



University at Buffalo

Research and Education in eEnergy,  
Environment and Water (RENEW)

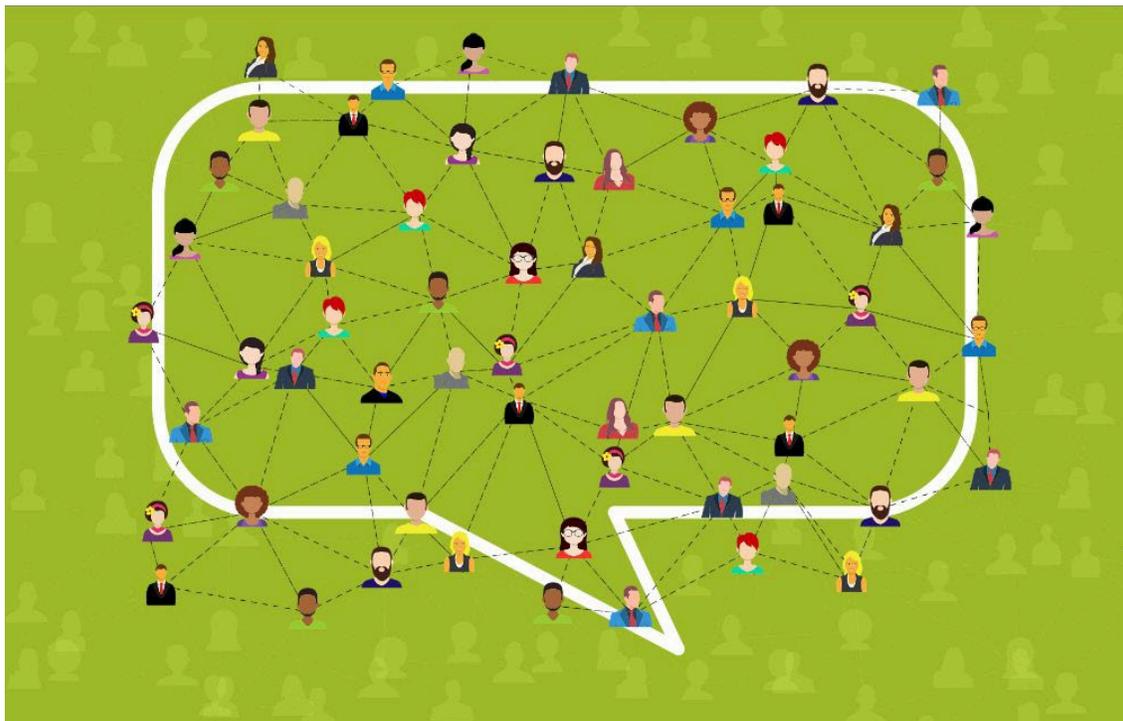
# Currents

News, events and more from the RENEW Institute, where faculty collaborate across disciplines to solve the world's most pressing problems



SUMMER / FALL 2023

## Message from the Director



Where did the summer go? The question is a cliché, but it has fresh traction this fall after we spent much of June and July indoors because of unhealthy air quality in WNY. The severity of the extended 2023 Canadian wildfire season – and the likelihood that climate change will contribute to future extreme weather events – underscore the importance of the RENEW Institute. Working convergently, we will unlock solutions to pressing energy, environmental, and water-related concerns, and enable greater

climate change resilience for our children and grandchildren.

To facilitate your identification of cross-disciplinary research partners, this fall RENEW is unveiling its new [Catalyzing Conversations](#) speaker series. As suggested by its name, the series will enable RENEW Core Faculty and Faculty Affiliates to bring to UB speakers who will spark cross-disciplinary research collaborations related to energy, environment, and water, and their socio-economic impacts. Convened across the UB campuses, "Catalyzing Conversations" are open to all. If you'd like to nominate a speaker, you may do so [here](#).

At last winter's Lightning Talks, the breadth of UB researcher interest in PFAS-related research emerged, so in August and September we organized "PFAS Breakfast Meetups" at the University Club in Norton Hall. The relaxed social format enabled faculty to become acquainted and share research interests. In fact, one highly interdisciplinary team that formed from the meetup has already submitted an NSF proposal.

On Wednesday, November 29<sup>th</sup> we will host a new "Breakfast Meetup" from 8-9:30 am, this one for all RENEW-affiliated researchers interested in **environmental pollution and health impacts**. If you'd like an invite, please contact Lisa Vahapoglu at [lisalenk@buffalo.edu](mailto:lisalenk@buffalo.edu). And if you'd like to propose using the "Breakfast Meetup" model for another Focus Area topic, or if you'd like to learn about opportunities to connect your research agenda to other RENEW scientists, please email us at [renew@buffalo.edu](mailto:renew@buffalo.edu). We look forward to working with you!

#### **Diana S. Aga, Ph.D.**

SUNY Distinguished Professor  
Henry M. Woodburn Professor of Chemistry  
Director of RENEW Institute

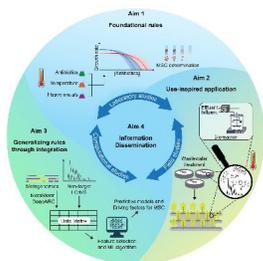
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## News and Updates



### **RENEW faculty members honored as SUNY Distinguished Professors**

[Mark Swihart](#), [Thomas Thundat](#), [Diana Aga](#), [Krishna Rajan](#), [Quanxi Jai](#), and [Luis A. Colón](#) have achieved the highest academic rank in the SUNY System. >>> [Learn more about SUNY Distinguished Professors](#)



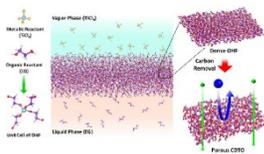
### **\$3 Million NSF grant to investigate evolutionary mechanisms that contribute to AMR**

Diana Aga and Shannon Seneca will use their NSF Using Rules of Life grant to investigate environmental factors, including climate change, that contribute to antimicrobial resistance. >>> [Learn more](#)



### **19th Annual LC-MS/MS Workshop**

On September 24<sup>th</sup> and 25<sup>th</sup>, RENEW hosted the 19th Annual Workshop on Emerging HRMS & LC-MS/MS Applications in Environmental Analysis & Food Safety. >>> [Learn more about the workshop](#)



## Miao Yu's research findings published in Science

Yu's heat-resistant membranes will enable efficient separation of organic molecules under harsh conditions. >>> [Learn more](#)



## SPHHP's Kordas receives Fulbright

In the Czech Republic, Katarzyna (Kasia) Kordas will develop research collaborations in exposure assessment and population health science. >>> [Read about Kordas' Fulbright award](#)



## Bohm wins 12th Annual UB Honors College Life Raft Debate

RENEW Steering Committee member Martha Bohm out-argued colleagues in a "what discipline gets on the lifeboat" doomsday hypothetical. >>> [Find out how Bohm won the oar](#)



## PhD candidate co-advised by Ian Bradley wins conference poster award

From a field of 300 poster presentations at the Association of Environmental Engineering and Science Professors 2023 Conference, Md. Arafat Ali was one of 8 awardees. >>> [Learn more](#)



## Inaugural Richardson Medal awarded to Nowicki-led team

The International Glaciological Society has recognized Sophie Nowicki's ice sheet modeling team for its academic and leadership activities in the design and production of future sea-level projections.

>>> [Read more](#)



## RENEW welcomes new staff members

[Karla R. Sanchez Lievanos](#), a synthetic chemist, has joined RENEW as a Post-doc fellow under the NSF ASCEND program. [Alexander Hoepker](#) joins RENEW as a cross-disciplinary R&D chemist who integrates enzymatic reaction strategies, protein design, materials science and chemistry. Before joining RENEW as the Office Administrator, **Juana Colón** sharpened her administrative skills in settings ranging from an environmental law practice in New Mexico to the social service sector in Buffalo.



## Save the Date! End-of-Year Celebration and Poster Session

2024's celebration is planned for April 19th, 2024 from 3:30-5:30pm. This event will include 1st, 2nd, 3rd place prizes for best graduate student poster.



## UB's Driven to Discover Podcast interviews RENEW Faculty experts

RENEW Faculty members Nick Rajkovich and Diana Aga were interviewed for the "Driven to Discover" podcast.

>>> [Listen to Dr. Rajkovich's Episode on Climate Resiliency](#)

>>> [Listen to Dr. Aga's Episode on Forever Chemicals](#)

>>> [Learn more about Driven to Discover](#)

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## Shared Instrumentation Spotlight



*Photo credit: [Zachary Gernold](#)*

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In May 2023, RENEW added a state-of-the-art **Waters SELECT Series ion mobility-high resolution mass spectrometer** to its shared instrument facilities. The SELECT Series instrument utilizes both traditional chromatography separation and ion mobility spectrometry (IMS) during which chemicals are pushed through a dilute gas to separate structurally similar components according to their mobility in the cell. Separations are achieved based on the chemicals' intrinsic collision cross section (CCS). The SELECT system uses a novel cyclic IMS cell, which enables multiple rounds of mobility selection for additional separation of chemicals. Separated chemicals are then detected using a high-resolution quadrupole-time-of-flight (QToF) mass spectrometer capable of mass resolution upwards of 100,000 (FWHM).

The system is equipped with both liquid and gas chromatography and electrospray, atmospheric pressure chemical ionization (APCI), and atmospheric pressure chemical ionization for gas chromatography (APGC) for application to a wide array of chemical analytes. [The topic of much discussion at an international LC-MS/MS workshop at UB](#), the IMS-high resolution mass spectrometer system is currently being used to separate and identify structurally similar per- and polyfluoroalkyl substances (PFAS) in environmental and biological samples. Email [Joshua Wallace](#) with questions or to schedule a consultation.

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## Events and Outreach



### Upcoming Catalyzing Conversations

#### Indigenous Films for Indigenous Peoples Week

RENEW and the Department of Indigenous Studies will co-present **Indigenous Films for Indigenous Peoples Week**, featuring a screening of: *Saging the World*. >>> [Download event flyer](#)

Date: Thursday, October 5th,

Time: Catered reception at 6:00 pm, screening begins at 7:00 pm.

Location: [Hallwalls Contemporary Art Center](#) or via Zoom ([Zoom Registration](#))



#### Janet Hering

RENEW and the Department of Civil, Structural and Environmental Engineering will host **Dr. Janet Hering**, Director Emerita of the Swiss Federal Institute of Aquatic Science & Technology, Professor Emeritus, Swiss Federal Institute of Technology and member of the National Academy of Engineering.

Date: October 16, 2023

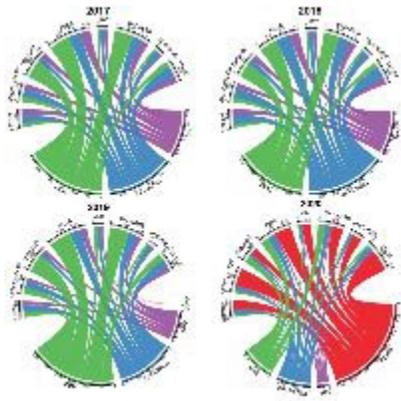
Time: 11:00 am

Location: The Buffalo Room, 10 Capen Hall, UB North Campus

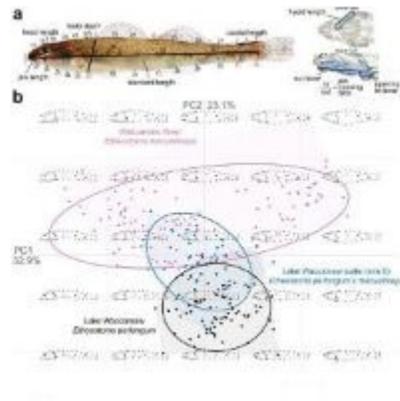
Dr. Hering's talk will be informed by her expertise in biogeochemical cycling of trace elements in natural waters, treatment technologies for the removal of inorganic contaminants from drinking water, and knowledge exchange at the interface of science with policy and practice. >>> [Learn more about the event](#)

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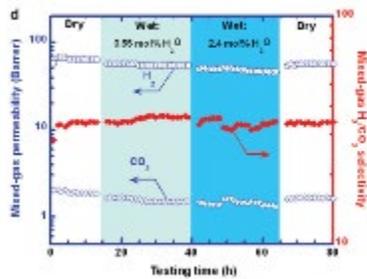
## Recent Publications



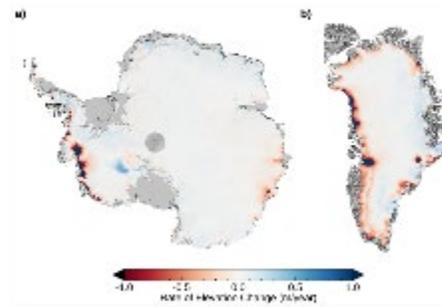
**Andrew Crooks:** Social media shaped vaccination sentiment during COVID pandemic. >>> [Learn more](#)



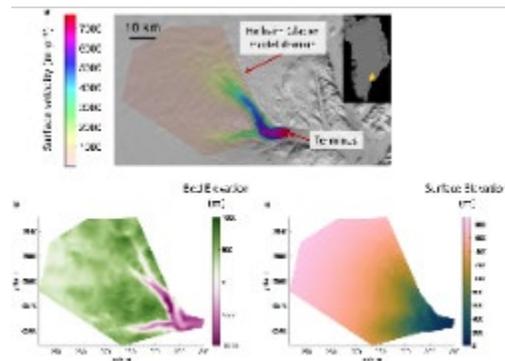
**Trevor Krabbenhoft:** The Waccamaw darter (*Etheostoma perlongum*) was found to be a young species, showing that structural genomic variation can enable rapid ecological speciation. >>> [Learn more](#)



**Haiqing Lin, Mark Swihart, Martin Trebbin:** Nanorods superior to nanoparticles/nanowires in mixed matrix membranes. >>> [Learn more](#)



**Sophie Nowicki:** Using satellite imaging to measure ice sheet mass balance at the continental scale. >>> [Learn more](#)



**Kristin Poinar:** Subglacial hydrology and ice dynamics modeling of fast-flowing glaciers should consider frictional heat from sliding. >>> [Read more](#)

>>> [Read more recent publications from RENEW Faculty](#)

Visit the [RENEW website](#). [Sign up to our emailing list](#).

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**Our mailing address is:**

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