



PRESIDENT'S NOTES: John Chandler, Puget Sound Energy– AWRA-WA Section President



Hello AWRA-WA members. Despite a very challenging year I'm proud of the work we accomplished together. I'll talk more about this at our annual meeting on December 15th.

The incoming president will also have a brief look forward into what we'll be focused on for next year. I hope you'll be able to join us!

We hosted our first virtual annual state conference in October: "The Challenges of Change: How Washington is Responding to Interdisciplinary Changes to Water Resources." The Conference Committee deserves immense credit for starting to plan the annual event normally and then having to change to virtual halfway through the year. I'd like to especially thank our conference co-chairs Jenna Mandell-Rice and Tom Ring for such an excellent job adapting to an unprecedented situation.

INSIDE THIS ISSUE

Title	Page
2020 AWRA-WA Annual Conference	2-7
AWRA Mentorship Program	6
2021 Board Slate and Annual Meeting	8-11
Dinner Meeting Summaries	12-13
Student Fellowship Program	13
Groundwater Modelers Interest Group	13
AWRA National Update	14
AWRA-WA Membership Information	15

The keynote speaker, Tony Willardson, set the stage for the event followed by other speakers and panelists highlighting the complicated story of changes in water resources over time. The conference had about 180 people registered who benefitted from 17 speakers and panelists who covered a wide variety of topics. Conference session notes are on pages 2-7. We'll likely mix things up a little for next year's annual conference followed by hosting the AWRA national conference in 2022.

At the annual conference we were pleased to announce Maia Bellon as our Outstanding Water Resources Professional Award. As most of you know, Maia served as Director of the Washington State Department of Ecology and several other impressive roles throughout her career.

The Dinner Committee has been very successful in our webinar meetings. Participation has more than doubled since last year. Folks from all over the state have been joining these lunch and evening events. Even after the pandemic ends the Board plans on hosting a mix of webinars and in-person meetings to provide access to a broader group.

Thanks to the generosity of our sponsors (see page 2) we were able to give out three fellowships to students this year instead of two. Supporting our student chapters and young professionals is particularly important during this period of economic disruption. Please see page 13 for instructions for the 2021 Fellowships due in February.

At the AWRA National conference in November I was one of many judges of student posters and thought they did an excellent job. I didn't see any posters from our local chapters but I think our Washington students would do a great job if given the opportunity. I would like to pursue easier access to participate in these kinds of events, especially when the Washington Chapter hosts the AWRA National conference in 2022.

I'd like to congratulate our Past President, Rabia Ahmed, on her election to the AWRA National Board. Rabia will continue to serve on the state section Board as well. This will provide an important bridge between the Washington Chapter and National.

The 2021 Board Slate is on pages 8-11. Members should already
President Notes Continued on Page 13

ANNUAL AWRA-WA MEETING

7-8 PM Tuesday 15 December, 2020

[REGISTER NOW](#)

VIRTUAL MEETING!!! You will receive a link to participate via our webinar service when you register AND the day before the event.

Ashley Mihle

King County Biosolids Project Manager

Poop Loop – Turning Wastewater into Biosolids and Sustainable Agriculture

2021 AWRA-WA BOARD ELECTIONS

AWRA-WA is conducting its 2021 Board of Directors Elections using an online voting system known as Election Buddy. Full paid members in good standing will receive a separate email directly from "American Water Resources Association Washington Section (elections@electionbuddy.com)", with instructions and a web link for a ballot.

You can review the proposed Board on pages 8-11 of the newsletter.

Voting closes on December 13 at 11:59 PM. We are excited to extend the AWRA-WA elections to all our members who are in good financial standing with their membership. The results will be announced at the December dinner meeting, on Tuesday December 15, 2020

2020 CONFERENCE: “CHALLENGES OF CHANGE”

Our Annual Conference was held on October 6, 2020 virtually: “The Challenges of Change: How Washington is Responding to Interdisciplinary Changes to Water Resources”, and covered topics on recent and ongoing changes to water supply and water quality, and the market, technological, regulatory, and legislative responses to those changes. The conference program and copies of presentations can be found at: <https://www.waawra.org/page-1831848>. The following sections summarize the Keynote address and Session 1 through Session 4.

Keynote Address – Tony Willardson, Western States Water Council

Scribe: Patrick Vandenberg, Seattle Public Utilities

The Keynote Address for the conference featured Tony Willardson of the Western States Water Council. This organization is a coalition of representatives appointed by the governors of 18 western states. Its mission is to foster collaboration among its member states in the pursuit of conservation, development, and management of water resources, as well as to analyze the effects of legislation at a federal, state, and local level. Mr. Willardson emphasized that, in order to succeed in the Council's lofty aspirations, it is vitally important to consider the resiliency challenges facing the Western States. Some of these are population growth, technological advances, regulatory changes, climate non-stationarity, and water rights.

Central to the concerns of the Council is the premise that water is generally scarce in the American West. While some parts of the West enjoy plentiful water supply, most of the West operates in danger of a water deficit for at least a portion of the year. And just as important, while the law changes at the arbitrary lines of our states' borders, hydrology does not. Therefore, the Council was formed to pursue a water resources agenda that best serves all its member states. Some of the ways that the Council has identified to improve our collective response to water resource challenges are:

- **Technological:** for example, a recently installed remote sensing satellite, LANDSAT8, uses remote thermal imagery to collect additional data and better inform planning and modeling.
- **Policy:** the Council recommends the relentless pursuit of greater efficiencies as it pertains to water use.
- **Resiliency:** working as a collective unit to address climate change and build our resiliency is the most effective way to prepare for the changing water resources situation.

Tony also stressed the importance of respect from the federal government, treating them as sovereigns rather than stakeholders. To accomplish this, he said, the US

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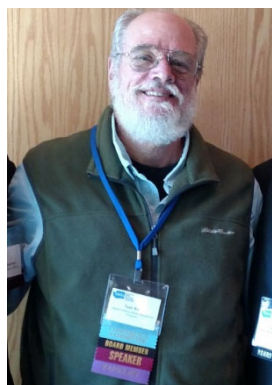
government should limit enforcing mandates, seeking instead to defer to the states and coalitions like the Council to manage water resources in a more effective regional method. And likewise, Willardson recommended that states treat their constituent entities with the same sovereignty, giving them the flexibility to innovate and tailor their responses to challenges as they see fit. Lastly, Tony acknowledged that the specific circumstances surrounding tribal lands introduce another set of specific yet no less important challenges.

SESSION 1: CHANGES TO WATER QUALITY AND WATER SUPPLY

Scribe: Tom FitzHugh Water Resources Scientist – Stantec Consulting

Session 1, moderated by Carrie Sessions of the Washington Department of Ecology, included the following speakers: Tom Ring, Mindy Roberts, Gretchen Greene, and Rachael Paschal Osborn. They covered the following topics:

Tom Ring, retired, presented on the evolution of groundwater regulation in Washington, with an emphasis on the Yakima Basin. Prior to addressing his main



topic, he discussed the implications of climate change for hydrology in Washington, emphasizing in addition that some anthropogenic impacts have been even more significant, and we should be sure not to opt for climate solutions that exacerbate the very problems caused by climate change itself. Returning to the main topic, he recounted his review of 43 water rights decisions made by Ecology in the

Yakima Basin. The primary issue here for these 43 decisions (and subsequent water rights permits) was that pumping from groundwater wells will capture river flow over time, and because groundwater is cooler and cleaner, such pumping will make the river hotter and more polluted. In the end Ecology admitted that the concerns were valid, and a Memorandum of Understanding (MOA) was developed between the Yakama Nation, Ecology, and the U.S. Bureau of Reclamation related to groundwater management in the Yakima River Basin. The MOA led the three agencies to contract with U.S. Geological Survey (USGS) to develop a groundwater model that could be used as a technical platform for future decisions, and engendered cooperative management between the three agencies that has been very successful.

Mindy Roberts, Washington Environmental Council, presented a summary of water quality conditions in Washington, focusing on rivers and streams in the Puget Sound and the Columbia River basin. After discussing the overwhelming support by people in Washington for clean water (from a 2020 poll), she summarized the status of a number of pollutants in Washington. These included fecal coliform, enterococcus, water temperature, nutrients, dissolved oxygen, pH and acidification, sediments/solids, and metals and toxics. For each she summarized the pollution sources, why they matter, and possible solutions. Roberts concluded by summarizing

areas of success and failure in managing water quality in Washington. Some examples of successes are reductions of metals in the Spokane River, control of certain intense sources such as the Grays Harbor shellfish beds, and regional cooperation efforts. Some examples of failures presented were lack of progress in improving water temperatures, PCB levels that impact juvenile salmonid survival, and the disproportionate impacts of water quality problems on black, indigenous, and people of color, and tribal communities.

Gretchen Greene, Greene Economics, presented a profile of water use in Washington, based on data from a 2018 report by USGS. She began with a quiz to test the knowledge of conference participants on water use topics. Then she summarized water use in Washington by water use sector and county, showing total and per capita use. 59% percent of water in Washington is used for agriculture, with second and third most frequent uses are domestic/municipal (23%) and industrial (10%). Greene next summarized sources of supply overall and for different sectors. The overall split between surface water and groundwater water is 64%/36%. Trends over time were then discussed, noting the encouraging trend that while population has steadily increased since 1950, total water use held steady from 1975 to 2005 and has been declining since 2005. Water conservation and increased efficiency are the reasons for this latter trend. These data were further explored by water source and for different use sectors. The presentation concluded by discussing future challenges, such as continued population growth, more intensive rainfall and flooding, and the increased need for water for fire suppression.

Rachael Paschal Osborn presented on water rights mitigation in Washington, focusing in particular on the history and issues with out-of-kind mitigation. Water right mitigation is a way for water rights appropriations to compensate for environmental impacts, and was until recently only defined as in-kind, where the amount of water used has to be replaced by an equal amount, “bucket for bucket.” Examples were shown of out-of-kind mitigation proposals that were rejected in 1996, 2000, and 2014, which helped establish the rules for acceptable mitigation (as in-kind). In the *Foster v. Ecology & Yelm* case in 2015 the court held that Yelm’s out-of-kind mitigation plan did not mitigate injury to the senior water right. However, the recent ESSB 6091, codified at RCW Ch. 90.94, does authorize out-of-kind mitigation, including five pilot projects. Rachael concluded with a number of observations, including that out-of-kind mitigation is a bad idea if your goal is ecological preservation, and listed five reasons why out-of-kind mitigation does not compensate for the impacts of depleted streamflow.

SESSION 2: MARKET SOLUTIONS AND RESPONSES TO CHANGE

Scribe: Gretchen Greene, Green Economics, LLC

This session comprised four excellent presentations on market-based solutions to changing water needs, regulations, uncertainty, scientific understanding, and technologies. Mitchel Kunstel, a power manager with Seattle City Light explained a new market for power that allows electricity generators to optimize their hydropower delivery and in turn their water use and costs. Greg McLaughlin, Senior Program Manager with Washington Water Trust, presented how recent water market transactions have resulted in conservation and instream flow benefits. From Clark Public Utilities in southwest Washington, Doug Quinn spoke about water rights from the perspective of a water utility and water conservation. Finally, Richael Young, who co-founded Mammoth Water, discussed how public benefit corporations function to make water trading in the agricultural sector more affordable, accessible, and equitable. Each talk is summarized below.

Water Management in the Energy Imbalance Market

Mr. Kunstel shared a description of the recent effort by Seattle City Light (SCL) to join the Energy Imbalance Market (EIM) and bring hydropower into the existing market generation mix. The EIM minimizes costs through real-time balancing of supply against demand by transferring energy from one Balancing Authority Area (BAA) to another. The EIM operates in intra-hour optimizations of hydro, wind, solar, coal and gas power to serve demand across the western U.S. for all participants. The benefits of joining the market include a reduction of required reserve holdings needed for a BAA to provide backup power as a safety net. In other words, with the larger pool of EIM participants, the variability of power generation may be “smoothed out” through geographical and generation diversity. Further, the market reduces carbon emissions through the integration of renewable energy sources and reduction of green generation curtailments.

Mr. Kunstel explained how the EIM operates, emphasizing that each of the 11 BAA provides resource generation specifications, locations of power generation and demand. He noted that not all generators participate in the market. The real time optimization allows SCL to further accommodate its flood control, fish survival, recreation, and power generation with greater efficiency through five-minute dispatch intervals. For example, if surplus wind is available in Wyoming, SCL can purchase that wind every 5-minutes and reduce the water needed for internal hydro generation; or SCL could sell hydropower to California, effectively reducing net power costs for SCL customers. Prior to joining the EIM in April of 2020, a similar type of shifting could occur within SCL, but only with select counterparties on an hourly basis. SCL has improved the water management on both run-of-river (Boundary) and cascading (Skagit) hydro

systems through EIM participation. The first five months of have brought new challenges and opportunities that SCL is excited to tackle over the coming years. They are hoping this market will provide electricity grid reliability for years to come.

Water Markets for Instream Flow

Greg McLaughlin presented some of ways that Washington Water Trust, a non-regulatory, nonprofit, works to improve and protect stream flows and water quality throughout Washington State. The goal of WWT is to use voluntary, market-based transactions and cooperative partnerships to create balanced solutions so fish, agriculture, business, and wildlife can thrive. Greg began by showing the relationship between streamflow and fish habitat, including how earlier snowmelt is affecting the hydrograph in terms of low flows, temperature, fish stranding, oxygen, and flow barriers. The presentation covered some of the fundamental regulatory principles surrounding how water transfers to instream flows. For example, that the point of diversion may be changed to further downstream, which can re-water specific reaches. Meanwhile the priority date for the water right will remain the same. Mr. McLaughlin emphasized that water transfers can improve the bottom line for agricultural producers while helping to identify inefficiencies in agricultural water use. In doing so, there is a shift to potentially greater benefits from the water as instream flow than in productive agriculture.

Several examples of water transactions for instream flow improvements were used to demonstrate how water markets benefit the natural environment and the agricultural producers who sell the water right. The Teanaway River in the Yakima watershed has been a focus for WWT for many years. Instream flow rights have been purchased mostly from agricultural uses. The Teanaway is managed as an entire watershed paying attention to flows at each mile along the river. WWT is working to smooth out flows and decrease the ‘flashiness’ of the river. Another example is Taneum Creek in the Yakima basin, where instream flow transfers have occurred and agricultural producers have found alternative sources for summer and winter water. Greg ended the presentation with attention to racial equity, reviewing the history of discrimination in land and water rights, and pointing out the decline in participation in agriculture by Indian and black farmers which may have been aggravated by the privatization of water rights. He identified a high priority challenge to reconnect people of color with water.

Municipal Market Solutions to Changes in Water Resources

Doug Quinn, from Clark Public Utilities (CPU) covered three themes related to how the district uses market solutions to bring about desired outcomes for water users

in southwest Washington. The first theme was about the role of the utility in supporting the Watershed Resource Inventory Area (WRIA) Act, which calls for plans to manage the watersheds. As WRIA plans affects businesses and utility customers, they have been involved in the planning process. There are endangered species listed within WRIs #27 and #28, and so the utility has invested over \$1 million annually in supporting improved habitat and classroom education about salmon. Also, the utility has worked with others to create a water right reservation for exempt wells.

Addressing water rights, Mr. Quinn explained that water rights can be the highest risk element to operating the utility. The utility has ample secure water rights, but maintaining and managing those rights takes time and money, which in turn affects the cost of the water. For example, the cost of drilling can be steep, and legal challenges are costly.

Finally, Doug addressed water use and conservation within the district, which supplies water to over 90,000 customers. A combination of technology and rate design solutions are assisting the district respond to changing water demand and regulations related to water quality. He provided several graphics demonstrating how water use throughout the year was fairly predictable. CPU uses tiered rates, meaning that customers who use more water pay higher rates for that water. This helps generate revenue to offset the investments needed for water production and treatment. Quinn pointed out that Clark Public Utilities has lower operating costs than other comparable water utilities. He also described an automated system that was making backflow testing more affordable for users.

Richael Young - *The High Costs of Water Trading: How Transaction Costs Price Out Small Deals That Could Lead to Big Wins for Agriculture*

Richael Young is working on smart markets, or electronic clearinghouses, for surface water and groundwater. She is the co-founder of Mammoth Water, which has

created smart markets that have reduced search and transaction costs to trade water for thousands of America's food producers, making water trading more affordable, accessible, and equitable. Her presentation began with acknowledgement that water is life, and water has been traded for over 1,000 years. However, water right transactions are expensive and time-consuming to carry out with contract terms, costs, regulatory requirements, technical information and other procedural costs. Young pointed out that due to these transaction 'costs' opportunities for more efficient water use are lost. To address these costs, Mammoth Water works with agricultural producers to facilitate water trading and reduce transaction costs. They support the consistency in record keeping and data management, provide tools for rapid scoring and grouping of water transfers, and work through offset strategies to provide hedges for farmers. Water markets can provide a new revenue stream for agriculture that motivates conservation, and more efficient use of water can provide more jobs, more food, and more tax revenue. Richael emphasized the importance of monitoring and enforcement as a means of strengthening a water right.

Several questions were posed after Ms. Young's talk, including her thoughts on remote sensing, seasonal transfers, and navigating around treaty rights. She responded that for remote sensing, there are the advantages of consistent and uniform approach for measuring consumptive use and that it is low cost. Disadvantages include high rates of error at the field level, and questions of legal validity. Regarding seasonal transfers, Richael was in strong support and suggested that seasonal transfers can provide greater values than permanent transfers. With respect to treaty rights, Ms. Young echoed many that basin adjudications simplify transactions tremendously, but also said that in non-adjudicated basins the markets don't seem to be affected much.

SESSION 3: TECHNOLOGICAL RESPONSE AND SOLUTIONS TO CHANGE

Scribe: Stephen Thomas, Shannon and Wilson

Following the lunch break, the focus shifted to the development and application of technological-based solutions to counter the effect of climate change on water resources. Leading off, **Armin Munevar of Jacobs Environmental** provided a high-level overview of some of the innovative tools and the work being performed in California at a state- and regional level. In his talk, Armin argued that the time has arrived for us to move beyond the process of understanding climate science and impact prediction. Rather, we should be conducting resiliency planning to support the decision making process, and use of a portfolio approach rather than implementing individual projects to counter the scale and dynamic

effects of climate change. These portfolios should be robust and adaptable, and they should consider strategic investment. Armin provided examples of the statewide work being performed for the [Dept. of Water Resources](#) (DWR) for water conveyance, storage and flood protection, and an adaptable plan being developed by [Sonoma Water](#) to improve their water system resiliency. The Central Valley project considers four sub-basins that each have quite different predicted climate change impacts. The focus was on options of reducing demand, increasing supply, and improving operational efficiency, resource stewardship, data management, and institutional flexibility. Each option was evaluated for a variety of criteria to develop seven reference portfolios. These portfolios were further evaluated to consider their ability to meet future demand and cost effectiveness. The

Sonoma adaptation project focused on improving the system's resiliency in the face of projected changes in temperature, sea-level rise, precipitation, drought, wild-fires (which effect water quality conditions), flooding (driven by atmospheric river conditions) and developing mitigation options through a detailed vulnerability and risk assessment study. Additional projects were developed to move the needle on climate change response. The outcome was a portfolio that considered several actions linked to target programs aimed to improve long-term water supply resiliency.

Dr. Thomas Quinn of the University of Washington then provided his personal perspective on past and present challenges facing Pacific Northwest fish and their habitat. He first highlighted some of the more important actions of the past 50 years, including the threat to blue whale populations, establishment of Earth Day, and several landmark legal protections in the 1970s. He credits the concept of "consciousness raising" as having a beneficial effect on the environment. Thomas then suggested that some activities that have been previously considered detrimental to fish and their habitat may no longer be of primary concern, including logging, over-fishing and interception fishing. Improvement of tribal treaty rights and involvement of NGOs and other well-funded concerned groups have been highly valuable in moving the needle in favor of fish. Increased communication and connection of US and Canadian fish scientists with their Russian counterparts has been greatly welcomed, as has better understanding of the long-term and widespread impact of chemicals on the fish lifecycle. The goal is for salmon to enjoy cool, clean, complex, but connected habitats. New technology, including monitoring techniques and data management tools, has enabled scientists and governments to shift their focus from addressing the challenges to a global scale, while recognizing that ongoing local efforts (such as habitat improvement and dam removal) are still highly valuable in achieving this goal.

Next, **Seattle Public Utilities' Tracy Tackett** provided an overview of the nature-based, green stormwater infrastructure ([GSI](#)) tools and programs that her utility has and is continuing to develop and implement in a mostly urban setting. The overarching objectives of these strategies are to reduce stormwater volumes and pollution while improving the hydrologic environment and fish habitats, all while achieving regulatory requirements. In essence, GSI works by mimicking nature, retaining and slowing down stormwater, providing pollutant removal, and enabling infiltration where soils permit. Part of SPU's planning has been to identify and assess the main risks – these are population growth, health inequity, climate uncertainty, seismic risks, permit requirements, and affordability. In doing so, they

are looking for win-win solutions that take advantage of opportunities – such as incorporating GSI systems into new urban redevelopment schemes cost effectively rather than retrofitting. Tracy highlighted several examples of GSI recent and ongoing GSI solutions in the Seattle area as well as further afield. Locally, these include projects in Madison Valley (subsurface storage with increased green space), Thornton Creek (bioswales and pollutant removal), and Magnuson Park (wetland and vegetated space). She also promoted the importance of community involvement, not only in developing projects but also construction and maintenance, to ensure the maximum benefit is gained and all members of the socio-economic scale have opportunities to benefit.

Finally in this session, **Randy Reber of Round Lake Farms LLC** gave his insights into the recent advances and applications of developing irrigation technologies for his large Grant County farm. After setting the stage by highlighting some of the challenges his farm faces - notably, availability of irrigation water, and uncertainties in weather patterns and markets - he provided some background into farming irrigation practices. His farm is irrigated by water from both the Columbia Basin Irrigation Project and groundwater from (vulnerable) shallow and deeper basalt aquifer wells. He has been deploying [Precision Agriculture](#) for several years to improve the efficiency and cost effectiveness of the overall farming process. The key components include the use of weather stations, soil moisture monitoring equipment, smart phone technology, and drones to collect and synthesize critical information (such as infrared surveys), all to optimize decision making. To account for variations in soil and crop-yield conditions across a single field, part of the system is variable rate technology (VRT) which allows him to adjust the irrigation rate at an irrigation nozzle level for central pivot equipment. As such, he is able to optimize the use of available water – minimizing evaporation and runoff losses, and energy costs. Despite this progress, in a tight margin business, funding for these new tools remains a challenge and Randy feels that government assistance will be necessary to bridge the gap between farm's budgets and the benefits to the public.

AWRA-WA MENTORSHIP PROGRAM

By Tom FitzHugh, Water Resources Scientist – Stantec Consulting

Just a reminder that AWRA-WA has a mentorship program whose goal is to connect young professionals and students in the field of water resources with experienced professionals who share a similar specialty and are interested in building a mentoring relationship. Information on the mentorship program can be found on our website, and anyone who is interested in being involved (either as a mentor or mentee) can apply/register there. Mentees who apply/register will be connected with an appropriate mentor based on their stated interests. For any questions about the mentorship program, please contact Tom FitzHugh (thomas.fitzhugh@stantec.com).

SESSION 4: POLICY RESPONSES TO CHANGE

Scribe: Katherine Beeler, Associated Earth Sciences, Inc.

The final session of the day was a panel discussion on policy solutions and responses to change. **The panelists included Washington State Senator Judy Warnick, Kittitas County water resource manager Arden Thomas, and Maia Bellon of Cascadia Law Group**, who served as Ecology director from 2013 through January of 2020. **Yakama Nation agricultural development director Brady Kent** was scheduled to participate but did not attend due to technical issues.

Moderator Adam Gravely of Van Ness Feldman primed the discussion, inviting the panelists to step back and broadly address Washington water policy in 2020. The panelists were asked to consider the various water supply, technological, climate, and economic changes discussed during the conference and identify their highest priority issue or change going forward. Senator Warnick said that her highest priority regarding water use is to get Odessa aquifer farmers off their wells, noting ongoing issues with groundwater level decline, higher water temperatures, and contamination. Ms. Bellon answered that climate change is her top priority, as it impacts the entire water system. Ms. Thomas, speaking from her position as a local water manager, pointed out that greater recognition of the connection between groundwater and surface water has led to major changes in local governments' water management role.

Second, Mr. Gravely asked whether new policies should target water end users, water right holders, the natural environment, or the market economy, to which all three panelists answered, "All of them!" In their follow-up comments, the panelists emphasized working together to understand and meet the needs of different types of water users. While agreeing that good water policy must meet a broad range of needs, Ms. Thomas used the example of domestic water needs in Kittitas County to demonstrate that specific questions may require specifically targeted approaches.

The third question addressed equity in water availability, and what level of sacrifice might be required for us to meet

our goals. Senator Warnick commented that farmers already do a lot of sacrificing in the sense that they are subject to uncertainty in weather, shifting markets, and diseases that affect crops and livestock. She noted that conversations about equity can include race, location, and different types of water uses. Ms. Bellon called on the water resources community to consider impacts to underserved populations, reevaluating historical practices and integrating more perspectives. Ms. Thomas pointed out that sacrifice generally is not chosen. Some of the landowners she works with don't have the option of drilling and using a well on their property, and they aren't choosing that circumstance. She posed a question for reflection: What opportunities do we have to advocate for others?

Fourth, Mr. Gravely asked when it is appropriate for government to get involved in effecting change with regards to water use. The panelists' responses reflected their individual experiences in state and local government. Ms. Thomas said that it is important to evaluate whether there are benefits to government involvement and if the community supports the intervention. In Kittitas County, citizens had concerns and wanted the County to step in. Ms. Bellon answered that the State needs to be closely involved in managing water because water is a public resource. Noting challenges faced during her time as Ecology director, she said that Ecology needs the authority to make decisions regarding junior and senior water rights, even in non-adjudicated basins. Senator Warnick answered that the state should become involved before a crisis is reached, and expressed her preference for addressing issues through good legislation rather than resolving them through the courts.

Mr. Gravely ended the discussion with a final question, encouraging them to respond in a single sentence: If you had a magic wand and could wish for one piece of information or data that doesn't exist now, what would it be? Ms. Bellon and Ms. Thomas would want detailed water use information, as obtained through metering. Senator Warnick would want information on consumptive use for both domestic and irrigation uses.



AWRA-WA board members at the 2019 Annual State Conference – Hopefully back in person in 2021

Special thanks to Tom FitzHugh, Jenna Mandell-Rice, and the rest of AWRA-WA's Conference Planning Committee and student volunteers for another amazing conference. See you all again next year!

AWRA – WASHINGTON SECTION ANNUAL MEETING

The AWRA Washington Section [will convene its Annual All Members Meeting virtually](#) on December 15, and is conducting elections for the 2021 Board of Directors. Our elections process will be electronically administered. Each AWRA-WA member in good standing will be sent a link to a secure ballot and can vote for up to 16 individuals for the 2021 Board, with the option to add write-in candidate(s). Biographies of those nominated for the 2021 Board Candidate Slate are presented on the following pages for review. Election results will be announced at the December 15 Annual All Members Meeting.

The Board of Directors includes up to 16 Directors, plus the past President. All AWRA-WA members may attend the Annual Meeting and nominate other candidates. Board Members actively participate and support the following activities: attending monthly Board Meetings, refining section policies, running Dinner Meetings, organizing the Annual Conference, securing articles for newsletters, supporting the student chapters and establishing new student chapters, and other activities.

The 2020 Board of Directors presents the below candidates for the 2021 Board:

Rabia Ahmed	Felix Kristanovich	Stan Miller	
Tyson Carlson	Jessica Kuchan	Tom Ring	Stephen Thomas
John Chandler	Jenna Mandell-Rice	Katherine Ryf	Patrick Vandenberg
Amanda Cronin	Greg McLaughlin	Jennifer Saltonstall	
Tom FitzHugh	Jason McCormick	Carrie Sessions	

CANDIDATE BIO'S



Rabia Ahmed - Rabia is a Principal Economist and Managing Partner at Green Economics, LLC. She has over 16 years of experience in water and natural resource economics, policy and regulatory economics, litigation support, and international development, with previous work at Maul Foster & Alongi, Ramboll, Cardno, and Northwest Economic Associates. Her expertise includes studying water laws and water markets, assessing and valuing surface and groundwater rights in that context, conducting assessment of water rights, carrying out water supply security analyses, supporting the water rights applications process, and conducting cost-benefit and feasibility analyses of water projects. Rabia has carried out a number of water management projects in more than twenty-five US States and internationally. She also has many years of experience in the international development sector, and worked directly with communities in some of the remotest areas of Pakistan and Bangladesh. Rabia has an MS degree in Economics from Portland State University. She lives in Lynnwood, Washington, with her husband, two children, and a beautiful cockatoo. In her spare time, she likes hiking and sailing with her family.



Tyson Carlson - Tyson is a Senior Associate Hydrogeologist with Aspect Consulting with 20 years of experience specializing in water resource development and water rights. Serving private and public sector clients, Tyson's water rights experience includes both new appropriations – municipal, agriculture, fish propagation, and commercial/industrial purposes – and transfer/change of existing rights, including use of the State's Trust Water Right Program for purposes of instream flow, habitat, and mitigation through water banking. Tyson's strong background in analytical and numerical groundwater modeling is often used in the development of site-specific conceptual models describing groundwater-surface water interaction, saline intrusion, well hydraulics, and aquifer sustainability. These skills are also used in Tyson's work in large-scale hydrogeologic characterization – such as regional tunnel alignments, contaminant fate and transport modeling, and construction dewatering design. Tyson has a BS in Soil, Water, and Environmental Science and a MS in Hydrology from The University of Arizona. Outside of the office, he can be found skiing the deepest of Cascade powder, on his bike, or fly fishing his favorite waters.



John Chandler - John is the technical lead of water resources at Puget Sound Energy. He manages nearly two million acre-feet of water a year (on average) at the Baker River Hydroelectric Project for multiple objectives including flood management, the environment, recreation, power production, and ancillary benefits. John has presented to audiences all over the country, from fourth graders to international technical groups, on the topics of water management, adaptation in a changing climate, and hydropower in general. John received his P.E. in Washington State in 2012 and M.S. focused in water resources and environmental engineering from the University of Maine at Orono in 2008.



Amanda Cronin - Amanda is a Manager at AMP Insights. She has sixteen years of professional experience in water rights, water transactions, stream restoration and conservation program design and implementation. At AMP Insights, Amanda has worked on water banking in the Snoqualmie Valley, groundwater mitigation bank design and implementation in Arizona, as well as other water transaction programs in Washington, Arizona, California and Wyoming. Some of Amanda's current projects include, technical input to the Walla Walla Water 2050 Strategic Plan and assessing irrigation efficiencies for flow enhancement in the Klamath Basin for California Trout. Before joining AMP, Amanda was a Project Manager at the Washington Water Trust for more than a decade. At the Water Trust, Amanda led the development of both the Walla Walla Water Exchange and the Dungeness Water Exchange, water banks that offset the impact of new consumptive uses on stream flows. Amanda holds a MS with distinction in Environmental Science and Policy from Northern Arizona University and a BA in Biology- Environmental Studies from Whitman College. Amanda is based in Seattle and enjoys spending time outside; backpacking, mountaineering, cross country skiing, gardening and playing ultimate frisbee.



Tom FitzHugh - Tom FitzHugh is a Water Resources Scientist with Stantec Consulting, in Bellevue, Washington. He specializes in hydrologic modeling of surface water systems, including reservoir and water supply system operations, riverine and reservoir temperatures, and rainfall-runoff processes. His current work is analyzing water supply operations for water agencies and other clients in California's Central Valley. Prior to joining Stantec in 2015, he worked for the Bureau of Reclamation in Sacramento, California for 5 years, where he conducted modeling for long-term planning studies such as the Shasta Lake Enlargement study and analysis of new environmental flow standards in the San Joaquin River Basin. From 1999-2009 he worked for The Nature Conservancy in Chicago and Olympia, where his responsibilities were regional conservation planning, analysis of environmental flows, scientific software development and training, and GIS. He has an M.S. in GIS and Remote Sensing from the University of Wisconsin-Madison, and a B.A. in Political Science from Lawrence University. In his spare time he enjoys hiking, learning and practicing his Spanish, and following the Seattle Sounders and the Reign.



Felix Kristanovich - Felix is a senior water resources consultant with Ramboll in Seattle.. He has 32 years of professional experience in the United States and overseas working on watershed analysis, streamflow restoration projects, water quality monitoring programs, environmental impact studies, hydrologic field investigations, floodplain analysis, and design and modeling of storm water systems. Felix has conducted evaluation for industrial clients, banks, international development agencies, and federal agencies. Felix is actively involved in several professional societies, including AWRA, where he organized 2005 and 2009 National AWRA Conferences in Seattle, and 2013 National AWRA Conference in Portland, Oregon. Felix moderated technical sessions at the 2012, 2013, and 2019 National AWRA conferences, and presented technical papers at numerous AWRA conferences. Felix enjoys backpacking, hiking, telemark skiing and outdoor photography, and sea kayaking with his wife June around Puget Sound and in Alaska.



Jessica Kuchan - Jessica is a partner with Confluence Law, PLLC where she helps clients with issues relating to water resources, land use and natural resources. Jessica works with local governments, non-profits, and private water users to find innovative solutions to complex water resource issues. Prior to law school, Jessica was an environmental scientist with the King County Department of Natural Resources researching the impact of water quality changes on fresh water mussels, macroinvertebrates and salmon. Jessica received a BS in biology from Gonzaga University and juris doctor from Lewis and Clark Law School with a certificate in Environmental and Natural Resource Law.



Jenna Mandell-Rice – Jenna is a senior associate in the Seattle office of Van Ness Feldman LLP. She practices in the areas of water, natural resources, and environmental law, with a focus on water resources development, civil litigation, and public policy. Jenna has worked with municipal water utilities and suppliers to address water rights, water supply and water quality challenges, and has assisted clients in finding solutions for municipal and agricultural water supply. She also helps clients navigate complex regulatory, permitting, enforcement and litigation matters under a range of environmental statutes, including the Federal Power Act, Clean Water Act, Safe Drinking Water Act, Washington State Environmental Policy Act, National Environmental Policy Act, and Endangered Species Act. Prior to joining private practice, Jenna served as a law clerk for the Council on Environmental Quality (CEQ), an office within the Executive Office of the President that coordinates Federal environmental efforts and works closely with agencies and other White House offices to develop environmental policies. She also served as an intern for the Honorable Christine M. Arguello in the U.S. District Court for the District of Colorado



Katherine Ryf - Born and raised in rural Franklin County, Katherine is a native of the rolling dry land wheat hills of Kahlottus, Washington. She graduated from Eastern Washington University with a BS in Environmental Biology. She has three daughters immersed in Quincy's community, public and private schools. Katherine manages the Quincy office of Landau Associates. Katherine has nearly 20 years of experience with water rights and water supply solutions. She is highly knowledgeable of Washington and federal water laws, agricultural practices, and real estate acquisition. Prior to joining Landau Associates, she served as a water right analyst for the Washington State Department of Ecology (Ecology) and water right specialist for the Washington State Department of Fish & Wildlife. Katherine represented Ecology as a liaison to the US Bureau of Reclamation, the Columbia Basin Irrigation Districts, municipalities, water users and local stakeholders to implement integrated water supply solutions. While living in Four Lakes, Washington she served as the Board of Directors for the Friends of Turnbull National Wildlife Refuge. Living in Quincy, Washington, Katherine currently serves on the Grant County Economic Development Council Board of Directors, and is a regular participant of the Ecology Water Resources Advisory and Palouse Basin Aquifer Committees.



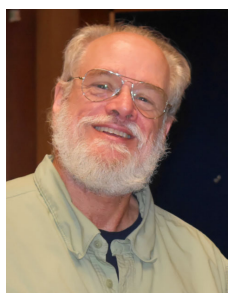
Greg McLaughlin - Greg is a Senior Program Manager with Washington Water Trust, where he has worked since 2006, opening the Ellensburg Field Office in 2008. His instream flow and water resource management projects have provided permanent streamflow to rivers tributaries throughout Washington State. His work includes water right reviews, connecting project benefits to salmon recovery plans, and shepherding those projects through the Ecology review process. He is a frequent presenter statewide on water rights valuation and transactions, trust water, and water law. Greg has worked since 1997 on collaborative resource management projects from his hometown in rural Missouri to the Mekong River in Thailand. Greg currently lives in Lynnwood, WA, and spends his free time as a youth pastor, traveling and doing community service with his wife and four sons. He is also the AWRA-WA newsletter editor.



Jason McCormick – Jason is the Principal and founder at McCormick Water Strategies (MWS) with fifteen years in water resources. Jason is recognized regionally as a water rights and water transactional expert. In 2015, Jason formed MWS after working in the private and non-profit sectors. His formative experience includes ten years specializing in water transactions, trust water, mitigation banking, permitting and water rights administration, water right due diligence and examination, representing private and conservation buyers and sellers, and geospatial water rights evaluation across Washington State. Early in his career, Jason worked as a permit writer for the newly formed Washington State Department of Ecology, Office of Columbia River, where he focused on water right permitting, project planning, geospatial water resources mapping, program outreach, and coordinating initial grant solicitations. From his experience in the private, non-profit, and public sectors, he excels at water right permitting and administration, water transactions, water banking, water right evaluations and due diligence, and complex water resources problem solving. In addition, he draws a strong appreciation for the communities and unique values of Washington State from his local roots in Central Washington.



Stan Miller - Stan is semi-retired, and currently doing water resources consulting as Inland Northwest Water Resources. Prior to venturing into retirement, Stan held the position of Program Manager for Spokane County's Water Resources Section in the County Utilities Division of the Public Works Department for over 20 years. The prime focus of Water Resources is the regional aquifer protection program. In that capacity he worked toward integrating the groundwater protection efforts of all municipalities and water purveyors using the Spokane Valley-Rathdrum Prairie Aquifer. In addition to working on this program at the administrative level, Stan has developed technical information and conducted local studies on the potential impacts of storm water infiltration on ground water quality and the interaction of the Spokane River and the Spokane Valley Aquifer. Stan is a long-time member of the AWRA-WA Board and a past president of the Chapter. Away from work, Stan enjoys canoeing, backpacking, running, and working on the restoration of a turn-of-the-century home.



Tom Ring - Tom served as a hydrogeologist with the Water Resources Program of the Yakama Nation from 1990 until his retirement in late 2019. He worked on a variety of projects involving groundwater and surface water quantity and quality, water rights, irrigation and fisheries issues and planning for future water needs. He continues to be active in the Managed Aquifer Recharge component of the Yakima Basin Integrated Plan. Tom has BS and MS degrees in geology from Central Washington University and Northern Arizona University, respectively. He has taught geology and hydrogeology classes at Central Washington University and is a licensed geologist and hydrogeologist in Washington State. He enjoys getting out in the mountains, coasts, and deserts of the American west.



Jennifer Saltonstall - Jenny is a licensed Hydrogeologist in Washington State, a Principal at Associated Earth Sciences, Inc., and consults on Puget Sound area hydrogeology, geology, and geologic hazards assessments for both private and public sector clients. She is a leader in stormwater infiltration feasibility and practical stormwater infiltration site investigation and design, both for shallow conventional systems and deep stormwater recharge Class V UIC wells. Jenny is an expert in complex Puget Sound stratigraphy and has a fundamental understanding of sub-surface “plumbing” system in our area from managing hundreds of infiltration projects from design through construction. Jenny provides senior review for geologic and hydrogeologic studies, is a regular contributor at technical conferences, and has been an invited speaker on infiltration components for “green” stormwater management seminars. Outside of work, Jenny and family love backpacking, board games and backyard projects.



Carrie Sessions - Carrie is the Policy, Legislative and Economic Analyst for the Department of Ecology's Water Resources Program. In that role, she leads discussions about statewide policy issues, analyzes proposed rules and legislation, and works with the legislature on changes to water law. Prior to joining Ecology, Carrie did policy and economic analysis on the state, federal, and international levels, including work for consulting firms and for the United Nations Environment Program. She also spent several years teaching applied leadership. Carrie is a graduate of Colorado College and holds a MPA and MS from the University of Washington in environmental policy and economics, with an emphasis in water resource management. She graduated from all three programs with top academic honors.



Stephen Thomas - Stephen is lead hydrogeologist in the Seattle office of Shannon & Wilson, Inc. He has 28 years of experience as a hydrogeologic and water resources consultant. He manages and performs technical aspects of hydrogeological investigations for groundwater resources development, wellhead protection and groundwater management, groundwater contamination and waste disposal, dewatering, and environmental projects. A native of the United Kingdom, Stephen moved to Seattle in 2001, having previously lived in Los Angeles since 1992. He holds a BS in Geology from the University of Cardiff (Wales) and a MS in Hydrogeology from the University of Birmingham (England), and is a licensed hydrogeologist in the states of Washington and California. Stephen has been on the AWRA-WA Board since 2009, and has held positions of Vice-President, Secretary, and Treasurer, and has chaired the Dinner and Sponsorship committees. Stephen enjoys many outdoors activities, notably triathlons, skiing, and rugby football coaching, as well as annoying his neighbors with his guitar playing.



Patrick Vandenberg - Patrick, a native of Southern California, has called Seattle home for about three years now. He is the Senior Civil Engineer at Seattle Public Utilities District, where he specializes in hydrology and hydraulic modeling. He received his BS from UCLA and his MS at UW, both in Civil Engineering. He was formerly the University of Washington Student Chapter Representative to the AWRA-WA Board. Patrick previously worked for King County as a hydraulic modeling engineer in the Wastewater Treatment Division. Before moving to Seattle, he worked as an environmental engineer for AECOM in Long Beach, CA. He enjoys playing ultimate Frisbee and volleyball. He is also the AWRA-WA Webmaster.

DINNER MEETING UPDATES

November Dinner Meeting

By Emily Dick, Project Manager – Washington Water Trust

Brett Shattuck, a Restoration Ecologist with Tulalip Tribes Natural Resources, kicked off the November AWRA-WA lunch meeting with an ever appropriate reminder: The People of the Tulalip Tribes came into this area as the glaciers receded, over 12,000 years ago. They were here as the first salmon swam into the newly exposed and running rivers of the Snohomish and its tributaries.

With such beautiful imagery of the return of life, it was almost impossible to miss the parallel to the focal lunch topic -The Pilchuck Dam Removal- which offers a return of 37 miles of the Pilchuck River. The Pilchuck Dam was built in 1912 to collect drinking water for the City of Snohomish and eventually degraded into disuse. The City of Snohomish no longer used the dam and the 60 foot structure posed a liability and a barrier to migrating salmon. The dam cut off fish migration for the upper 37 miles of high quality habitat and roughly a third of the Pilchuck River. The Tulalip Tribes and City of Snohomish partnered to achieve the multiple benefits of dam removal. Prior to dam removal, community engagement and feedback were essential to the project process. Project partners held an open house, distributed brochures and door hangs, and adjusted to virtual COVID-19 engagement with videos, story maps, and a website. Significant modeling and analyses were completed to look at the impact of dam removal. The Pilchuck Dam was removed in the summer of 2020 and robust monitoring was completed by USGS during and following dam removal. Additionally, salmon use was monitored. Pre-dam removal, no Chinook were found above the dam. Following the dam removal this year, there have been at least 20 Chinook spotted upstream of the dam. The Pilchuck Dam Removal came in under budget, with a total cost of 1.3 million. As echoed by many attending, a remarkably low price to return a piece of the legacy that these lands and rivers hold.

For more information see: www.pilchuckriverdam.com

DINNER MEETING UPDATES

October Dinner Meeting

By Felix, Kristanovich, PhD, PE, Senior Water Resources Consultant - Ramboll

On **October 22, 2020**, the AWRA-WA Section hosted a dinner meeting virtually featuring, **Tess Gardner, Technical Lead from AMP Insights**. Tess spoke about cost effectiveness of instream flow restoration. She focused on the restoration paid by transactions with irrigators that has gained popularity as a key conservation tool for redistributing water within the confines of prior appropriations. Tess explained performance metrics to measure this effectiveness (such as dollars per acre, or dollars per flow restored (cfs), and different levels where the cost effectiveness is measured (project level - micro-

scale), usually measured with one project or stream, watershed level, measured on at least 3 streams, and basin level, measured on the state level.

The variables considered as part of an estimate of cost-effectiveness have not been standardized, making it difficult to compare across projects of different types or those completed by different organizations or in different geographies. Tess showed us the advantage of using standardized data tracking to analyze cost-effectiveness at broader scales using case study from Deschutes River Basin and from other states. This event was attended by over 60 AWRA members.

DINNER MEETING UPDATES

September Dinner Meeting

By Christopher Allen, L.Hg., Senior Hydrogeologist – Associated Earth Sciences, Inc.

On September 16, 2020, the AWRA Washington Section hosted a virtual lunch meeting on federal water priorities titled “Water Priorities in Congress” presented by Brett Walton. Brett is a senior reporter for Circle of Blue an “independent, non-partisan, non-profit journalism organization” that focuses on water resource related issues.

Brett spoke about current and upcoming topics affecting water resources that are being considered by our federal government.

The COVID-19 pandemic and how it has affected water utilities has been a hot topic. Due to economic hardship brought on by the current pandemic, water utilities have observed a decrease in revenue as businesses shut down and households are unable to pay their water bills. The federal government is considering multiple options to resolve this revenue shortfall. One option may be to provide monetary assistance to households which, in turn, would allow these households to pay their delinquent utility bills. Other assistance options may include direct grants to utilities to cover late payments and use of money from the Coronavirus Aid, Relief, and Economic Security (CARES) Act passed by Congress on March 27, 2020.

The government has been busy drafting up a variety of other funding and regulatory legislation, with a water resources focus. Funding legislation includes the Water Resources Development Act (WRDA), Water Justice Act, Water for Tomorrow Act, Water Infrastructure Finance and Innovation Act (WIFIA), and Moving Forward Act that would assist with the Nation's water infrastructure, along with increased grant funding to make drinking water more affordable in economically challenged areas of the country. Regulatory legislation includes possible updates to drinking water regulations (i.e. lead and per- and polyfluoroalkyl substances (PFAS) in the Safe Drinking Water Act. Although some of this legislation appears likely to pass, such as the WRDA, other legislation appears much more dependent on the outcome of the upcoming elections so stay tuned.

September Dinner Meeting Notes, continued

The main focus in the Western States has been water storage infrastructure, with California's Sites Reservoir Project, in the Sacramento Valley being a good example. Lobbying has occurred at the federal level to increase funding for both surface water and groundwater storage projects.

Climate change continues to be a concern and reports were produced this year at the federal level. Although previous views on climate change tend to be divided along party lines, the views of the Democratic and Republican parties appear to have become more aligned and future research and development funding appears more likely. An example of this bipartisan approach is the draft language released in September 2020 by U.S. Representatives David McKinley (R-W.Va.) and Kurt Schrader (D-OR) for a proposed energy and climate plan.

Lastly, on August 4, 2020, the Great American Outdoors Act was signed into law and includes \$1.9 billion a year for maintenance of national parks and other public lands and provides \$900 million a year to the Land and Water Conservation Fund to invest in conservation and recreation opportunities across the nation. Circle of Blue publishes a free weekly and daily newsletter on federal water issues for more information see: <http://www.circleofblue.org/>

PACIFIC NORTHWEST GROUNDWATER MODELERS INTEREST GROUP BEGINS MONTHLY ONLINE SEMINARS

An informal gathering of people with an interest in groundwater modeling and allied topics began monthly online seminars in the August 2020. The seminars began from conversations between Andy Long of the USGS Washington Water Science Center and Kevin Hansen of Thurston County. Said Hansen "We realized that since COVID-19 restrictions began, we needed to continue professional communications – and thought others might be interested. Initially we thought perhaps a dozen groundwater modelers would be interested, but we got affirmative replies from many more people. Since the first August session, we have had 30-60 people participate in each online session. USGS has graciously supported the seminars with the Teams interface – a big help. We expected participants to include many modelers. But we were pleasantly surprised to see also many engineers, hydrogeologists, managers, soil scientists, health departments, Agency representatives, tribal representatives and consultants."

Topics to date have included the Spokane Valley large GSFLOW simulation, the free USGS ModelMuse interface, the USEPA's new VELMA ecohydrologic code and the University of Washington's Climate Impacts Group downscaling of climate data.

You can join the monthly seminars by contacting Andy Long of the USGS at ajlong@usgs.gov

PRESIDENT'S NOTES

Continued from page 1

Members should already have received an email from Election Buddy to vote. All of our Board members are nominated to return for next year. We're going to focus on reaching out to the membership next year to start getting new people into committees and on the Board for the future. Look out for emails in the next month or two for all of the opportunities.

I will step down and become Past President for 2021. It's been an honor to serve the AWRA Washington membership this year. I look forward to continuing to serve in an advisory role next year. As usual, if you have any questions or comments for the Board please feel free to email me directly at john.chandler@pse.com.

Stay safe and have a happy holiday season everyone!

STUDENTS – BE AN AWRA-WA FELLOW!

AWRA-WA is seeking nominations for its 2020 – 21 Fellowship Award. For the 2020 – 21 academic year two fellowships will be given. One award will be to a member of a Washington Section affiliated Student Chapter. The other award will go to a student enrolled in a graduate program at a college or university in Washington State. Both fellowships are for a full-time graduate student completing an advanced degree in an interdisciplinary water resources subject. In addition to \$2500 in cash, the award includes a one-year membership in both the State and National AWRA, a one-year subscription to the Journal of the American Water Resources Association, and admission to the Washington State Section Annual Conference. For additional information contact Stan Miller by email at samillerh2o@comcast.net

Applications are due February 14, 2021.

Apply at:

<https://www.waawra.org/People&Awards/Fellowships>

AWRA NATIONAL UPDATE

By: Rabia Ahmed, Principal Economist/Managing Partner, Greene Economics – AWRA-WA Board Member and 2019 President; incoming AWRA 2021 National Board Member

It goes without saying that 2020 was a rather different and challenging year at AWRA. Similar to the State sections, difficult decisions were made at the national level early on in the year to pivot to virtual events for the safety of our members, volunteers, and staff. For an organization with a conference-based model, it also meant less potential revenue. However, the Board, the staff, and the various committees quickly got to work to reassess member offerings, to research virtual options for the two larger in-person conferences, and to keep the robust webinar series and publications moving forward.

The previously scheduled in-person AWRA Spring Conference, the [2020 Virtual Geospatial Water Technology Conference: Complex Systems](#), was rescheduled to August 4th – 13th. AWRA's geospatial conferences are held bi-annually and are among our most popular specialty conferences. It was also the first major AWRA virtual event, but was well-attended despite the late switch to a virtual platform.

The [AWRA 2020 Annual Water Resources Conference](#), originally scheduled to take place in Florida, was also held virtually from November 9th - 11th (with pre-conference workshops held on November 8th). As always, it brought together a diverse mix of water resources professionals and students to discuss topics under the sixteen topical themes. Jan Peelen (Dutch Ministry for Infrastructure and Water Management, Netherlands Embassy in Washington DC), an internationally known expert on water resources resilience, planning, and infrastructure, kicked off the conference. Peelen's keynote was followed by several panel discussions and technical sessions, student poster exhibitions, virtual field trips and workshops, as well as the many "engagement breaks" and other interactive events. AWRA-WA was well-represented at the conference, with past and present Board Members, as well as our members attending. Some of them include John Chandler (Board Member and 2020 President), Rabia Ahmed (Board Member and 2019 President), Felix Kristanovich (Board Member and 2010 President), and Scott Kindred (Past Board Member and 2012 President). All four judged the student poster competition, while Rabia and Felix also presented in and facilitated sessions and engagement breaks. Rabia served on the Conference Planning Committee and the Virtual Conference and Technology Taskforce (VCTT), as well.

In addition to the two larger conferences, AWRA continued its [webinar offerings](#) throughout 2020. There were

ten individual webinars conducted, in addition to a three-part webinar series on Using Digital Field Tools for Remote Teaching and a two-part virtual workshop series on Diversity, Equity, and Inclusion. There are two more webinars planned in December to wrap up the year. These webinars are free for AWRA Members, but open to all for a fee. Information and recordings of past webinars remain accessible via the [AWRA website](#).

AWRA's two publications, [IMPACT](#) (free for AWRA Members) and the award-winning Journal – the [Journal of the American Water Resources Association \(JAWRA\)](#), continued to see success. Eight issues of IMPACT and five of the bi-annual JAWRA were published in 2020.

AWRA is now getting ready to welcome our 2021 Board of Directors. Two new Board Members will replace two whose terms end in 2020. Through the election of Rabia Ahmed for a three-year term (2021 to 2023), AWRA-WA will have its representative on the National AWRA Board in many years.

Last, but not least, AWRA-WA is excited to host the AWRA 2022 Annual Water Resources Conference (originally planned for Washington in 2021, but moved to 2022 due to the pandemic). We are hopeful that it will be an in-person event. Please stay tuned for a call for volunteers next year by the two Co-chairs, Rabia Ahmed and Felix Kristanovich. Many of you have already volunteered to help out in various capacities based on the previous announcement, so we will be continuing that process.

In the words of Betsy Cody (2020 AWRA President), "the AWRA culture embraces shared research and information, networking, and camaraderie, or – 'community, conversation, and connection' – through in-person conferences, membership platforms, IMPACT, and JAWRA." Be sure to [join AWRA](#) and enjoy the many benefits the membership offers.



American Water Resources Association, Washington Section
P.O. Box 2102
Seattle, WA 98111-2102

(Change service requested.)

Special Thanks to Washington Water Trust and Associated Earth Sciences, Inc. for word processing support on this newsletter.

2021 MEMBERSHIP / CHANGE OF ADDRESS FORM

(⌂ please circle, as appropriate ↗)

Annual membership in the state chapter costs \$35.

Name _____ Position _____ Affiliation _____

Street Address _____ City _____ State _____ Zip _____

Phone (_____) _____ Fax (_____) _____ E-mail _____ @ _____

☐ Please check this box to indicate if you prefer to receive your newsletter electronically.

NEW MEMBERSHIP OPTION – ADD SUPPORT FOR THE AWRA-WA STUDENT FELLOWSHIP FUND

_____ 2021 Membership Dues: \$35.00 (\$5 automatically donated to the AWRA-WA Student Fellowship Fund!)

_____ I am including an additional Donation of \$_____ to support the AWRA-WA Student Fellowship Fund

Preferred Method: Pay via Paypal on our website: www.waawra.org

For Checks: please make payable to AWRA Washington Section.

Mail to: American Water Resources Association Washington Section

P.O. Box 2102 Seattle, WA 98111-2102

The American Water Resources Association Washington Section is a scientific and educational 501(3)(3) non-profit organization established to encourage and foster interdisciplinary communication among persons of diverse backgrounds working on any aspect of water resources disciplines. Individuals interested in water resources are encouraged to participate in the activities of the Washington Section. Opinions and views expressed in articles of this newsletter are those of the author, not AWRA-WA.