2020 WRRI Annual Conference Final Agenda

* Denotes this presentation covers current or previous WRRI-funded work

Wednesday, March 18

7:15 - 8:15 a.m.	Registration
Lobby	Registration and load presentations
Room 1A/1D	Set up posters and exhibits, enjoy coffee and hot morning refreshments
8:15 - 9:15 a.m.	Welcome and Keynote Address
Room 1B	Susan White and Nicole Wilkinson McIntosh, NC Water Resources Research Institute
	The One Water Approach: Strategies for Collaboration Scott Berry, US Water Alliance
9:30 - 10:30 a.m.	Concurrent Session 1
Room 1B	Lightning Round and Poster Promos Moderator: Jobi Cook, NC Space Grant
9:30 - 9:40	Poster Promo, Kirstin Lackstrom, Carolinas Integrated Sciences and Assessments and Corey Davis, State Climate Office of NC, Short-range weather outlooks and weekly drought updates from Project Nighthawk: An interactive poster experience
9:40 - 9:50	Poster Promo, Kaitlin Bratt, NC State University, Characterizing similarity of federal environmental justice analyses
9:50 - 10:00	Exhibit Promo, Merlyn Guevara, East Carolina University, Understanding coastal issues through virtual reality
10:00 - 10:10	Lightning, Guy Iverson, Nutrient and microbe transport in surface waters at a hog farm with lagoon covers and anaerobic digestion: A preliminary assessment
10:10 - 10:20	Lightning, Jacob Petersen-Perlman, East Carolina University, When and how the environment is considered in transboundary water agreements
10:20 - 10:30	Lightning, Sharon Fitzgerald, US Geological Survey, Do sediment cores from Lake Sidney Lanier (Georgia) reflect on-site septic system phosphorus inputs?
Room 3	Tool Demonstrations Moderator: Lauren Vorhees, NC State University
9:30 - 10:00	Hannah Barg, Triangle J Council of Governments, Clean Water Education Partnership and Lauren Daniel, NCDEQ, Using ArcGIS as an educational and public outreach tool
10:00 - 10:30	Campbell McNutt, NC DEQ Division of Water Resources, NC Division of Water Resources watershed action plans stories – story map demonstration
Room 4	Climate-Based Planning Moderator: Jen Schmitz, Triangle J Council of Governments
9:30 - 9:50	Katie van Werkhoven, RTI International, Embracing uncertainty in water resources and flood risk assessment
9:50 - 10:10	Rick Savage, Carolina Wetlands Association, Natural and working lands and climate change
10:10 - 10:30	Michelle Schmidt, Tetra Tech, Evaluating climate change for the city of Durham's long-range water resources plan
Room 5	Harmful Algal Blooms and Toxin Concerns Moderator: Isaac Hinson, Charlotte Storm Water Services
9:30 - 9:50	Haley Plaas, UNC-Chapel Hill, Cyanobacterial microcystin production and aerosolization dynamics in the Chowan River-Albemarle-Pamlico Sound estuarine continuum, NC
9:50 - 10:10	Fateme Barancheshme, UNC-Charlotte, UV/Cl ₂ and UV/H ₂ O ₂ advanced oxidation as treatment for algal toxins in drinking water *
10:10 - 10:30	Astrid Schnetzer, NC State University, Cyanotoxins in North Carolina's freshwater and estuarine systems
Room 6	Awareness, Engagement and Action Moderator: Joy-Lynn Rhoton, NC State University
9:30 - 9:50	Christy Perrin, WRRI/North Carolina Sea Grant, Watershed Wisdom: A lesson plan from NC Watershed Stewardship Network and UNC-TV Science for advancing watershed literacy and action *

Room 2	Celebrate the 6th annual Source Water Protection Awards hosted by Rebecca Sadosky, NC DEQ Division of Water Resources
12:10 - 1:30 p.m.	Networking and Awards Luncheon
11:50 - 12:10	Jonathan Williams, HDR, Collaborative drought planning and response in the Catawba-Wateree and Yadkin-Pee Dee River Basins
11:30 - 11:50	Ruth Rouse, Orange Water and Sewer Authority, Incorporating drought into local and regional water supply planning
11:10 - 11:30	Rebecca Ward, State Climate Office of NC, Research to improve drought communication: applications to the water resources sector
10:50 - 11:10	Corey Davis, State Climate Office of NC, Drought and climate in 2019: A year in review for North Carolina
Room 6	Drought in North Carolina: Research and Actions Being Taken to Improve Drought Understanding and Planning Moderator: Meredith Muth, NOAA/National Integrated Drought Information System (NIDIS)
11:50 - 12:10	Curtis Weaver, US Geological Survey, StreamStats application: A brief refresher
11:30 - 11:50	Mathew Hornack, ESP Associates Inc., FIMAN-T: NCDOT's management and response to flood impacts
11:10 - 11:30	Daniel Penczak, OTT HYDROMET, Proactive data collection for flood warning
10:50 - 11:10	Hunter Freeman, WithersRavenel, Stormwater management in an ever-changing climate
Room 5	Flood Mapping Moderator: Fateme Barancheshme, UNC-Charlotte
11:50 - 12:10	Jane Harrison, NC Sea Grant, Wastewater infrastructure tipping points: Prioritizing implementation of climate adaptation plans in decentralized systems
11:30 - 11:50	Jordan Kern, NC State University, Hydrometeorological extremes in wholesale electricity markets
11:10 - 11:30	Roger von Haefen, NC State University, The value of water quality improvements in North Carolina's urban streams
10:50 - 11:10	Sara Sutherland, NC State University, The economics of nutrient credit trading in North Carolina
Room 4	Water Economics in North Carolina Moderator: Eric Edwards, NC State University
11:20 - 11:50	Campbell McNutt, NC DEQ Division of Water Resources, Planning approaches to restoring urban streams in a Clean Water Act kind of way
10:50 - 11:20	Julia Cavalier, UNC Environmental Finance Center, How can software design methods help environmental professionals?
Room 3	Tool Demonstrations Moderator: John Fear, NC WRRI
11:50 - 12:10	Danica Schaffer-Smith, Arizona State University / The Nature Conservancy, Repeated hurricanes reveal risks and opportunities for social-ecological resilience to flooding and water quality problems
11:30 - 11:50	Ana Maria Garcia, US Geological Survey, Scoring restoration priorities in stream and watershed restoration and protection
11:10 - 11:30	Rebecca L. Muenich, Arizona State University, Better understanding CAFO waste management for improved water quality
10:50 - 11:10	Julie DeMeester, The Nature Conservancy, The Sustainable Rivers program in the Cape Fear River
Room 1B	Managing Human and Natural Infrastructure for Changing Extremes Moderator: Marilyn Mayer, NC State University
10:50 a.m 12:10 p.m.	Concurrent Session 2
Room 1A/1D	Enjoy refreshments and exhibits
10:30 - 10:50 a.m.	Networking Break
10:10 - 10:30	Kelly Suttles and Tatiana Height, UNC-Greensboro Center for Housing and Community Studies, Fostering engagement in the Cottage Grove neighborhood through community involvement in riparian cleanup to enhance stormwater quality *
9:50 - 10:10	Rachel Taylor, NC Growth, The French Broad River: Leveraging river recreation to promote economic development

1:30 - 3:30 p.m.	Concurrent Session 3
Computer Lab	Introduction to R for Water Resources Data Science: Hands On Training Facilitator: Sheila Saia, NC State University
1:30 - 3:30	The Computer Lab is located in back corner of McKimmon Center, opposite of where other sessions take place. Please consult the map on page 3 or ask a WRRI staff member at the registration desk to help you locate it. See page 14 for special session details.
Room 3	Urbanization Impacts to Water Moderator: Campbell McNutt, NC DEQ Division of Water Resources
1:30 - 1:50	Adam Gold, UNC Institute of Marine Sciences, Urbanization alters coastal plain stream carbon export and ecosystem function
1:50 - 2:10	Rosemary Fanelli, US Geological Survey, How salty are our streams? Using high-frequency data to characterize chloride exceedance events above ecologically-relevant thresholds
2:10 - 2:30	Ge Sun, USDA Forest Service, Modeling the effects of urbanization on watershed water yield and gross primary productivity (GPP) in the conterminous United States
2:30 - 2:50	Sarah Praskievicz, UNC-Greensboro, Physical habitat and water quality of small streams draining areas of differing urban land use: North Buffalo Creek, Greensboro
2:50 - 3:10	Charles Stillwell, US Geological Survey, Monitoring the French Broad River during highway construction
3:10 - 3:30	Andrew Shannon, NASA DEVELOP, Using NASA earth observations to quantify the impact of urban tree canopy cover and evapotranspiration on urban heat and identify community vulnerability in Asheville, NC
Room 4	Modeling and Monitoring Nutrients in Rivers, Lakes and Estuaries Moderator: Alexis Swanson, NC State University
1:30 - 1:50	Kimia Karimi, NC State University, Assessing long term variability in nutrient loading to Jordan and Falls Lake using hierarchical Bayesian modeling
1:50 - 2:10	Daniel Obenour, NC State University, Assessing the potential for watershed loading reductions to reverse eutrophication in Jordan Lake through multi-decada modeling
2:10 - 2:30	Alix Matos, Brown and Caldwell and Forrest Westall, McGill Associates, Observations from the Upper Neuse River Basin Association's monitoring program, 2014-2018
2:30 - 2:50	Lise Montefiore, NC State University, A parsimonious model and data integration framework for estimating runoff-driven estuarine nutrient loading
2:50 - 3:10	Nicole Lindor, NC State University, Nutrient ratio effects on phytoplankton assemblages in a representative potable source-water reservoir of the Southeastern US *
3:10 - 3:30	Diane Lauritsen, LIMNOSCIENCES, Sediment phosphorus comparisons between two shallow bay lakes in the North Carolina coastal plain
Room 5	Film Screenings
2:00 - 2:40	Dance for the River and Straws – see page 4 for details
2:50 - 3:30	Repeat screenings
Room 6	Wetlands Moderator: Kim Matthews, Carolina Wetlands Association
1:30 - 1:50	Michael Burchell, NC State University, Citizen science to enhance wetland protection and education in NC
1:50 - 2:10	Lucia Ibarra, Dogwood Alliance, What's it worth? An ecosystem services valuation for wetland forests in the US South
2:10 - 2:30	Michael Burchell, NC State University, Removing detritus to rehabilitate older constructed wetlands used in wastewater treatment *
2:30 - 2:50	Melinda Martinez, NC State University, Greenhouse gas emissions from standing dead trees in coastal forested wetlands
2:50 - 3:10	Phil May, Carolina Ecosystems, Waters of the US: Changes and challenges in North Carolina
3:10 - 3:30	Lindsey Smart, NC State University, Prioritizing targeted interventions to protect peatlands from sea level rise and saltwater intrusion with scenario-based modeling
3:30 - 4:00 p.m.	Networking Break
Room 1A/1D	Enjoy refreshments and exhibits; Round 1 of student poster judging.

4:00 - 5:00 p.m.	Concurrent Session 4
Room 1B	Lightning Round & Poster Promos Moderator: Susan White, NC WRRI
4:00 - 4:10	Poster Promo, Kalli Unthank, NC Division of Water Resources, Statewide ambient ground water quality monitoring in North Carolina
4:10 - 4:20	Poster Promo, Caleb Mitchell, Subsurface-flow gravel wetlands: An innovative tool for mimicking natural hydrology?
4:20 - 4:30	Poster Promo, Zack Mondry, US Forest Service, Soil disturbance monitoring after timber harvest on national forests in Tennessee, Virginia, and North Carolina
4:30 - 4:40	Lightning, Rob Hopper, CDM Smith, The first Beaver Deceiver in Raleigh
4:40 - 4:50	Lightning, Kevin Nunnery, Biohabitats Inc., Urban ecology and water quality: Planning for future resiliency
4:50 - 5:00	Lightning, Jason Wright, Tetra Tech, BMP prioritization for and TMDL compliance
Room 3 4:00 - 5:00	Focus on Function with Grasses and Sedges: Interactive Session Facilitator: Shannon Currey, Hoffman Nursery See page 14 for special session details
Room 4 4:00 - 5:00	Strategies and Challenges for Implementing the One-Water Framework: Discussion Session Facilitator: Scott Berry, US Water Alliance See page 15 for special session details
Room 5	Film Screenings
4:00 - 4:40	Dance for the River and Straws – see page 4 for details.
Room 6	Water Utility and Infrastructure Management Moderator: Mariya Munir, UNC-Charlotte
4:00 - 4:20	Jannette Morris, Katy Hansen and Walker Grimshaw, Duke University, Creating a statewide digital map of community water system service areas
4:20 - 4:40	Drew Blackwell, Cavanaugh and Associates, Piloting water loss control in North Carolina
4:40 - 5:00	Samrin Ahmed Kusum, NC State University, Evaluation of fly ash as a cement replacement to reduce sewer collection system infrastructure maintenance and enhance sustainability *
5:00 p.m.	End of Sessions
	Please sign the PDH/CEU sign-up form at the registration desk in order to certify your attendance today.
5:00 - 7:00 p.m.	Poster Session and Networking Reception
Room 1A/1D	Join us for research poster presentations and a chance to meet the poster authors and network with conference participants and exhibitors. Enjoy live music, heavy hors d'oeuvres, plus beer from NC State University's Fermentation Science Program.
	Featured exhibits: Dance for the River photographic display ECU Academic Exhibit: Understanding coastal issues through virtual reality — hands-on activity Water/Ways by the Smithsonian and hosted by the NC Humanities Council
Room 5	Film Screenings
5:30 - 6:10	Dance for the River and Straws – see page 4 for details
6:15 - 6:55	Repeat screenings

Thursday, March 19

7:15 - 8:15 a.m.	Registration
Lobby	Registration and load presentations
Room 1A/1D	View posters and exhibits, enjoy coffee and hot morning refreshments
Room 1B	Welcome
8:00 - 8:15 a.m.	Susan White, NC WRRI and Melanie Moore Richeson, NC Humanities Council
8:30 - 10:30 a.m.	Concurrent Session 5
Room 1B 8:30 - 10:30	Featured Session: Plastics and Water Facilitator: Linda Booker, Director/Producer and Gloria Putnam, NC Sea Grant See page 16 for special session details
Room 3 8:30 - 10:00	Finding a Baseline: The When, Where, and What for Longitudinal Water Quality Monitoring in NC: Panel Discussion Facilitators: Rachel Noble, UNC Chapel Hill; Angela Harris, North Carolina State University; Natalie Nelson, North Carolina State University See page 15 for special session details
10:00 - 10:30	WOTUS 2020: Changes to the "Waters of the US" definition: Informal Discussion Facilitator: Phil May, Carolina Ecosystems See page 15 for special session details
Room 4	Stormwater Moderator: Jason Doll, KCI Associates of NC
8:30 - 8:50	Hunter Freeman, WithersRavenel, How can an iPhone improve green infrastructure?
8:50 - 9:10	Krysta Wilson and Todd Coolbaugh, Johnson C. Smith University, 2,2,6,6-Tetramethylpiperidinyloxy (TEMPO) oxidized cellulose nanofibrils as environmentally friendly flocculating agents for clarification of storm waters
9:10 - 9:30	Christopher Osburn, NC State University, Nutrient and carbon loading from the neighborhood: Effect of a summer storm
9:30 - 9:50	Jeffrey Johnson, NC State University, Bioretention media evolution: Design and maintenance implications
9:50 - 10:10	Trevor Clements, Tetra Tech, Overcoming the "doesn't GSI always cost more?" preconception barrier in Raleigh
10:10 - 10:30	Erin Rivers, NC State University, Let this soak in: Compost and wildflowers increase runoff capture in roadside soils
Room 6	Contaminants and Water Treatment Moderator: Mathew Hornack, ESP Associates
8:30 - 8:50	Kirsten Studer, UNC- Chapel Hill, Tracking the transformation of total iodine within a drinking water plant: Identifying treatment to limit iodinated disinfection byproduct formation *
8:50 - 9:10	Yazeed Algurainy, NC State University, Asymmetrical salt removals during water desalination using capacitive deionization
9:10 - 9:30	Samonty Das, UNC-Charlotte, Assessing the feasibility of nitrogen and phosphorous recovery as struvite from nutrient-rich wastewater
9:30 - 9:50	Sushama Pradhan, Onsite Water Protection Branch/NC DHHS, Pharmaceutical and personal care products (PPCPs) in the wastewater and groundwater
9:50 - 10:10	Gary MacConnell, MacConnell & Associates P.C., On-site reuse of highly treated domestic wastewater provides many benefits for single family residence
10:10 - 10:30	Jean-Rene Thelusmond, NC State University, Estimates of the occurrence of per- and polyfluoroalkyl substances in landfill leachate and wastewater in North Carolina
10:30 - 10:50 a.m.	Networking Break
Room 1A/1D	Enjoy refreshments and exhibits
10:50 a.m 12:10 p.m.	Concurrent Session 6
Room 1B	We're from the Government and We're Here to Help: Case Studies in Effective Action on Drinking Water Problems Moderator: Evan Kane and Amy Keyworth, Wake County
10:50 - 11:05	Emily Williamson Gangi and Jill Moore, UNC School of Government, NC Drinking Water Incident Response Toolkit

1:30 - 1:50	Michael O'Driscoll, East Carolina University, Does more groundwater mean less treatment? The influence of sea level rise and coastal storms on septic system
Room 4	Wastewater Treatment Along North Carolina's Changing Coastlines Moderator: Jane Harrison, NC Sea Grant
Room 3 1:30 - 3:00	US Geological Survey Water Data Jam: A Spotlight on Present and Future Water Data: Participatory Session: Facilitator: Krissy Hopkins, US Geological Survey See page 15 for special session details
1:30 - 3:30	Facilitators: Lee Ferguson, Duke University and Detlef Knappe, NC State University See page 17 for special session details LIC Control of Con
Room 1B	PFAS: Complexities and Considerations for Research and Management: Featured Session
	Note: All sessions start at 1:30 p.m., but end times vary; start times for Concurrent Session 8 are staggered accordingly
1:30 - variable	Concurrent Session 7
12:10 - 1:30 p.m.	Christine Rucker, About "Dance for the River" and the role of arts and environmental photography in conservation awareness; NC Water Resources Association/WRRI student poster competition awards
Room 2	Networking and Awards Luncheon
11:50 - 12:10	Yener Ulus, UNC-Greensboro, Effects of seawater intrusion on mercury cycling in coastal wetlands at Albemarle-Pamlico Peninsula, North Carolina *
11:30 - 11:50	Justine Neville, NC State University, Fast and slow dynamics of surficial saltwater intrusion
11:10 - 11:30	Diana Rashash, NC Cooperative Extension, An Investigation into indicators and drivers of saltwater intrusion to North Carolina's coastal agricultural regions
10:50 - 11:10	Marcelo Ardon, NC State University, Long-term water quality trends in a restored coastal wetland experiencing saltwater intrusion *
Room 6	Saltwater Intrusion Moderator: Rick Savage, Carolina Wetlands Association
11:30 - 12:00	Informal meet and greet and discussion with Straws film director, Linda Booker
10:50 - 11:30	Dance for the River and Straws – see page 4 for details.
Room 5	Film Screenings
11:50 - 12:10	Klaus Albertin, NC Department of Environmental Quality, Preliminary findings of the North Carolina Climate Science Report
11:30 - 11:50	Mike O'Driscoll, East Carolina University, Water resources data to support coastal plain ecological flow assessment in the Albemarle-Pamlico Basin
11:10 - 11:30	Robert R. Christian, Stanley R. Riggs, East Carolina University and NC Land of Water, Progress on ecological flows within the coastal plain
10:50 - 11:10	Chris Goudreau, NC Wildlife Resources Commission, The basics of ecological flows and recommendations of the Ecological Flows Science Advisory Board
Room 4	Ecological Flows, Water Resources and Water Availability in the Coastal Plain Moderator: Stacey Feken, Albemarle-Pamlico National Estuary Partnership
11:50 - 12:10	Tanvir Pasha, NC State University, Tracking the sources of fecal contamination in surface water after Hurricane Dorian in coastal North Carolina
11:30 - 11:50	Jack Kurki-Fox, NC State University, Evaluating the capacity of natural infrastructure for flood abatement at the watershed scale
11:10 - 11:30	Dori Sabeh, McGill Associates, Rhodes Pond hydrologic/hydraulic analysis and labyrinth weir design
10:50 - 11:10	Stanley Riggs, North Carolina Land of Water, Flood dynamics of the lower Roanoke and Cashie Rivers and their interaction with the Albemarle-Chowan estuarine system
Room 3	Understanding and Responding to Flood Risks and Impacts Moderator: Daniel Wiebke, McAdams
11:50 - 12:10	Panel Discussion
11:35 - 11:50	Robert Lassiter, Irongate Neighborhood Resident; Jackie MacDonald Gibson, Indiana University; Shawn Purvis, Town of Apex; and Alicia Arnold, Wake County, Irongate & Apex: Open doors culminate in resolution of a community's private well problems
11:20 - 11:35	Evan Kane and Amy Keyworth, Wake County, Outreach to private well owners on the potential for radionuclide contamination
	North Carolina private wells

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1:50 - 2:10	Eric Edwards, NC State University, The economics of improving coastal wastewater treatment under a changing climate
2:10 - 2:30	Lindsay Dubbs, UNC Coastal Studies Institute, People, water, and septic: A coastal case study in Nags Head, NC
2:30 - 2:50	Lawrence Cahoon, UNC-Wilmington, Climate change is challenging our waste treatment infrastructure
Room 5	Film Screenings
1:30 - 2:10	Dance for the River and Straws – see page 4 for details
Room 6 1:30 - 2:30	The Iowa Watershed Approach: Building a Flood Resilient Iowa and Implications for NC Managers: Discussion Session Facilitated by: Larry Weber and Witek Krajewski, Iowa Flood Center, Paxton Ramsdell, Environmental Defense Fund See page 16 for special session details
Room 1A/1D	Floating Networking Break
2:50 - 3:45	Note that afternoon break is extended to accommodate variable end times and start times between Concurrent Sessions 7 and 8; Last opportunity to view posters and exhibits before they are removed
Varying start times	Concurrent Session 8
Room 1B	PFAS Complexities and Considerations for Research and Management
3:45 - 5:00	Continued from Concurrent Session 7
Room 3	Monitoring Microbial Surface Water Quality in the Aftermath of Hurricane Florence Moderator: Elizabeth Christenson-Diver, UNC-Chapel Hill
3:10 - 3:50	Sophia Kathariou, NC State University, Part 1: Arcobacter butzleri
3:50 - 4:10	Rachel Noble, UNC-Chapel Hill, Part 2: Vibrio spp.
4:10 - 4:30	Collin Coleman, UNC-Chapel Hill, Part 3: Salmonella and Campylobacter
4:30 - 4:50	Elizabeth Christenson-Diver, UNC-Chapel Hill, Part 4: <i>E. coli</i>
Room 4	North Carolina's Statewide Water Resources Planning and Implementation Moderator: Craig Caldwell, NC Department of Environmental Quality
3:10 - 3:50	Campbell McNutt, NC DEQ Division of Water Resources, The NC water supply water quality assessment process
3:50 - 4:10	Bruce Campbell, US Geological Survey, USGS water resource projects in North Carolina
4:10 - 4:30	Kim Nimmer, NC DEQ Division of Water Resources, IBT 101: What are interbasin transfers?
4:30 - 4:50	Linwood Peele, NC DEQ Division of Water Resources, Water supply planning: Current and future water demand update
Room 5	Interdisciplinary Perspectives on Sustainable Animal Agriculture and Waste Management in NC: Participatory Session Facilitated by: Stephen Moysey and Jacob Petersen-Perlman, East Carolina University
3:10 - 5:00	See page 16 for special session details
5:00 p.m.	Conference Adjourns
	Please sign the PDH/CEU sign-up form at the registration desk in order to certify your attendance today.