lincoln, and Northern Arizona University, are putting together a free, virtual GeoHealth workshop that will occur in mid-June. The keynote speaker for the workshop is Dr. Gabriel Filippelli, the Editor in Chief for the international journal, GeoHealth, a publication of the American Geophysical Union.

The structure of the three-day workshop will include three keynote speakers per day followed by a breakout session where comments from the speakers and the audience will be captured. The workshop will re-convene to discuss what we have learned and to share insights.

The first day of the three-day workshop will focus on aqueous chemical contaminants and public health, while the second day will be a drill down into one specific contaminant, arsenic. The third day will explore the relationship between public health and climate change. A full schedule of speakers is presented on the registration page, which can be accessed at: https://nau.edu/cher/geohealth

I hope that you can join us, as we explore the nuances of this exciting, emerging field.

IDAHO WATER INSTITUTE STUDENT ACCOMPLISHMENTS

Jaz Ammon, Idaho Water Institute Graduate Student Affiliate Fall 2020

Jaz Ammon, Student Investigator; Erin S. Brooks, Principal Investigator. (2021). Modeling for Management Decision Support: Tools for tracking long-term post-wildfire hydrologic recovery. Graduate Research Innovation (GRIN) award, United States Joint Fire Science Program. ($25,000)

Melissa Topping M.S. Student, Water Resources

Topping, M and Kolok, A. (2021) Assessing the Accuracy of Nitrate Concentration Data for Water Quality Monitoring Using Visual and Cell Phone Quantification Methods. Citizen Science: Theory and Practice, 6(1): 5, pp. 1–9. DOI: https://doi.org/10.5334/cstp.346

Naveen Joseph, Postdoctoral Fellow, Idaho Water Institute

Joseph, N., E. Winford, J. Sprinkle, J. Lucas, R. Findley, M. Strickland, N. Vishwanath & A.S. Kolok. 2021. "Relationships among fecal coliforms, the location of cattle in a mixed-land-use rangeland watershed and microbial source tracking markers." Water Research (121): 107110. doi.org/10.1016/j.ecolind.2020.107110

Joseph, N., Preetha, P. P., & Narasimhan, B. (2021). Assessment of environmental flow requirements using a coupled Surface water-groundwater model and a flow health tool: A case study of son River in the GANGA BASIN. Ecological Indicators, 121, 107110. doi:10.1016/j.ecolind.2020.107110

EDITORIAL CORRECTION

In the last issue of the Current (Volume 3, Issue 3), the article, “Mink Creek Water Quality: An e. coli Mystery Solved with DNA,” was misattributed to Maria Ortega, Marketing and communications Manager, University of Idaho, Boise. The article was actually written by Steve Stuebner, who is a senior-level Public Relations and Marketing professional, based in Boise, Idaho. The source tracking work in Mink Creek has attracted considerable publicity and we sincerely appreciate the press that this project has generated. Steve Stuebner’s article can be found here: https://idrange.org/range-stories/southeast-idaho/mink-creek-water-quality-an-e-coli-mystery-solved-with-dna/. Maria Ortega’s article can be found here: here:https://www.uidaho.edu/boise/news/featured-stories/research/whodunnit. The Idaho Water Institute team strives to maintain accuracy in our newsletter, and we apologize for this error.

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