



October 27, 2022

Dear CUAHSI Representative,

Thank you for your continued service as a CUAHSI Member Representative. Welcome to our new Members in 2022: National Environmental Engineering Research Institute of India; Santa Clara University; Smith College; and University of Missouri.

We value your input, and we seek your participation in the Listening Sessions we are holding on November 7 and 9. These sessions are to inform the development of CUAHSI's 2024 – 2029 Strategic Plan. Please register [here](#) (12:00 ET, November 7) or [here](#) (1:30 ET, November 7) or [here](#) (12:00 ET November 9) if you are interested in participating.

CUAHSI's 2022 Membership Meeting will occur on **Tuesday, December 6, 2022 at 2:00 p.m. ET** via Zoom. We hope that you will join us and your fellow community members to hear about recent CUAHSI activities and to voice your opinion on CUAHSI initiatives. **You will need to register for the meeting in advance [here](#). Participants must register by 1:00 p.m. on December 5, 2022.**

Included in this package are:

- The agenda for the December 6 meeting.
- Meeting Minutes for 2021.
- The Board of Directors election candidate information, which also can be found [here](#).

A personalized link to the electronic ballot will be emailed to you soon. On this ballot you will be voting on (1) Board candidates and (2) 2021 minutes.

CUAHSI serves a broad community, and the actions and activities we undertake are most successful when our membership is active and engaged. Therefore, your participation is very important.

If none of the Member Representatives from your institution are available at the meeting time, we request that you please appoint an "alternate" from your institution (someone with an academic, research, or teaching position) to represent your institution on the call.

Notifications of the appointment of an alternate must be provided by an email to CUAHSI secretary, Adam Ward (adamward@indiana.edu) with copy to Maddie Scranton (mscranton@cuahsi.org) at least 24 hours in advance of the start time of the meeting. Note that only one alternate is needed to represent your institution, and the alternate is only needed if all the CUAHSI representatives for your institution cannot attend the meeting.

Please feel free to contact me directly should you have any questions regarding the Membership Meeting or the Board of Directors election. We look forward to "seeing" you at the meeting and the following week at the fall AGU meeting. Visit us in the Exhibition Hall at booths 1312 and 1219.

Sincerely,

Dr. Jerad Bales
President and Executive Director



CUAHSI ANNUAL MEMBERSHIP MEETING AGENDA

December 6, 2022, 14:00 EST/20:00 GMT

1. Call to order – Lejo Flores

Part 1. Status and Information about CUAHSI

2. State of the Consortium – Jerad Bales
3. CUAHSI Strategic Planning: Opportunity for Input: Emily Clark

Part 2. Official Business

1. Roll call – Announcement of Quorum – Adam Ward
2. Announcement of electronic voting on minutes– Lejo Flores
3. Announcement of new Directors – Lejo Flores
4. Expression of Appreciation –Lejo Flores

Adjourn



Board Nominees

Hoori Ajami

My name is Hoori Ajami and I am excited to announce my interest to serve as one of the members of CUAHSI Board of Directors. I am an Associate Professor of Groundwater Hydrology in the Department of Environmental Sciences, University of California Riverside. I received my PhD in Hydrology from University of Arizona and was a post-doctoral fellow with the National Centre for Groundwater Research and Training in the University of New South Wales in Sydney, Australia. I have been serving as a member of CUAHSI Diversity, Equity, and Inclusion (DEI) Standing Committee since its inception in 2021, and had the opportunity to work with the CUAHSI staff and our committee members on promoting discussions related to DEI issues in our discipline and improving CUAHSI's awards program by enhancing the application submission and evaluation process. I would like to share my ideas if selected to serve at this capacity. As very few undergraduate minority students pursue graduate studies in Hydrologic Sciences, I would like to promote and establish a "Taste of Research" summer program through CUAHSI, and host webinars and workshops targeted for undergraduate students. Given the interdisciplinary nature of Hydrologic Sciences and lack of adequate graduate level Hydrology courses in many institutions, I would like to work towards expanding graduate students training through the CUAHSI virtual university by offering specialized short courses to enhance student training and skill set in Hydrologic Sciences, and creating an online collaborative learning community of graduate students. I am very enthusiastic about this opportunity and looking forward to serve CUAHSI and the Hydrologic Sciences community if selected.



JP Gannon



I am a collegiate assistant professor in the Forest Resources and Environmental Conservation department at Virginia Tech (VT). Before starting at VT I was an assistant professor at a primarily undergraduate institution for five years. While my current position includes research and service, my primary focus is teaching. I teach classes in hydrology, data science, geospatial analysis, and pedagogy. Additionally, I'm committed to developing open source instructional tools for hydrology and data science. I created an open textbook for my hydroinformatics class and a web-app and activities to help instructors teach the water balance in hydrology classrooms. My research focuses on runoff generation across scales, from headwater streams to regional-scale watersheds.

I currently serve on CUAHSI's education and outreach committee. Stemming from my work on this committee, my experiences at a PUI, and my focus on teaching, I am especially interested in serving on the CUAHSI board to help advance undergraduate education-related topics. For example, I am excited to work towards broadening CUAHSI's open education resources for instructors and students. I am also interested in creating more undergraduate opportunities and including more faculty and students from primarily undergraduate institutions (PUIs) in CUAHSI's programs. I hope that I can bring a unique perspective to the board, as someone with a primarily teaching appointment and experience at a PUI.

Andrew Guswa

I have been a representative to CUAHSI since 2006, when Smith College was one of the first affiliate members. Now that representatives from PUIs may serve on the board, I welcome the opportunity to serve our consortium and our hydrologic community. As a faculty member at an undergraduate liberal-arts college, and the only hydrologist, the interactions with water scientists at the CUAHSI Biennial meetings have been invaluable, and I am grateful for the many insights I gained and colleagues that I met through those engagements. I hosted a CUAHSI regional meeting for New England in 2013, and I served on the ad hoc membership subcommittee in 2020 and the nominating committee in 2021. My research spans from ecohydrologic modeling of throughfall and root uptake to field studies in Costa Rica and western Massachusetts to model development in support of



ecosystem-service decisions. Administratively, I have served as director of Smith's engineering program and founding director of our Center for the Environment, Ecological Design, and Sustainability where I collaborated with CTEMPs to establish an east coast node for DTS systems. These activities and roles have brought home the value of a diversity of perspectives for scientific and societal advancement, and I am committed to supporting CUAHSI's goals and initiatives laid out in our DEI strategic plan. I would be honored to represent and serve our community as a member of the CUAHSI Board of Directors.

Anne Jefferson



I am a Professor in the Department of Earth Sciences at Kent State University, and I have served on the CUAHSI Board of Directors since January 2020. My research focuses on the hydrology and geomorphology of human-altered landscapes, with a current emphasis on stormwater management and plastic pollution. I also work on climate change impacts and landscape co-evolution. The goal of my research is to improve the resilience and sustainability of water resources and aquatic ecosystems in the Anthropocene. Beyond research, I am interested in hydrology education, public engagement with science, and making the hydrology community a safe and welcoming one for all people.

CUAHSI's unique combination of data services, educational programs, and cross-cutting activities makes it a key node in the global network of hydrologists. That's why I am proud to be an active Board member, serving on the executive committee (2021-2022), nominating committee (2020-2021), instrumentation committee (2020-2021), and the search committee for our new executive director (2022). I am currently leading an effort to explore and establish new awards to be given by CUAHSI, with the goal of diversifying

who we award by diversifying what we reward. This builds on the Board's Statement on Holistic Evaluation of Research in the Hydrologic Sciences, on which I was one of the primary authors.

If I am re-elected to the Board of Directors, I look forward to participating in the strategic planning process in early 2023 and working with our incoming Executive Director. I believe that the next few years of CUAHSI are critical to making good on our commitment to become an inclusive organization, while maintaining and strengthening existing activities and services. I will work to enhance our organization's efforts in these key areas:

1. expanding membership among primarily undergraduate and minority-serving institutions, by consulting with their faculty and students to develop programming and services that meet their needs;
2. initiating awards and scholarships that recognize the diverse contributions that are made by water scientists and engineers;
3. creating opportunities for communication and public engagement training hosted by CUAHSI; and
4. strengthening connections between CUAHSI and other organizations that serve the interdisciplinary water community.

Chris Lowry

I am an associate professor in the department of Geology at the University at Buffalo. My research focuses on water supply and groundwater-dependent ecosystems using field methods and numerical modeling. I am particularly excited about developing numerical models using novel approaches to collect hydrologic data; this endeavor most recently includes collaborating with citizen scientists. I have always been drawn to CUAHSI programs owing to their ability to advance hydrologic sciences through community building. Over the last two years, I have been thinking a lot about how we engage with the general public regarding hydrologic science and how we can improve our understanding of the importance of water resources in a changing climate. I believe that CUAHSI is an important partner in advancing this sort of informal education in addition to all they do to connect universities.



I value CUAHSI because of the opportunities it provides to the hydrologic community and especially to our students. Through CUAHSI's Virtual University program, I taught an online inter-university course on quantifying groundwater-surface water interactions. I had the opportunity to spend a summer as a faculty mentor in the joint CUAHSI and National Water Center Summer Institute. There is tremendous value in both the Virtual University and Summer Institute programs, and I would like to continue to be involved in supporting and developing multi-institutional training programs through CUAHSI. As a CUAHSI board member, I would also like to help in the development of strong pipelines for new hydrologic scientists through increased engagement at CUAHSI with undergraduate and master's level students. This would include developing an undergraduate research assistant portal on CUAHSI's webpage, where research labs could post research opportunities for students. CUAHSI already has a strong tradition through the HydroShare platform to be a data hub for member universities, so why not become a hub for students interested in research? There is also an opportunity to build on this data expertise by connecting to citizen science networks to engage next-generation scientists and to provide broader impact opportunities for member institutions. CUAHSI has fantastic programs, and I would like to help further that tradition by becoming a board member.

Ashok Mishra



Dr. Ashok Mishra is a professor in the Glenn Department of Civil Engineering and Department of Environmental Engineering & Earth Sciences at Clemson University, South Carolina. His primary research interests involve hydroclimatic modeling, stochastic hydrology, drought modeling, managing water security under extreme events, and hydrometric network design. He is a recipient of a CAREER Award (2017) from the National Science Foundation focused on water security and drought management. At Clemson University he has received several awards, such as, the Board of Trustees Award for Excellence (2019) and URSAA Award (2018) for outstanding research productivity, and the McQueen Quattlebaum award (2022). In 2015 he was also recognized by the Journal of Hydrology for having the most highly cited paper in the period 2007-2015 for his article on 'a review of drought concepts'. Dr. Mishra currently chairs the "Risk, Uncertainty, And Probabilistic Approaches Committee" for the ASCE's Environmental and Water Resources Institute, and is a member of ASCE, AGU, and NOAA - Drought Task Force 3 committee. He was a lead guest editor for Journal of Hydrology on the occasion of the two special issues related to drought process, modeling and mitigation, and water security. He is currently an associate editor for Journal of Hydrology, Journal of Hydrologic Engineering, and Stochastic Environmental Research and Risk Assessment.

Hydrometric information collected over a basin constitutes the fundamental inputs for the design of various water resources projects, and users of hydrometric data are numerous: hydrologists, agronomists, climatologists, hydrogeologists, water resources managers and planners. Dr. Mishra's interest in hydrometric information/design began when working on a manuscript 'Developments in hydrometric network design: A review' published in Reviews of Geophysics (2009), which highlighted critical data needs for stakeholders, a decline in hydrometric network density, issues of uncertainty in hydrometric network design and the evolution of data collection techniques and technologies. These topics are certainly important for the CUAHSI's mission. Dr. Mishra has applied these interests to advancing CUAHSI's activities in a variety of ways, including as Clemson's representative to CUAHSI; by participating as an ad hoc committee member for CUAHSI's data-driven educational efforts (2017), and by conducting a five-year retrospective review for the USDA Agricultural Research Service's National Program – Water Availability and Watershed Management. He also served as a reviewer for the evaluation of water monitoring networks for climate change adaptation on behalf of the Water Monitoring and Climate Change Subgroup of the Canadian Council of Ministers of the Environment (CCME).

If given the privilege to serve on the CUAHSI Board of Directors, his priorities for ensuring the success of the organization will be:

1. To promote the long-term benefits of hydrologic data collection among academia, federal and state agencies, communities, and independent stakeholders. CUAHSI has an important role to play in addressing a decreasing trend in the number of hydrometric stations that has occurred over the years, particularly as hydrologic variability and change are on the rise.
2. To improve methods for the storage, retrieval, and processing of data so that the hydrometric information can be disseminated to and more effectively used by all stakeholders, including practitioners. Providing pathways to increase broad access to and usability of CUAHSI data portals is an important direction for our long-term future.
3. To further diversify CUAHSI partners (e.g., inclusion of social scientists, public policy, federal/state agencies) and to promote the role of CUAHSI in data science to a diverse water

community. Broadening participation in CUAHSI will enhance water and environmental sustainability to prevent human exposure to water hazards today and in the future.

4. To promote international cooperation and enhance opportunities for information exchange through hydrological data networks, including opportunities for education and training. More diverse data sets will help students, postdocs and research communities better investigate the role of emerging climate (weather) risks on water security in a heterogeneous environment from local to global scales. This will help to promote effective use of hydrologic information in sustainable development to reduce the risk and impacts of water-related disasters.

Anne Nolin

I am a hydrologist and mountain geographer with over three decades of experience in snow hydrology, climatology, and remote sensing. Broadly speaking, my research focuses on snow and glaciers in the climate system, how they melt and become water supply for communities and ecosystems. I graduated with a PhD in Geography from the University of California-Santa Barbara. From 2018 - 2022 I served as Director of the Graduate Program of Hydrologic Sciences and Professor in the Department of Geography at the University of Nevada, Reno. I previously worked as a Research Scientist at the University of Colorado, Boulder for 10 years and as a professor at Oregon State University for 15 years. I have published on snow-forest interactions, “at risk” snow, ice sheets and glaciers from the western US and Alaska to the Andes, from Greenland to Mars.



I have extensive organizational experience having served as vice chair of the Water Resources and Global Hydrologic Cycle panel for the 2007 Earth Science and Applications from Space Decadal Survey, the NASA Advisory Council/Earth Science Subcommittee, and the National Academy of Sciences Space Studies Board/Committee on Earth Sciences. I currently serve on the National Academy of Sciences Committee on Earth Science Applications from Space and have been a NASA Science Team member since 1997. I currently serve on the Executive Committee of the AGU Cryosphere Section where I previously served as chair. I have served on several steering committees including the NSF Research Coordination Network for High-Performance Distributed Computing in the Polar Sciences, the international Mountain Research Initiative, and the National Snow and Ice Data Center. I continue to be active with Protect Our Winters (ProtectOurWinters.org), non-profit that focuses on raising awareness of climate change and solutions.

I have served on the CUAHSI Board of Directors for the past 3 years and am on the Education and Outreach Committee. I am also co-organizer of the 2023 CUAHSI Biennial Meeting at Lake Tahoe. I continue to be enthusiastic about CUASHI's success in enhancing hydrology education. Activities such as the CUASHI Virtual University and Snow School are creative opportunities and create a valued community among students nationwide. As a Board member, I will continue to lead and collaborate to further build our hydrology education community. I will work with colleagues to identify essential elements of a robust curriculum in hydrology and water resources. This means strategic efforts to (1) identify and articulate current and emerging hydrology/water resources challenges; (2) evaluate the fundamental and enhanced knowledge and skills needed by these students; (3) seek ways to enhance programmatic diversity; (4) identify ways to make hydrology programs more valuable and accessible to a wider range of students and faculty; and (5) develop a roadmap to achieve our goals. It will be my honor to continue serving on the CUASHI Board of Directors. Thank you.

Arial Shogren



I am currently an Assistant Professor at The University of Alabama (UA) in the Biological Sciences Department, and one of UA's CUAHSI institutional representatives. My research group focuses on the “stories” that rivers can tell us about where water is going and what that water carries along with it during its downstream journey. To tell these stories, we leverage methods and perspectives from stream ecology, biogeochemistry, and hydrology to understand how flowing water moves and modifies a diverse array of materials.

My academic training is in the ecology of rivers and their networks, but I have truly developed as a scientist by consistently working at the exciting intersection between ecology and hydrology. Throughout my career, I have (1) engaged in water research with an interdisciplinary lens; (2) remained steadfast in my mission to make science more accessible to the broader community; and (3) demonstrated commitment to advancing diversity, equity, and inclusion (DEI) in freshwater science. For example, I am actively enhancing aquatic science accessibility through creative curriculum development, encouraging students to add expert knowledge to freshwater Wikipedia pages. Further, I have led and contributed to numerous DEI initiatives devoted to increasing representation and inclusion, both at UA and through my academic societies (e.g., Society for Freshwater Science). I am excited to build on these passions and experiences by contributing to CUAHSI's far-reaching mission on the Board of Directors. If I were to be elected as a member of the CUAHSI BOD, I aim to:

1. Build bridges between CUAHSI and potential new users by finding new ways to expand its research footprint to include “untapped” communities, such as ecologists, and the students and faculty at primarily undergraduate institutions.
2. Foster CUAHSI's strengths in data sharing and curriculum development by promoting CUAHSI's educational mission for accessible science, within and outside of the water science community.
3. Contribute to the strong culture of inclusion & equity within CUAHSI by weaving DEI perspectives into the fabric of water science, because the need for freshwater is universal.

Jay Zarnetske

I am an Associate Professor of Hydrological Sciences in the Department of Earth and Environmental Sciences at Michigan State University (MSU). My research program focuses on applying hydrologic theory to reveal the patterns and processes of aquatic ecosystems and biogeochemical cycles in watersheds, especially in river corridors of Arctic and Temperate settings. Presently, I am finishing my first term on the CUAHSI Board of Directors (BOD) and I am the current Chair-elect for the BOD. If re-elected, I will serve as BOD Chair in 2023.

Past experiences: I have continually worked to identify and meet community needs. At my institution, I championed the formation multiple student organizations, co-created a water graduate curriculum, and co-founded active committees that address diversity, equity and inclusion (DEI) issues and demystify the promotion and tenure process for faculty. Outside of my university, I serve in multiple community-based science and art programs that promote environmental and water resource awareness



within the public. As part of the CUAHSI community, I led the Membership Committee, which developed and shepherd in the most significant expansion of membership inclusiveness since creation of CUAHSI. In addition, I have served on CUAHSI's Education and Outreach and BOD Executive Committees. I have worked inside and outside of academia and lived in multiple regions of the United States as well as abroad. This range of experiences helped me discover and holistically value the vast array of people, places, and institutions contributing to the advancement of water sciences. I was a Donnelly Postdoctoral Fellow at the Yale School of the Environment. I received my PhD in Water Resource Science and Ecosystem Informatics from Oregon State University, my MS in Watershed Science from Utah State University's College of Natural Resources, and my BA in Geology from Colby College. I have also served as a visiting scientist for New Zealand's National Institute for Water and Atmospheric Research, a research fellow in the Collegium de Lyon in France, and a consulting hydrologist for CDM-Smith, Inc.

Looking forward: A constant goal of mine is to help build and strengthen scholarly communities and I see the immense value of CUAHSI and its mission in enhancing multiple scholarly communities. I look forward to chairing the BOD so that I can continue to support CUAHSI's mission to empower all members of the water science community. CUAHSI has made substantial progress in the past few years to empower more people and institutions, from the revision of its membership policies to include nearly all types of academic institutions, to establishing and acting on multiple DEI programs. Still, there is much work to be done to serve our water science community more holistically, especially the people and institutions who are historically underserved, underrepresented, and undervalued. Hence, my vision to help strengthen our water science community is to:

1. Help steward CUAHSI strengths and momentum – do all I can to support and maintain the successful CUAHSI programs and policies that have developed over an exciting last decade,
2. Help CUAHSI make data and tools more accessible – pursue ways to facilitate data and tool users from outside our current community, so CUAHSI can facilitate interdisciplinary coordinated networks and reach social science and public policy communities,
3. Help CUAHSI grow and serve more – seek ways that CUAHSI can increase equity and inclusion within the water sciences, which, in turn, will promote a more diverse and representative community, and
4. Help CUAHSI engage more of society with the water sciences – find innovative ways for CUAHSI to enhance the education and outreach impacts of our water sciences community.

Membership Meeting Minutes
December 7, 2021

Call to Order 14:00 EST

Attendance (Staff and officers):

Jerad Bales (CUAHSI), Troy Gilmore (Treasurer), Adam Ward (Secretary)

Attendance of Member Representatives:

See separate spreadsheet for representatives in attendance.

Note: presentation slides are archived with the meeting minutes.

Part 1. State of the Consortium

- 1) State of the Consortium
 - a. The Chair of the Board of Directors welcomed participants and provided a presentation on the state of the consortium.
 - b. During the presentation, short ‘pop ups’ from fellowship recipients highlighted examples of CUAHSI’s successes during the year.

Part 2. Formal Business Meeting

- 2) Roll call approval of replacements (Ward)
 - a. Ward reported that reported that quorum was not met, which is defined as at least 50% of members in CUAHSI’s ByLaws. Consequently, formal business was tabled for the next membership meeting. The Chair proceeded with informational-items only.
- 3) Treasurer’s Report
 - a. Bales presented a summary of CUAHSI’s finances, including detailed updates for the current fiscal year.
- 4) CUAHSI Board Elections
 - a. The Chair of the Board reported the results of the election of four new Board of Directors members. He thanks those Board members rotating off of the Board for their service to the organization.
- 5) Other Business
 - a. The Chair of the Board opened the floor to any other business. Hearing none, the meeting was adjourned.

Adjourned 15:00 EST