



Urban Water Innovation Network

Annual Meeting Summary

July 28 - 29, 2020

Purpose

Despite the unfortunate lack of face-to-face interactions, the 2020 meeting still provided an opportunity to engage in fruitful interactions with the UWIN SRN team. This year was focused on the Network itself - identifying how the research links back into the [UWIN Conceptual Framework](#) and contributions to the holistic vision of the UWIN Sustainability Research Network (SRN). Discussions were focused on the achievements of the Network and identifying the broader contributions of the SRN to both the scientific and “real-world” (practitioner) communities.

The 2020 Annual Meeting engaged nearly 100-online participants including 48 UWIN Investigators, 32 students (10 undergraduates and 22 graduate students/post-docs), 8 collaborators and 7 Advisory Board Members. Attendance spanned over 40 institutions spread across the country.

The notes documented below reflect the vibrance of the Network and highlight the adaptability of our team to meaningfully engage in an on-line format, providing both important documentation of accomplishments as well as potential pathways forward to sustain the Network beyond the NSF funding cycle. The unique interactive features utilized during the meeting allowed the team to collect meaningful data and feedback on the trajectory of our SRN.

July 28, 2020

Thrust A Session

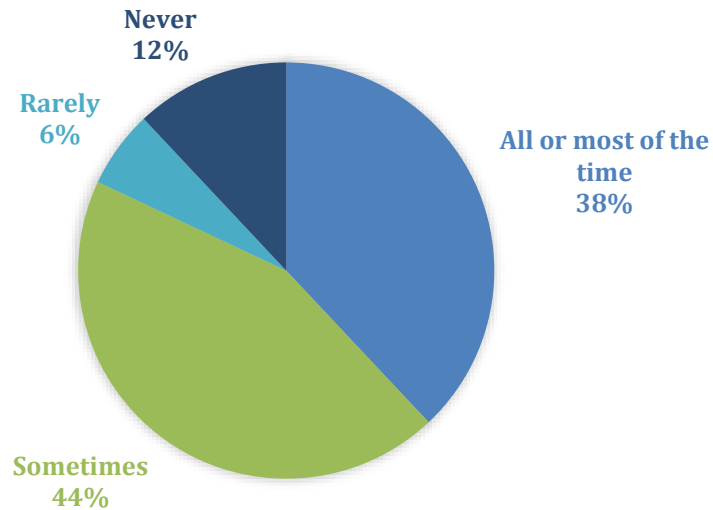
Matt Georgescu - *We are very interested in having other collaborators use our continental scale precipitation data. I mentioned it during the talk (slides 6 and 7) and folks that want to know more and desire access to the data should email me directly (matei.georgescu77@gmail.com)*

Thrust C & D Session

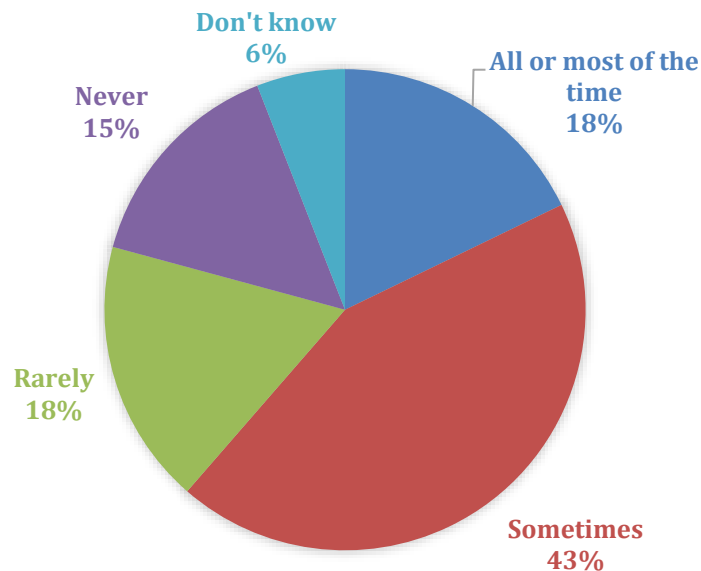
Alan Berkowitz: *Where do economic constraints, wealth and power disparities fit into the UWIN framework?*

Social Equity & Environmental Justice Poll Results

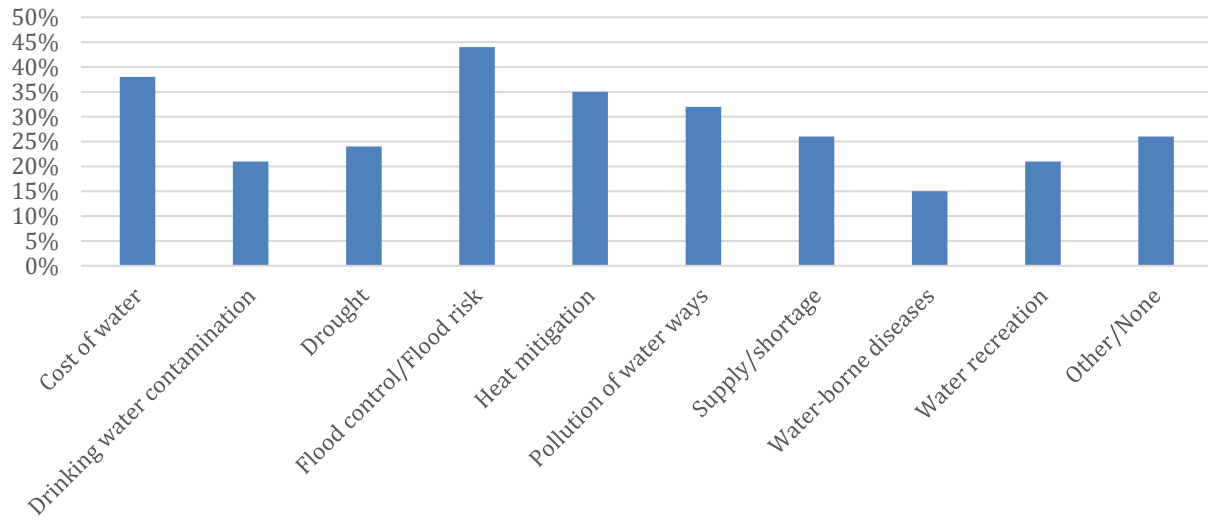
Did your UWIN projects consider social equity or environmental justice issues as part of the design?



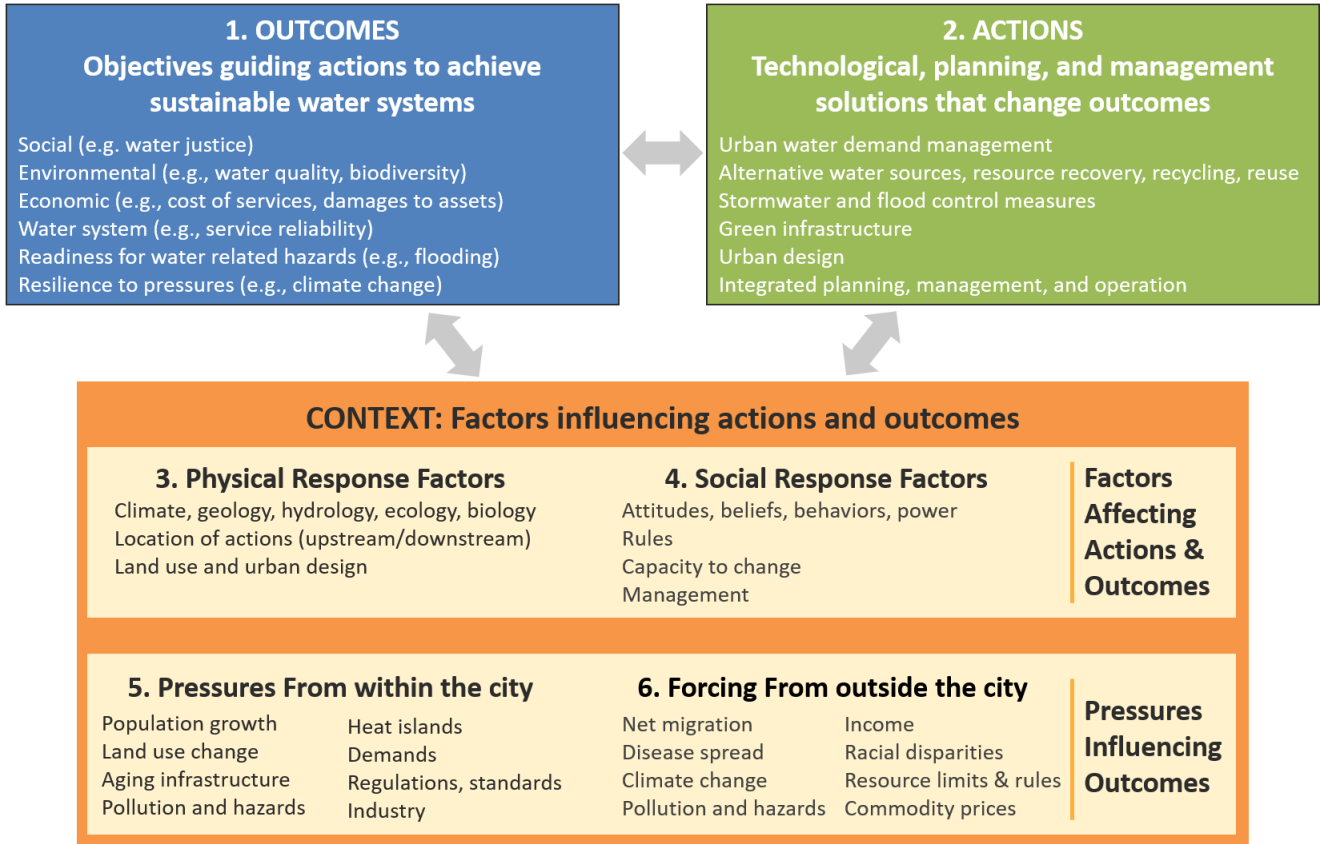
Did your UWIN publications include social equity or environmental justice issues as part of your findings or discussion?



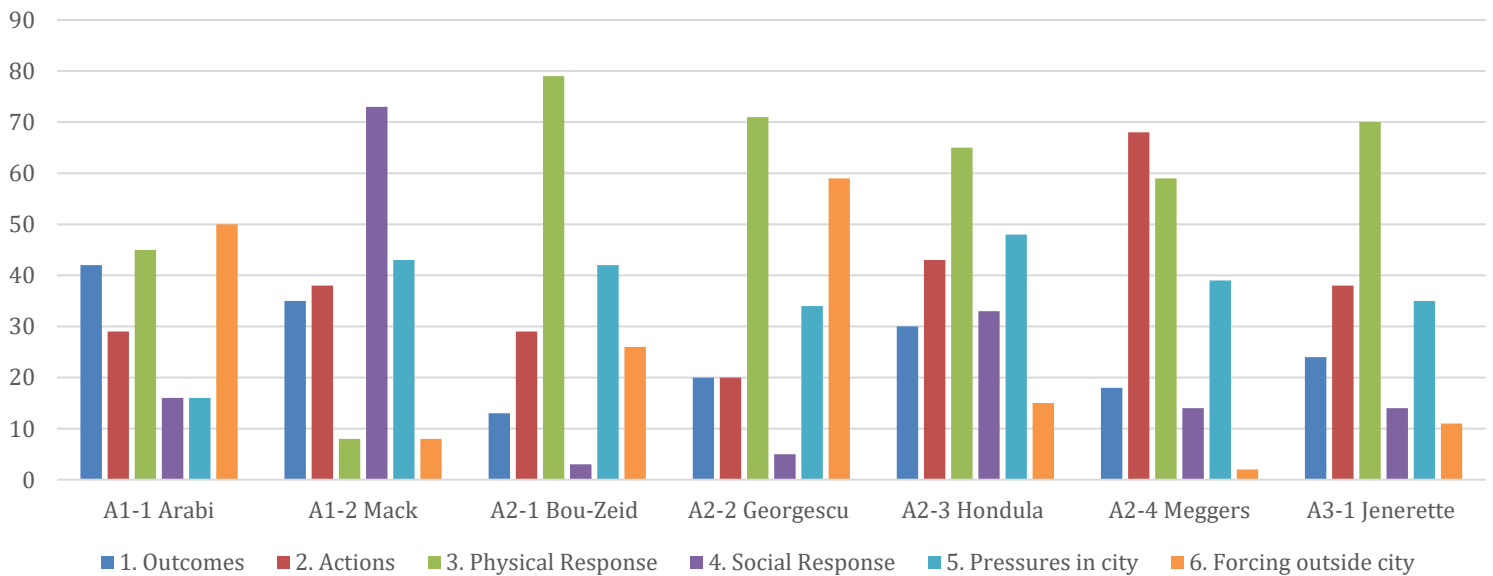
Did you identify in your study region any water-related burdens or benefits that are social equity or environmental justice concerns?



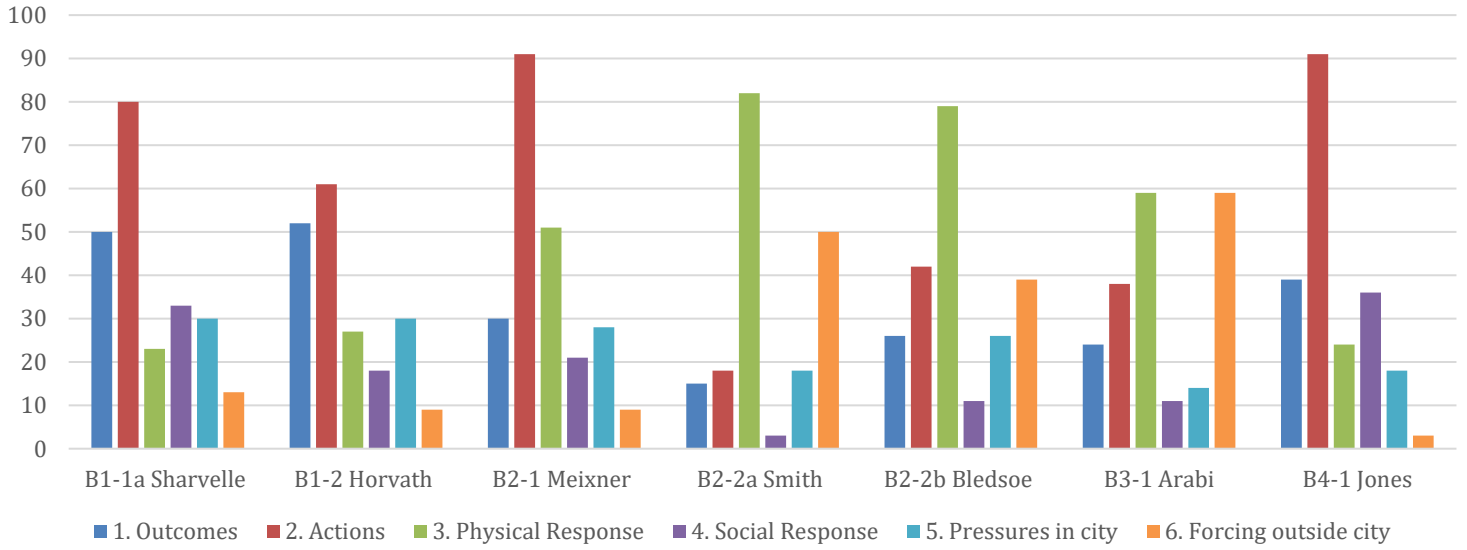
Conceptual Framework Poll Results



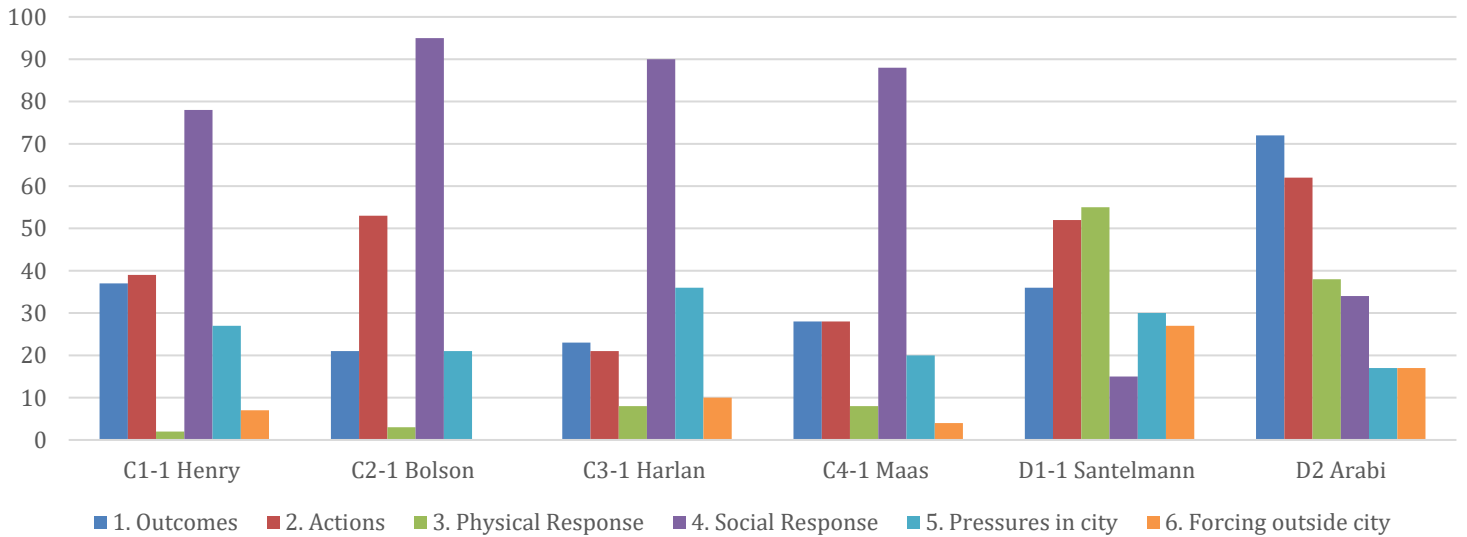
Research Thrust A - Conceptual Framework Alignment



Research Thrust B - Conceptual Framework Alignment



Research Thrusts C & D - Conceptual Framework Alignment



URP Case Study

- Link to suggested survey questions:
<https://docs.google.com/document/d/1HTMzQ5Ml1vrGx1AabCB2Ct4Kt5Sk92PTDDOTuG0awOO/edit>
- Link to survey proposal:
https://docs.google.com/document/d/1zA8Lk1Ckm3SAip5aa2_0NqzmnivUuvDu01_q7XML5Ew/edit

06:53:21 Michelle Talal: *Wonderful presentation, URP! have you started the process for human subjects research approval from a university?*

06:54:14 Ben Choat: *Asking how current reservoirs are perceived may help understand how a new reservoir may be perceived*

06:58:03 Santelmann, Mary Virginia: *What might be other options to decrease the water gap? Is a new reservoir and pipeline the only possible response?*

06:58:07 Santelmann, Mary Virginia: *Are there opportunities to conserve irrigation water? are existing irrigation systems piped or open channel?*

07:02:18 Alan Berkowitz: *Meagan Smith was a great resource for the Case Study.*

07:10:33 Alex Mahalov: *Great presentation by undergraduate students, really enjoyed it.*

- *My student presented at the Council on undergraduate research (CUR) conference in DC last year co-organized with NSF.*

07:11:18 Michael Sukop: *Link up on LinkedIn...*

06:42:09 One Water Solutions Institute: *Yay Ben Choat (CSU)- thank you for all your support of the URP over the last couple of years!!*

- 06:44:09 Ben Choat: *Thankful for the opportunity!*

Notes:

Strong encouragement all around to continue to pursue the case study survey; Mazdak can send the demographic info and other relevant FTC materials, also offered to provide funding to continue this effort

July 29, 2020

Web-Tool Update

From Jennifer Cherrier to Everyone: 08:24 AM *Very cool...tons of excellent progress.*

From Harry Zhang (WRF) to Everyone: 08:26 AM *Nice presentation. Can this tool handle "competing" decision objectives across different water matrices?*

- From Sybil to Everyone: 08:53 AM - *In response to Harry, This tool is envisioned to handle competing decision objectives in the same way that CLASIC does, by providing outputs that inform cost, TBL benefit, and institutional considerations in addition to water, wastewater, and stormwater system performance. This enables user to assess tradeoffs of multiple scenarios.*

From Glen T Daigger to Everyone: 08:27 AM *Looks like questions are a bit slanted to dry locations. Should make sure that also reflects more humid locations.*

- From sybil to Everyone: 08:58 AM - *In response to Glen. You make a good point. Many of those questions in the presentation were more specific to the GES community, while other of other questions the team has identified do address flooding and considerations in wet climates. I think we could add more on CSOs and other wet climate considerations. Ultimately, we need more input from stakeholders across the US. That is something to consider moving forward.*

From Jeff Moeller to Everyone: 08:28 AM *I like the structure of this tool - beginning with the end in mind (i.e., outcomes) and then directing communities to actions that they can take and tools that they can use to get there.*

From Lena Berger to Everyone: 08:33 AM

One aspect that many mentioned during the interviews last year is contextual aspects. For example, green roofs do not work in Tucson but work well in other cities. Does the tool provide advice in this direction (e.g., what are the right practices for your context)?

- From sybil to Everyone: 09:06 AM - *This is in response to Lena. We do include physical response factors in our web tool framework diagram and would like to include this. I think this can be implemented via selection of Outcomes first. When a user selects an outcome, regional and physical factors can be considered to inform Actions the user can select, or the user could be informed of specific physical factors to consider for implementation. I think it is important that the tool considers physical factors as you suggest.*

From Santelmann, Mary Virginia to Everyone: 08:34 AM *Our group has found that relationships are important in working with stakeholders. it is a process that takes time and dedication if you want your work to be integrated into the real world*

From Forrest Meggers to Everyone: 08:36 AM *Interested how to differentiate Stakeholders that have personal livelihood stakes (comfort water quality) vs stakeholders with financial stakes (land value/capital costs)*

From Jennifer Cherrier to Everyone: 08:41 AM *Sybil, A thought too to consider is once you have all of the needed agency stakeholders at the table...one thing that we found with the NYC Stormwater Resiliency study was that we had to take additional time in a stakeholder meeting to align all of the various agency missions around the water...to get them all on the same page to collectively move toward decisions that would benefit each mission. we framed it around a task for all stakeholders to identify their respective 'stormwater resiliency sweet spots and tipping points'..it was harder than might be expected effort but it was super important...and it came long after establishing ground rules for language and avoiding jargon. Anyway- I echo Jonathan sentiments- tons of utility with this tool for coalescing around.*

Indicators Update

From Andy Miller to Everyone: 08:44 AM *The points Adam is making about the causal chain are really important. I am currently chair of the Chesapeake Bay Program Scientific and Technical Advisory Committee and we serve the watershed partnership with scientific advice about the efficacy of measures that include TMDL requirements for the purpose of Chesapeake Bay restoration. We know there are serious gaps between goals and achievement and we are in the midst of an effort to provide a comprehensive evaluation of reasons why those efforts may not translate into the improvements the regulations are intended to achieve. Scientists don't make policy but they can study the gaps and try to understand the impediments to success so as to improve policy choices.*

- From Alexander Maas to Everyone: 08:46 AM *I agree with Andy, this is a great way to think about solidifying some of these terms in my thinking*
- From Andy Miller to Everyone: 09:08 AM *There are time lags, legacy effects and mixed signals (when multiple different conditions are contributing to what is seen, for example at the mouth of a watershed) that often confound our ability to trace a clear cause and effect relationship between actions and outcomes. Understanding time lags affecting indicators becomes important when we try to measure progress.*

From Glen T Daigger to Everyone: 08:46 AM *This discussion of actions, context, and outcomes is correct, but what it means is that different indicators are needed at different stages of the change process. One has to take actions before outcomes will be realized and the actions must be sustained for some time before outcomes are actually observable.*

From Santelmann, Mary Virginia to Everyone: 09:17 AM *Racism and economic injustice are part of the context of the city that influence whether a particular strategy will be effective or not vis a vis homelessness impact s whether public open space is perceived as an amenity*

- From Elizabeth Anne Mack to Everyone: 09:17 AM *spot on mary*

From Sharon Harlan to Everyone: 09:32 AM *The concept of "just sustainability" in the city - see books by Julian Agyeman, Tufts, Urban Environmental Policy and Planning*

URP Presentations

Emma Schwartz

01:40:24 Vanessa Gomez: *Yes Ema!!!!!!! :D Nice job*

01:41:02 Jennifer Cherrier: *nice job emma!*

From Forrest Meggers to Everyone: 09:28 AM *for fun see the study on CO2 and cognitive function from Spengler that showed that already at 600ppm there are cognitive effects... though there are some debate on the methods... it does mean atmospheric carbon change might make us dumber*

From Darrel Jenerette to Everyone: 09:29 AM *nice job, emma. how much urban tree based carbon sequestration is possible relative to urban CO2 emissions?*

- From Ema Schwartz (they/them) to Everyone: 09:30 AM - *That's more of the next step in our research, Darrell. So far I was just trying to establish that relationship, but we'll be moving forward with exact numbers soon.*
- From Ema Schwartz (they/them) to Everyone: 09:41 AM - *Darrell, I referenced a paper in my research paper that stated that 100 million trees could reduce human-caused CO2 emissions by nearly 20% - in a city context, 100 million trees is most likely not possible, so somewhere between 5-10% checks out*
 - 02:03:50 Darrel Jenerette: *@ema Thanks! I look forward to reading your report.*
- From Santelmann, Mary Virginia to Everyone: 09:46 AM - *The importance of urban systems in participating in CO2 uptake as part of shared responsibility can be important as a way to show another form of justice in addressing environmental problems (not shifting responsibility for managing CO2 on rural land owners)*
- From Kyotaek to Everyone: 09:48 AM - *Darrel - thanks for giving Ema a nice way to think about how much C-sequestration contributes to NEE. Depending on season, trees take up carbon by 0 in winter to more than 100% in summer in Detroit. I think these vary but apply in similar ways in other metropolitan areas.*
- 01:43:13 Alexander Maas: *spurious correlation?...twitter and C20 happened to rise together.*
- 01:52:47 Alan Berkowitz: *Great jobs, Ema and Matt!*

Matt Darrah

01:45:54 Sharon Harlan: *The concept of "just sustainability" in the city - see books by Julian Agyeman, Tufts, Urban Environmental Policy and Planning*

01:50:22 Jennifer Cherrier: *Nice job Matt!*

01:52:47 Alan Berkowitz: *Great jobs, Ema and Matt!*

Vanessa Gomez & Kiernan Bartlett

02:02:13 Gabrielle Jawer: *I love these audio quotes*

02:02:27 Kati Burton: *I agree Gabrielle!*

02:02:47 Michelle Talal: *awesome presentation - very important work! i was wondering if you interviewed any urban foresters that work for city or county governments?*

02:03:03 Alan Berkowitz: *Great work and presentation, Vanessa and Kiernan!*

02:03:03 Dustin Herrmann: *Awesome presentation, Vanessa and Kiernan!*

02:03:24 David Hondula: *great job V and K!!*

02:03:41 Forrest Meggers: *I LOVED the presentation (and Trees... says Forrest)*

02:03:42 Kevin Burgio: *Amazing job Vanessa and Kiernan!*

02:03:48 Andy Miller: *The documentary City of Trees tells an interesting story about the activities of a white-led NGO in Washington, DC and their interactions with the community. It was a pretty complicated story that highlighted issues around communication and engagement and who leads the effort.*

- 02:08:09 Kiernan Bartlett (she/her): *Andy Miller- I live right outside DC in Northern VA and will absolutely check out that documentary! I'd love to learn more about urban forestry in my "backyard".*

02:04:12 Sharon Harlan: *Great job, Kiernan and Vanessa! Lots of hard work behind this.*

02:04:17 Darrel Jenerette: *@vanessa and @kiernan - great work describing the project.*

02:05:08 Jennifer Cherrier: *Great job Vanessa and Kieran!*

02:07:16 Kiernan Bartlett (she/her): *Thank you everyone!*

Tiajahlyn Furr

02:11:01 Vanessa Gomez: *Amazing job Tiajahlyn!!!!!!*

02:11:09 Thomas Meixner: *Great job!*

02:11:27 Jennifer Cherrier: *Nice job Tiajahlyn!*

02:11:31 Alan Berkowitz: *Great talk, Tiajahlyn*

02:11:36 One Water Solutions Institute: *Woot woot to ALL the presenters so far - so impressed with you!*

02:12:04 Kimberly Jones: *These student presentations are awesome so far - you all have done so much with your virtual summer program. Kudos to all*

02:13:17 Santelmann, Mary Virginia: *Great job, Tiajahlyn!*

Haley Selsor

02:19:11 Alan Berkowitz: *Great presentation Haley!*

02:19:13 Jennifer Cherrier: *Nice job Haley!*

02:20:13 Andy Miller: *nice presentation Haley! Makes me wonder whether a network of dry wells like those described by Tiajahlyn would have more of an impact on extent of flood inundation!*

02:21:38 Ema Schwartz (they/them): *^ a possible collaboration? I'm invested*

02:22:05 Tiajahlyn Furr: *I had the same though Andy*

02:22:42 Haley Selsor: *I also had the same thought Andy as Tiajahlyn was presenting! very interesting idea to explore*

Kati Burton

02:23:39 Michelle Talal: *wow, i hadn't heard about this spill - thanks for sharing and researching this issue*

02:26:55 Gabrielle Jawer: *That was amazing, Kati!*

02:27:40 Jennifer Cherrier: *Nice job Kati!*

02:28:49 Sharon Harlan: *Great study, Kati - methodology can be applied can be to many kinds of spills on land and water. Who lives there? Important question.*

02:29:23 Vanessa Gomez: *Really great presentation Kati!!!*

02:30:05 Alan Berkowitz: *Great talk, Kati!!*

Paula Rueda Villamil

02:35:23 Alan Berkowitz: *Great talk, Paula!!*

02:35:24 Michelle Talal: *great presentation! i can see your methods being applied to cities all over the world*

02:35:29 Vanessa Gomez: *Awesome presentation Paula!!*

02:36:51 Sharon Harlan: *Paula, very interesting! Might consider using air circulation/polluiton models rather than stations?*

- 02:38:32 Elie Bou-Zeid: *We surely can do that Sharon. Any modeling source you would recommend? That would be much more data to use.*

02:39:06 Santelmann, Mary Virginia: *I love the Venn diagram!*

02:40:14 Jennifer Cherrier: *Nice job Paula!*

02:41:53 Paula Rueda: *thanks everyone! :)*

Gabrielle Jawer

02:41:22 One Water Solutions Institute: *How is the safegraph data collected?*

02:44:21 Haley Selsor: *these figures are great gabrielle!*

02:44:50 Vanessa Gomez: *these visuals make it super clear!!*

02:45:03 Forrest Meggers: *can we normalize both infection and source of evac by total population*

02:45:27 Forrest Meggers: *Great Presentation!*

02:45:37 Vanessa Gomez: *Awesome work Gabrielle!!!*

02:45:43 Andy Miller: *fantastic presentation!*

02:47:57 Alan Berkowitz: *great talk, Gabrielle*

02:48:44 Santelmann, Mary Virginia: *There will also be differences in ability to safely evacuate based on income level, age and other attributes of the people affected, which might be a very rich area of inquiry*

02:48:54 Chingwen Cheng (ASU): *air pollution model could refer to EPA's Risk-Screening Environmental Indicators (RSEI) Model. Both Paula and Gabrielle did a great job, meaningful research, Kudos!*

Allison Cerlanek

02:50:18 One Water Solutions Institute: *Publishing clicks - love that!*

02:51:10 Forrest Meggers: *Elie U-win!*

- 02:51:11 Darrel Jenerette: *Elie is number 1 :)*
- 02:51:43 One Water Solutions Institute: *Hahah - U(you)-WIN :-)*
- 02:51:53 Elie Bou-Zeid: *I could not believe that!! I think we need to normalize by number of published papers ...*

02:52:48 Harrison, Michael Babatunde: *So neat!*

02:53:29 Michelle Talal: *well done allison!*

02:53:40 Jessica Bolson: *great job Ally!!!*

02:53:45 Chingwen Cheng (ASU): *very interesting analysis, good job!*

02:54:12 Elie Bou-Zeid: *This can be applied to so many other groups! very interesting*

02:54:38 Jennifer Cherrier: *Allison- super interesting.*

02:55:04 Stephanie Chiorean (she/her)- Philadelphia Water Department: *This is very interesting and I love the visualizations!*

02:55:23 Michelle Talal: *a lot of us are in the midst of publishing together, so be sure to add those in later :)*

02:55:41 Alan Berkowitz: *Great talk, Allison*

02:55:47 Vanessa Gomez: *Nice job Ally!!!*

General Remarks

02:11:36 One Water Solutions Institute: *Woot woot to ALL the presenters so far - so impressed with you!*

02:12:04 Kimberly Jones: *These student presentations are awesome so far - you all have done so much with your virtual summer program. Kudos to all*

02:57:18 Aude Lochet: *WOW! Impressive presentations!!! Congratulations to all the students!!! And thumbs up to the mentors!!!!*

02:57:37 Jennifer Cherrier: *Yes, excellent all around!*

02:58:31 One Water Solutions Institute: *That was really amazing - EXCELLENT WORK ALL URPSs!*

02:59:17 Ema Schwartz (they/them): *Thank you to all the mentors!!! <3*

02:59:30 Paula Rueda: *^^^^*

03:00:48 Michelle Talal: *nice to see the balance of different types of projects*

03:02:32 Andy Miller: *Terrific presentations from all.*

03:04:24 Vanessa Gomez: *This summer was SO fruitful*

03:12:36 Jessica Bolson: *It's been such a pleasure to work with the URP students and amazing Alan!!!*

03:13:12 Forrest Meggers: *Great work all around!*

URP Update & Evaluation

02:58:28 Shirley Vincent: *A couple of ref relevant to our evaluation of the URP*

- Wiek A., Withycombe L., and Redman C.L., 2011. Key competencies in sustainability: a reference framework for academic program development. *Sustainability Science* 6(2): 2013-218.
- Misra S, Stokols D. and Cheng L. 2015. The transdisciplinary orientation scale: factor structure and relation to the integrative quality and scope of scientific publications. *Journal of Translational Medicine and Epidemiology* 3: 1042.

Network Growth & Expansion

Group Chat

03:56:01 One Water Solutions Institute: *Water Sustainability and Climate centers (WSC)*

03:58:11 One Water Solutions Institute: *Harlan CNH: BE/CNH: Neighborhood Ecosystems: Human-Climate Interactions in a Desert Metropolis*

04:16:24 Jessica Bolson: *I'm seeing parallels between what we ask of water practitioners as well- we are trying to understand integration! We keep hearing that collaboration is key and I think we need to dig into collaboration in this context more deeply.*

04:17:37 Sharon Harlan: *Many thanks to Bill Cooper for EJ supplement!*

04:21:19 One Water Solutions Institute: UWIN Zotero Database:

https://www.zotero.org/groups/738723/urban_water_innovation_network_uwin/library

04:21:22 Darrel Jenerette: *it could also look different in 3 years - my more integrated papers are only now getting into review and several more in prep*

04:21:22 Forrest Meggers: *The SMaRTy party paper is coming to get more PU-ASU connection*

From Jennifer Cherrier to Everyone: 12:08 PM *I think that there are other ways to capture connections other than papers...esp if we are starting to think about working at the boundaries with practitioners- the products will be quite different*

- From Marc Cammarata to Everyone: 12:08 PM - *agree with Jennifer!*
- From Jennifer Cherrier to Everyone: 12:12 PM - *this approach is a little too academic; Exactly Mazdak- all are important but we need to consider other necessary products; The bridging takes a ton of time...We'll also change the way our students navigate science in general.*
- From Jessica Bolson to Everyone: 12:13 PM - *How might we capture those impacts? Change in practice takes time, however learning and change in mindset and thinking are likely already happening.*
 - Elie - gray lit, media
 - Mazdak - utility partners,

- Nasir - Nowadays other forms of communication (e.g., podcast, social media) are way more powerful to communicate someone outside academia.
- From Jonathan Gilligan to Everyone: 12:23 PM - *Responding to Jennifer: NSF constantly presses projects to account for their broader impacts. As with advances in identifying best practices in interdisciplinary collaboration, it would be nice to contribute to methods for evaluating broader impacts more rigorously and in a way that would allow something like an apples-to-apples comparison across projects.*
 - From Jessica Bolson to Everyone: 12:34 PM - *Jonathan, I agree completely. It would be cool to have this as part of a workshop. I also think this is especially true for projects still seeking to conduct innovative scientific research that does not produce products like consulting does. The learning, change in vocabulary, change in vision, connection... all of this is critical. In fact, we keep hearing from stakeholders about how important collaboration is.*
 - 04:35:08 Jennifer Cherrier: *This has been a challenge in academia for some time (i.e. what to count and capture beyond publications) for those who work at boundaries- it's not simple...we need to keep it rigorous but there are other equally rigorous options...but getting arms wrapped around what it looks like is the challenge..and as Jessica correctly points out- change takes time and this is a major shift for academia*

04:30:25 Alexander Maas: *this project has highlighted the perverse incentives of the tenure process. My incentive is to publish as much as possible (I'm doing fine by the way), but integration and real-world, transformative work takes a long time.*

- 04:31:28 Forrest Meggers: *publish or perish... but you are probably going to perish first from bad water systems ;-)*

04:32:24 One Water Solutions Institute: *I am a happy to add any types of gray lit or other resources to the database - I just need to them sent to me :-)*

- 04:32:33 Nasir Ahmad: *Nowadays other forms of communication (e.g., podcast, social media) are way more powerful to communicate someone outside academia.*
- 04:30:14 One Water Solutions Institute: *I do have press releases and news articles in the database!*

04:32:36 Forrest Meggers: *we were invited to help build a cool streets installation in NYC and work form ASU helped us to inform them on the failures of misting... and other collaborative work helped to develop real radiant material cooling systems*

- 04:33:16 Forrest Meggers: *So ALL those thousands of people that will be cooler in Brooklyn is somehow an output of UWIN connections... but those are very hard to document I suppose*
- 04:33:55 One Water Solutions Institute: *Well done Forrest et al!*
- 04:34:37 Timothy Kirby: *Are there press releases/articles for this info? If so, you can add this to the Zotero database*

04:34:25 Allison Cerlanek: *It is important to note that this publication network is only one piece of the puzzle. This only addresses the interdisciplinary academic connections UWIN has accomplished, the next step is pushing research to look at *transdisciplinary work between researchers and stakeholders. It will also take more collaboration and discussion between UWIN members to construct a more complete image. This is an early representation of what we had available to us this summer.*

04:49:57 Santelmann, Mary Virginia: *One of my new PhD students is working with the Oregon Museum of Science and Industry on an internship to try to build results of our work and ongoing work into free choice learning*

- 04:51:08 Santelmann, Mary Virginia: *It would be great to have just a little more funding that supports some of these subsequent efforts that emerge at the end of the project, but are very important for broader impacts.*

04:53:41 Andy Miller: *A lot of us have connections with agencies and organizations or serve on advisory committees that have direct input to managers and people with policy responsibility. Once you're into one of those networks you have a lot of opportunity to share scientific information that they need.*

EAC Notes

Bruce - NSF colleagues will want to know “so what”? What is the *impact* has this had and what will it continue to have?

- Concise packaging (executive summary on impact - e.g. policy, infrastructure, education, community [users])
- From Glen T Daigger to Everyone: 12:27 PM - *Bruce is exactly right about tracking the actions of early adopters is a clear early indicator*

Jonathan: Not a well-defined set of best practices for identifying impacts and lessons learned that can be applied to other teams

Glen: You know what you've done but not sure what was successful/what we've done right - “Good to great methodology”; <http://forum.mit.edu/articles/getting-from-good-to-great-in-higher-education/>

- Comparable networks and programs - what correlates with greater success

UWIN 2.0 - “glue or core” that holds the group together

- PWD - numerous ways to measure life after publication, influence regulation or policy changes; practice needs the scientific community
 - Decision makers, low risk decision making (not a single person)
 - Perhaps the definition of “practitioner network” needs to change, include researchers and NGOs
- From Alexander Maas to Everyone: 12:32 PM - *I know we are talking about ways to improve integration and continuation, but I would like to highlight how great this project has been with*

providing connections across a wide range of disciplines and geographies. Exactly what Mazdak is saying.

UWIN SRN Contribution to Science & Practice

From Arpad Horvath to Everyone: 12:45 PM *Our work will lead to more energy efficient water systems in cities nationwide.*

From Elie Bou-Zeid to Everyone: 12:45 PM *The pros and cons of different heat mitigation strategies for cities*

From Andy Miller to Everyone: 12:46 PM *We are directly engaged in discussions with regional governments and agencies at federal, state and local level about flood science and stormwater and floodplain management practices and with state-sponsored groups on climate adaptation and resilience. People who are doing planning are actively seeking input related to how we can best characterize and act on future flood hazards.*

From Mazdak Arabi to Everyone:

- 12:46 PM *The CLASIC tool will enable communities to make more informed decisions about stormwater practices, particularly by implementing green infrastructure under appropriate conditions!*
- 12:47 PM *Data collected on roof runoff and stormwater quality will inform treatment targets for use of those source waters*
- 12:48 PM *Knowledge was shared to inform development of a regulation for onsite water recycling systems in Colorado*
- 12:52 PM *Colorado Water Conservation Board is now leveraging UWIN resources to improve water supply planning and land use planning - A new project was funded to collaborate with communities along the Front Range*
- 12:54 PM *A new project with the Colorado Department of Public Health and Environment was funded to leverage UWIN capacities to study linkages between WWTP effluent COVID-19 levels and community spread and create an early warning system ...*
- 12:55 PM *Dr. Sharvelle is chairing a panel to guide development of regulations for decentralized water systems in California.*

From Darrel Jenerette to Everyone: 12:46 PM *managing trees to achieve municipal climate change goals with limited water*

From Jennifer Cherrier to Everyone: 12:46 PM *Our work will be informing NYC planning for current and future flood mitigation under multiple storm scenarios, with multiple intervention scenarios with an understanding for both how the flooding and the mitigation of the flooding will affect communities*

From Thomas Meixner to Everyone: 12:47 PM *understand the implications of GI maintenance, design and placement*

- From Thomas Meixner to Everyone: 12:49 PM *Cities can hopefully now better engage with communities to understand where and how GI can be installed in neighborhoods*

From Jessica Bolson to Everyone: 12:47 PM *The results from stakeholder meetings and interviews have really shifted the way I view transitions to sustainability. One of the main shifts has been through realizing the specific effects of silos in institutions and what those mean for practical transitions. These realizations have made me want to seek solutions and I am bringing that interest into future projects and discussing it with stakeholders to see how they have solved or worked around those barriers.*

From Forrest Meggers to Everyone: 12:47 PM *Create revolutionary new systems, structures and tools that change the perception of urban heat and how it can be addressed with green/blue system innovation*

- From Forrest Meggers to Everyone: 12:49 PM *Build things that make people say “wow”*

From Brian Bledsoe to Everyone: 12:47 PM *Helps communities understand, communicate, and reduce flood risks*

From Jennifer Cherrier to Everyone: 12:48 PM *Our work has also brought together practitioners and citizen scientists for understanding and comparing performance of GI in several cities in NA*

From Stephanie Chiorean (she/her)- Philadelphia Water Department to Everyone: 12:55 PM *Jennifer- we would like to develop this pipeline and trust in Philadelphia. That's critical!*

- 05:11:17 Jennifer Cherrier *Stephanie- absolutely..and it takes time and it would be really unfortunate if we are unable to find sustainable mechanisms to keep this momentum going. These established partnerships are so very key*
- 05:11:30 One Water Solutions Institute: *Stephanie/PWD - let me know how we can help facilitate this partnership!*
- 05:11:37 Jennifer Cherrier: *and trust is HARD*
- 05:13:21 Stephanie Chiorean (she/her)- Philadelphia Water Department: *Jennifer/Sarah - definitely. We can definitely chat separately. We have opportunity to do this at PWD and at the City level (I hope). Thank you!*
- 05:30:01 Jennifer Cherrier: *Know that NYC would be right there too. And Marc, this would get you and Alan together too.*

From Elie Bou-Zeid to Everyone: 01:01 PM *What i am also trying to get at is: how can we assist cities that we do not have direct contact and work with.*

- From Marc Cammarata to Everyone: 01:03 PM - *in response to Elie's comment - continued collab with associations - AWWA, WRF, NACWA, USWA, GILE, AMWA, etc. - cities pay for memberships with these organizations. These organizations know quite a bit about the needs, wants and wishes of cities/utilities.*

- 05:18:57 Elie Bou-Zeid: *Indeed Marc. I think those types of connections and avenues in the long run may be slower but have a broader impact*

From Alexander Maas to Everyone: 01:03 PM *Gary, do you have any insight into how organizational aspects affect Innovation and "one water" more generally? Concessionaires, private, public, etc. Each have different objectives and tolerance for working with us crazy academics...For example Boise (Suez) water is private, and in my experience, they have shown very little interest in working with the university or innovation or the intersection with social justice Do you have any insight that is more defensible than my anecdote?*

EAC Notes

BRUCE:

Establish "Best Practices in climbing this ladder"

1. Aspirations and Visions
2. Implemented connections (e.g. mayors office)
3. Implemented test-beds/pilot projects
4. Implemented demonstration projects (early adopters as indicators)
5. Implemented full-scale projects

BILL:

Magazines and pubs that practitioners use/read (produce literature they can understand)

- Also WRF could be a good pathway, AWWA, USWA,

GLEN:

Write a book, short less than 120 pages - a synthesis (everything we've done and this is what it means)

- 05:44:14 Jennifer Cherrier: *V. true Glen...publication shows that we 'know thy stuff'. But it is hard as an academic to get demonstration projects in (innovations implemented)...we compete with consultants that work in this space and are totally networked and linked. Tough to break in to their networks. I've been working at it for many years...it takes a lucky break- which I finally got but it took years and a move to NYC from FL. Trust, luck and connections*

06:07:11 Forrest Meggers: *sure, I had awareness of SEEJ before, but not for the deep rigorous research around it and how to consider interfacing with that*

Advisory Board Reflection

It may be helpful on outreach/communication to look at some of Randy Olson's work (e.g., his books, "Don't Be Such A Scientist" and "Houston, We Have A Narrative!")

From Andy Miller to Everyone: 03:20 PM

For those who are interested in the communication issue, the Chesapeake Bay Program has an office dedicated to taking scientific content of potentially broad public interest and translating it for a broader audience. Here is an example of a microplastics workshop report from last year and a piece that they wrote to translate it: https://www.chesapeake.org/stac/wp-content/uploads/2019/10/FINAL_STAC-Report_Microplastics-1.pdf
https://www.chesapeakebay.net/news/blog/small_plastics_are_a_big_problem

Bruce: Partnerships for Innovation (PFI) - Technology Translation (TT)

- Proposal to NSF: <https://www.nsf.gov/pubs/2019/nsf19506/nsf19506.htm>

From Jennifer Cherrier to Everyone: 03:22 PM *The Earth Leadership Program (formerly Leopold Leadership Program) does it too..for mid-career scientists..for individual scientists who kind of pull in this boundary type of work.*

Closing Remarks

06:28:50 Jennifer Cherrier: *The URP students and graduate students have really blown my socks off. They're so incredibly talented.*

- 06:29:49 Jennifer Cherrier: *The next transdisciplinary generation entering multiple workforce sectors*
- 06:33:41 Jennifer Cherrier: *Water Connects!!*

06:33:43 Andy Miller: *Ellen Wohl's book Virtual Rivers is worth reading for anyone interested in Front Range rivers.*

06:33:51 Alexander Maas: *As always, this was great Mazdak (and Sarah 😊).*

06:34:21 Stephanie Chiorean (she/her)- Philadelphia Water Department: *Thank you Mazdak and Sarah!! This was wonderful.*

06:34:30 Jennifer Cherrier: *Great meeting...thanks to everyone who organized it and participated in it.*

06:36:17 Elizabeth Anne Mack: *count me in for UWIN 2.0. love working with all of you!*

- 06:37:03 Jennifer Cherrier: *Yes, and would love to be formally part of it next time around.*

06:37:36 Lena Berger: *Thank you for the great meeting! Awesome team.*

06:37:42 Chingwen Cheng (ASU): *Thanks for the opportunity to be part of the Village. Look forward to continued collaboration. Thank you everyone!*