

# 2022 ALABAMA WATER RESOURCES CONFERENCE

## AGENDA OVERVIEW

**WED - 9/7**  
AWRA AL Section Symposium

- 10:00 AM Registration Desk Opens**
- 1:00 PM Welcome & Introductions** | Lynn Sisk | AWRA Alabama Section President
- 1:20 PM Michael Roberts | The Coastal Trust  
Judy Haner | The Nature Conservancy of Alabama
- 2:45 PM Networking Break**
- 3:15 PM Renee Collini | Mississippi-Alabama Sea Grant Consortium  
Leslie Gahagan | City of Foley  
Jeff Collier | City of Dauphin Island
- 4:40 PM Announcements & Adjourn
- 5:30 PM Social & Dinner (Flora-Bama)**

**THURS - 9/8**

- 7:30 AM Registration Desk Opens & Breakfast Buffet**
- 8:00 AM Welcome | Tom Littlepage | Alabama Water Resources Conference Committee  
**Keynote Address** | Blackbelt Infrastructure Panel | *moderated by Mark Elliott - The University of Alabama*  
Lance LeFleur | Alabama Department of Environmental Management  
Sherry Bradley | Alabama Department of Public Health - Bureau of Environmental Services  
3rd Panelist pending
- 8:45 AM **Break**
- 9:15 AM Concurrent Session 1**  
Groundwater | Restoration I | Water Quality I | Lightning Talks I
- 10:45 AM Concurrent Session 2**  
Coastal Resiliency I | Restoration II | Water Quality II | Lightning Talks II
- 12:15 PM **Lunch (Grand Reef)**
- 1:40 PM Concurrent Session 3**  
Water Quality III | Aquatic Ecology I | Coastal Resiliency II | Lightning Talks III
- 3:00 PM **Break**
- 3:30 PM Concurrent Session 4**  
Stormwater | Aquatic Ecology II | Coastal Issues | Lightning Talks IV
- 5:30 PM Social & Poster Session (Grand Reef)** *Refreshments are courtesy of sponsors*

**FRI - 9/9**

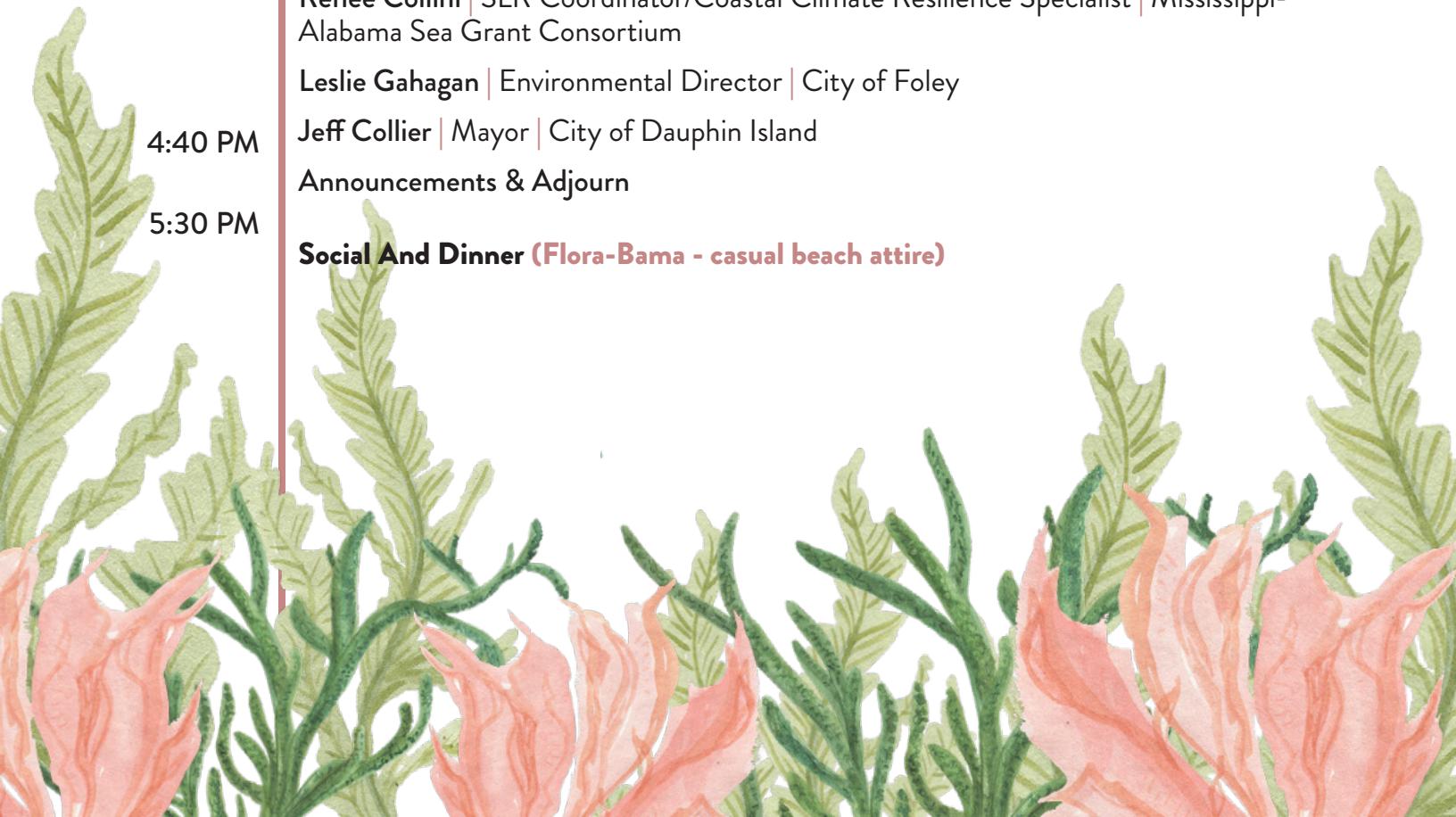
- 7:30 AM Registration Desk Opens & Breakfast Buffet**
- 8:00 AM Welcome | Tom Littlepage | Alabama Water Resources Conference Committee  
**Keynote Address** | Rodney Knight | Director | USGS - Lower Mississippi-Gulf Water Science Center
- 8:45 AM **Break**
- 9:15 AM Concurrent Session 5**  
Agriculture & Irrigation | Modeling I | USGS RESTORE | Wastewater Systems Mgmt. | Outreach
- 10:35 AM **Break**
- 10:55 AM Concurrent Session 6**  
GIS | Modeling II | Drought, Flood & Climate | Water Law & Policy | Water Quantity
- 12:15 PM **Conference Adjourns**

# Alabama Section of the American Water Resources Association **SYMPOSIUM**

**WEDNESDAY | SEPT. 7 | 1:00PM - 4:40PM**

## “Ecological Infrastructure”

- 10:00 AM **Registration Desk Opens (Lobby)**
- 1:00 PM **Welcome & Introductions** | Lynn Sisk | AWRA Alabama Section President
- 1:20 PM **Maryland’s Innovative Approach to Funding Water Quality Protections** | Michael Roberts | President | The Coastal Trust
- 2:00 PM **Addressing Climate Impacts on The Nature Conservancy’s Projects along the Northern Gulf of Mexico** | Judy Haner | Marine Program Director | The Nature Conservancy of Alabama
- 2:45 PM
- 3:15 PM **Networking Break**
- Panel: **Sea Level Rise: Adaptation Planning and Strategies**
- Renee Collini | SLR Coordinator/Coastal Climate Resilience Specialist | Mississippi-Alabama Sea Grant Consortium
- Leslie Gahagan | Environmental Director | City of Foley
- 4:40 PM **Jeff Collier** | Mayor | City of Dauphin Island
- Announcements & Adjourn
- 5:30 PM **Social And Dinner (Flora-Bama - casual beach attire)**





# SESSION 1 THURSDAY | SEPT. 8 | 9:15AM - 10:35AM

## GROUNDWATER

CORAL

MODERATOR: GREG GUTHRIE, GEOLOGICAL SURVEY OF ALABAMA

1. **Long Short-Term Memory (LSTM) Model for Predicting Groundwater Level in the State of Alabama (096).** Victoria Robinson, The University of Alabama Department of Mathematics\*
2. **Hyporheic Zone Temperatures as an Indicator of Surface Water-Groundwater Interactions (081).** Mary Hastings Puckett, Geological Survey of Alabama\*
3. **Karst features and aquifer systems in Alabama (040).** Gheorghe Ponta, Geological Survey of Alabama
4. **In-Situ Chemical Oxidation Groundwater Remediation at the Robertsdale Elementary School ADEM Tank Trust Fund Site (141).** Kendall Rich, Wood Environment & Infrastructure Solutions, Inc.

## RESTORATION I

SALON D

MODERATOR: PAT O'NEIL, GEOLOGICAL SURVEY OF ALABAMA (FORMER)

1. **Use of Indicator of Reduction in Soils (IRIS) in Wetlands (083).** Thorsten Knappenberger, Auburn University
2. **Using hydrogeomorphic characteristics to predict tree species distribution and resulting ecosystem functions in a bottomland hardwood forest (080).** Nate Jones, The University of Alabama
3. **Pensacola East Bay Oyster Restoration Project (111).** Heather Hyde, Jacobs Engineering
4. **D'Olive Watershed Restoration in Baldwin County, Alabama (164).** Christian Miller, Mobile Bay National Estuary Program

## WATER QUALITY I

SALON E

MODERATOR: CHRIS JOHNSON, ALABAMA DEPT. OF ENVIRONMENTAL MANAGEMENT

1. **Generational funding opportunity "now is the time to fund your project" (029).** John Laney and William Lott, Alabama Department of Environmental Management
2. **Carbon Dynamics in Headwater Wetlands of the Weeks Bay Watershed (087).** Ana Flavia Brancalion Costa, Auburn University\*
3. **Investigating physical drivers of stream intermittency in Alabama (046).** Delaney Peterson, The University of Alabama\*
4. **Using the BCG and measures of watershed condition to improve Alabama's Surface Water Quality Program (100).** Lisa Huff, Alabama Department of Environmental Management

## LIGHTNING TALKS I

SALON FGH

MODERATOR: AMY GILL, US GEOLOGICAL SURVEY

1. **The spatiotemporal patterns of community vulnerability in Mobile Bay from 2000-2020 (172).** Wanyun Shao, The University of Alabama.
2. **Temperature Tolerances of Threatened Organisms in the Cahaba River and how Future Climate Conditions May Impact Them (082).** Jonathan Carpenter, Auburn University\*
3. **Hurricane Patterns on the Emerald Coast and the Risk They Pose (116).** Christopher Whatley, Auburn University\*
4. **The effects of dams and invasive species on community structure and trophic interactions of stream crayfishes (119).** Riley Egan, Troy University\*
5. **The relationship between changing land use land cover and macroinvertebrate diversity over twenty years in Choccolocco Creek, Northeast Alabama (147).** Kindall Brown, Jacksonville State University Department of Biology\*
6. **Comparing sediment dynamics between a natural and constructed tidal marsh of the Gulf of Mexico (120).** Jacob Dybiec, The University of Alabama\*
7. **Spatio-temporal variation of nitrogen biogeochemistry in a forested intermittent watershed (092).** Kaci Zarek, The University of Alabama\*
8. **Microplastic accumulation, excretion, and effects on the behavior of freshwater organisms-Daphnia magna (144).** Jessica Okutsu, Auburn University\*
9. **EPA Gulf of Mexico Program Funding (015).** Amy Newbold, US EPA Gulf of Mexico Program
10. **AFC Coastal Program Update: Current and Future Funding Opportunities (025).** Ryan Peek, Alabama Forestry Commission

\*STUDENT PRESENTER



# SESSION 2 THURSDAY | SEPT. 8 | 10:45AM - 12:05PM

## COASTAL RESILIENCY I

CORAL

MODERATOR: REBECCA BEARDEN, GEOLOGICAL SURVEY OF ALABAMA

- 1. A human-natural framework for assessing, forecasting and managing for coastal resiliency at Perdido Bay (157).** Christopher Anderson, Auburn University
- 2. Robust Changes in North America's Hydroclimate Variability and Predictability (074).** Sanjiv Kumar, Auburn University
- 3. Extreme weather threat and watershed land use change: A study of forest landowners on the northern Gulf of Mexico (050).** Anna Brown, Auburn University\*
- 4. Muddied waters: Stakeholder perceptions of water quality and clarity in the northern Gulf of Mexico (021).** Kelly Dunning, Auburn University College of Forestry, Wildlife, and Environment

## RESTORATION II

SALON D

MODERATOR: AMY GILL, US GEOLOGICAL SURVEY

- 1. How EPA's How's My Waterway Creates Easy Access to EPA's Data (016).** Amy Newbold, US EPA Gulf of Mexico Program
- 2. Freshwater Conservation at Scale: A 5-Year Review of Successes, Challenges and Adaptive Thinking (017).** Jason Throneberry, The Nature Conservancy
- 3. ARSNiC: A New Approach for Prioritizing Aquatic Organism Passage and Infrastructure in Alabama (002).** Daniel West, Geological Survey of Alabama

## WATER QUALITY II

SALON E

MODERATOR: CHRIS JOHNSON, ALABAMA DEPT. OF ENVIRONMENTAL MANAGEMENT

- 1. Assessment of Water Quality and Sediment Chemistry at an Abandoned Mine Land Site in Eastern Tuscaloosa County, Alabama (012).** Abby Friedman, The University of Alabama\*
- 2. Stream Crossings in Georgia, A Handbook for Connectivity and Resilience (GA-ACT) (170).** Fred Halterman, Moffatt and Nichol Engineers
- 3. Using molecular tools to discover organisms responsible for taste and odor episodes in a drinking water reservoir (004).** Brendan Higgins, Auburn University
- 4. Impacts of change in landscape composition and configurations on the water quality of Pensacola watershed-bay systems (075).** Tesfay Gebremicael, University of Florida

## LIGHTNING TALKS II

SALON FGH

MODERATOR: PAT O'NEIL, GEOLOGICAL SURVEY OF ALABAMA (FORMER)

- 1. The Georgia Flow Incentive Trust (GA-FIT) - Protecting Farmers and Streams (068).** Mark Masters, Albany State University Georgia Water Planning & Policy Center
- 2. Projected Mid-Century Rainfall Erosivity under Climate Change Over the Southeastern United States (007).** Bijoychandra Takhellambam, Auburn University\*
- 3. Conservation Practice Adoption and Disadoption in the U.S. (061).** Wendiam Sawadgo, Auburn University
- 4. Geographical Distribution of Perceptions: Identifying and Mapping Barriers to Climate-Smart Agriculture in Alabama (073).** Ruchie Pathak, The University of Alabama\*
- 5. Effect of Image resolution and soil core size on soil pore characteristics (056).** Preetika Kaur, Auburn University\*
- 6. Alabama Drought Reporting and Condition Monitoring Program - A New Partnership (161).** Rachel McGuire, Auburn University Water Resources Center
- 7. Sediment Transport and Storage in Geographically Isolated Wetlands within Agricultural Fields in the Southeastern USA (057).** Chloe Eggert, Auburn University\*
- 8. Evaluation of Atmospheric Land Exchange Inverse model (ALEXI) Evaporative Stress Index (ESI) utilizing Soil Climate Analysis Network (SCAN) stations across Alabama (094).** Corey Walker, University of Alabama in Huntsville\*

\*STUDENT PRESENTER

LUNCH IN GRAND REEF: 12:15-1:30 PM



# SESSION 3 THURSDAY | SEPT. 8 | 1:40PM - 3:00 PM

## WATER QUALITY III

CORAL

MODERATOR: SABRA SUTTON, ALABAMA ASSOCIATION OF CONSERVATION DISTRICTS

- 1. Interactions of Per and Polyfluoroalkyl Substances with Dissolved Organic Matter as a Potential Contributor to Soil and Water Contamination (138).** John Lawhon, Auburn University\*
- 2. Modeling Organic Carbon Loading with the Soil Water Assessment Tool: Application to the Big Creek Watershed (076).** Sabahattin Isik, Auburn University
- 3. Alabama's Area Wide Optimization Program (005).** William McClimans, Alabama Department of Environmental Management

## AQUATIC ECOLOGY I

SALON D

MODERATOR: TODD FOBIAN, ALABAMA DEPT. OF CONSERVATION & NATURAL RESOURCES

- 1. Following Watershed Management Plan Recommendations to Eradicate the Island Apple Snail from the Langan Park Lakes in Mobile, Alabama (165).** Christian Miller, Mobile Bay National Estuary Program
- 2. Demonstrating De Minimis Impacts at Cooling Water Intake Structures (018).** Lynn Sisk, Jacobs Engineering and Sheila Scott, Ascend Performance Materials
- 3. Tidal creek ecosystem structure and function changes associated with coastal watershed development (128).** Samuel Bickley, Auburn University\*
- 4. Water Quality Analysis and Habitat Threats Concerning the Slenderclaw Crayfish on Sand Mountain in Northeast Alabama (059).** Rebecca Bearden, Geological Survey of Alabama

## COASTAL RESILIENCY II

SALON E

MODERATOR: ASHLEY HENDERSON, ALABAMA SOIL AND WATER CONSERVATION COMMITTEE

- 1. Development of a Cross-scale Hydrodynamic Model for Perdido Bay (067).** Zhilong Liu, University of South Alabama, Dauphin Island Sea Lab
- 2. Long term trends in temperature, salinity, oxygen, and pH in Alabama coastal waters (019).** John Lehrter, University of South Alabama
- 3. Assessment of the impacts of land use change and future climate change on water quantity and quality in the Perdido Watershed (043).** Dongjun Lee, Auburn University\*
- 4. Forest Carbon Offset Markets and Water Quality (166).** Richard Hall, Auburn University

## LIGHTNING TALKS III

SALON FGH

MODERATOR: ROY MCAULEY, MANUFACTURE ALABAMA

- 1. Overview of Alabama's Growing Envirothon Competition (123).** Courtney Curenton, Alabama Association of Conservation Districts
- 2. Partnerships and Funding Opportunities (168).** Ronald Davis, Wiregrass RC&D
- 3. National Association of RC&D Councils Organization Update (167).** Colton Buckley, National Association of RC&D Councils
- 4. "How-To" Guide for Wastewater Management of Rural, Underserved Communities in the Black Belt Region of Alabama: A Resource for Local Stakeholders (113).** Jillian Maxcy Brown, The University of Alabama\*
- 5. Exploring and Mitigating Pathogen Pollution in Our Waters through Youth-Focused Citizen Science (077).** Mona Dominguez, Auburn University Water Resources Center
- 6. An Educator's Guide to Alabama Rivers (148).** Sydney Zinner, Alabama Water Watch
- 7. Promoting Citizen Science to put paddles and preservation into the current of a Capitol's undervalued asset (151).** Rebekah Correia
- 8. SipSafe Program: Findings from our first year of lead testing in drinking water at child care facilities (093).** Jason Barrett, Mississippi Water Resources Research Institute

\*STUDENT PRESENTER

BREAK: 3-3:30 PM



# SESSION 4 THURSDAY | SEPT. 8 | 3:30PM - 4:50 PM

## STORMWATER

CORAL

MODERATOR: LISA HARRIS, CHOCTAWHATCHEE, PEA & YELLOW RIVERS WMA

1. **Enhancing the Hydraulic Performance of Wattles for Erosion and Sediment Control (041).** Jannell Clampitt, Auburn University\*
2. **Breaking Down LID+GSI Barriers: A Code Audit Tool for Local Governments (159).** Eban Bean, University of Florida
3. **Research Update for the Auburn University - Stormwater Research Facility (048).** Wes Donald, Auburn University
4. **2022 Updates to Alabama's Blue Book (001).** Perry Oakes, AL Soil and Water Conservation Committee

## AQUATIC ECOLOGY II

SALON D

MODERATOR: TODD FOBIAN, ALABAMA DEPT. OF CONSERVATION & NATURAL RESOURCES

1. **The importance of agency-academia partnerships in training aquatic biologists of the future (131).** Lori TolleyJordan, Jacksonville State University
2. **Species-specific thermal stress responses in freshwater mussels of the Pea River, AL (160).** Hannah Adkins, Troy University\*
3. **The Rise and Fall of Native Black Bass Diversity in the Southeastern U.S. (098).** Steve Sammons, Auburn University
4. **A review of North American freshwater mussel (Bivalvia: Unionoida) lethal thermal tolerance (163).** Kaelyn Fogelman, Auburn University

## COASTAL ISSUES

SALON E

MODERATOR: ATHENA CLARK, US GEOLOGICAL SURVEY

1. **Assessing the spatial variation of wave climate in a fetch-limited estuary with clustering methods (070).** Ramin Baghbani, Mississippi State University\*
2. **Applying what we know about local ecological knowledge of Gulf of Mexico Anglers to Coastal Resilience and Management Challenges across Ecosystems (022).** Kelly Dunning, Auburn University College of Forestry, Wildlife and Environment
3. **Saltwater Disposal Wells: An Economic Search to Recover Valuable Metals from Produced Waters (049).** Ann Arnold, Geological Survey of Alabama
4. **Recovering the Oyster Fisheries and Habitat in the Pensacola Bay System (026).** Haley Gancel, Pensacola & Perdido Bays Estuary Program

## LIGHTNING TALKS IV

SALON FGH

MODERATOR: MARY HASTINGS PUCKETT, GEOLOGICAL SURVEY OF ALABAMA

1. **Assessing the Temporal Variations in Groundwater Recharge Fluxes in Wolf Bay Watershed (028).** Pooja Preetha, Alabama A&M University
2. **Empowering oyster growers while growing capacity: Addressing microbiological impediments on shellfish aquaculture (132).** Melissa Partyka, Auburn University
3. **Ethics in the field: evaluating the environmental impacts of field research. (072).** Shelby Rinehart, The University of Alabama
4. **Status of Centralized Wastewater Treatment and Land Applications Sites in the Alabama Black Belt (030).** Tristan Wilson, Auburn University\*
5. **Novel Time-integrated Techniques to Quantify Waterborne Fecal Microorganisms in the Alabama Black Belt (154).** Corinne Baroni, The University of Alabama\*
6. **Engaging partners and empowering communities: establishing a well water network in Alabama (033).** Jessica Curl, Auburn University Water Resources Center
7. **Forecasting harmful algal blooms in inland water bodies using Sentinel-2 data and long-short term memory (LSTM) (134).** Kamand Bagherian, Auburn University\*
8. **A Status Check of Groundwater Data Management in the Southeastern U.S. (039).** Eliane Volk, The University of Alabama\*
9. **Blindly Seeking the Blind: Assessing the Efficacy of an Environmental DNA (eDNA) Metabarcoding Approach For The Detection Of Subterranean Crayfish (052).** Nathaniel Sturm, Geological Survey of Alabama - Ecosystems Investigations Program.

\*STUDENT PRESENTER



# POSTER SESSION & SOCIAL

THURSDAY | SEPT. 8 | 5:30-7:30 PM | GRAND REEF

## STUDENT POSTERS

- 1. Wetland Accretion Rate Model of Ecosystem Resilience (WARMER) and Its Application to Coastal Transportation Infrastructure Along Alabama State Route 180. (071)** John Anderson, Auburn University
- 2. Investigating the Differences in Severity and Frequency of Multi-year Streamflow Deficits Using Instrumental and Reconstructed Data: A Case Study of the Wasatch Mountain Basins. (122)** Danyal Aziz, The University of Alabama
- 3. Using Analytical Hierarchy Process to Quantify Survey Data for GIS Modeling. (078)** Aaron Blackwell, The University of Alabama
- 4. Quantitative Microbial Risk Assessment to determine the level and source of fecal pollution, nutrients and water quality for various land uses and characterization in NW Florida aquatic systems. (062)** Ronell Bridgemohan, Watershed Management Laboratory, UF WFREC
- 5. Performance of a Hybrid Sand Filter for Onsite Wastewater Treatment Applications in the Alabama Black Belt. (124)** Rachel Chai, University of South Alabama
- 6. Life Cycle Analysis of Water Distribution Systems in the Context of Physicochemical Pipe Degradation. (014)** Jonathan Clayton, The University of Alabama
- 7. Develop Tidal/Non-Tidal Forested Wetlands Using Imagery Classification. (155)** Eian Davis, Auburn University
- 8. Investigating the Effectiveness of Best Management Practices in Reducing the Agricultural Water Footprint in Alabama. (171)** Betelhem Demeke, The University of Alabama
- 9. Examining the extent and functional value of headwater wetlands in relation to land use in coastal Alabama. (158)** Kurtis Fisher, Auburn University
- 10. Detecting global declines of stoneflies at a local scale: measuring changes in stonefly diversity in the Cahaba River of central Alabama. (135)** Gabriella Gentry, Jacksonville State University
- 11. Improved Stormwater Management through Zeolite Amended Bioretention Media. (091)** Shelton Griffith, Auburn University
- 12. Stream temperature prediction using a machine learning approach in the Mobile River Basin, AL. (090)** Henrique Haas, Auburn University
- 13. Flue Gas Desulfurization (FGD) Gypsum can Effectively Remove Phosphorous (P) from Water. (010)** Ansley Hamid, Auburn University
- 14. Citizen-Science approach to testing private well water quality. (118)** Sharaf Anika Hoque, Auburn University
- 15. Effect of cover crop and tillage practices on soil pore characteristics. (051)** Preetika Kaur, Auburn University
- 16. Into the deep: How far into the water column can a drone actually measure? (069)** Kelly Kaye, Auburn University
- 17. Assessment of a modified evaporation method used for evaluating unsaturated soil properties. (121)** Mahlet Kebede, The University of Alabama
- 18. Engineering Cost-Effective Biochars for Efficient Removal of PFAS in Water. (023)** Samuel Krebsbach, Auburn University
- 19. Impacts of Tropical Cyclone on Streamflow and Suspended Sediment Dynamics in Large Global Rivers. (031)** Sera May, The University of Alabama
- 20. Geochemical modeling of the speciation and mobilization of arsenic and molybdenum in coal combustion residual sites of Alabama, USA. (143)** Shifat Monami, Auburn University
- 21. Evaluation of LSTM Networks for Forecasting Multi-season Streamflow in a Mountain Catchment. (107)** Savalan Neisary, The University of Alabama

- 22. Assessing the benefits of different GIPs for improvement of stormwater runoff quality from a parking lot. (112)**  
Gianluca Nicolaico, Auburn University
- 23. Comparison of a rectangular grid and hybrid curvilinear grid EFDC hydrodynamic models in Biscayne Bay. (109)**  
Nathaniel Nwogwu, Auburn University
- 24. Ensuring safe drinking water quality in Northern Haiti: Financial sustainability of drinking water laboratory related to Operating Costs, User Demand, and Economic Conditions. (037)** Lonege Ogisma, Auburn University
- 25. Evaluation of wood-chip bioditch reactors as a nutrient reduction conservation strategy. (101)** Geoffrey Payne, Arkansas State University
- 26. Spatial and temporal changes of flash flood occurring precipitation events (FOPE) in the Southeastern United States. (058)** Mohammad Siddiqur Rahman, The University of Alabama
- 27. The Development of a MODFLOW Groundwater Model to investigate groundwater/surface water interaction in the Mobile Bay Watershed. (153)** John Richins, USGS Lower Mississippi-Gulf Water Science Center
- 28. Examining the effect of salinity on dolphin mortality by Lagrangian particle tracking in a hydrodynamic model. (066)**  
Mehrzaad Shahidzadehasadi, Auburn University
- 29. Runoff sediments and nutrient losses from soybean crop. (142)** Arpita Sharma, Auburn University
- 30. Rainfall Intensity-duration-frequency curves over Southeastern, US under climate scenarios using Artificial Neural Networks. (011)** Bijoychandra Takhellambam, Auburn University
- 31. Evaluating the Synergistic Effects of MIEX Resin and Coagulation on the Removal of Disinfection Byproduct Precursors in a Pilot-Scale Water Treatment Plant. (044)** Melanie Vines, The University of Alabama
- 32. Hydrologic Controls on Organic Matter Partitioning in Headwater Streams Across Alabama. (149)** Michelle Wolford, The University of Alabama
- 33. Water Availability in HUC06 Basins Under the Changing Climate Using Budyko Framework. (036)** Fitsume Wolkeba, The University of Alabama
- 34. Watershed Network Dry Down Effects on Dissolved Gas Concentrations (N<sub>2</sub>, Ar, O<sub>2</sub>) in a Prairie Stream. (089)** Kaci Zarek, The University of Alabama

## WATER PROFESSIONAL POSTERS

- 35. Phosphorus solubility in traditional versus gypsum treated poultry litter and its environmental implications. (145)**  
Debolina Chakraborty, Auburn University
- 36. Los Angeles Aqueduct: Geovisualization of Key Infrastructure and Design Phases I, II, and III. (034)** Philip Chaney, Auburn University
- 37. The Impact of Irrigation on Crop Productivity in U.S. Agriculture. (156)** Valentina Hartarska, Auburn University
- 38. Alabama Center Pivot Irrigated Acreage Survey: 2006-2021. (047)** Krel Haynes, University of Alabama in Huntsville
- 39. Stochastic Analysis of Profitability of Irrigated Corn Production in Alabama. (152)** Denis Nadolnyak and Valentina Hartarska, Auburn University
- 40. Monitoring sediment and nutrient losses from paired watersheds in agriculture fields in runoff water in Alabama farms. (146)** Anh Nguyen, Auburn University
- 41. Stream Connectivity: Geomorphic and Anthropogenic Influence on Longitudinal Fragmentation in Alabama. (008)**  
Daniel West, Geological Survey of Alabama

**REFRESHMENTS ARE COURTESY OF 2022 ALWRC SPONSORS**





# SESSION 5

FRIDAY | SEPT. 9 | 9:15 AM - 10:35 AM

## AGRICULTURE & IRRIGATION

CORAL

MODERATOR: BOB PLASTER, ALABAMA DEPT. OF AGRICULTURE & INDUSTRIES

1. **Understanding the interacting effects of climate and land use on sedimentation rates in geographically isolated wetlands in agricultural landscapes (102).** Frances O'Donnell, Auburn University
2. **Effects of Poultry Litter with Flue Gas Gypsum Bedding on Nutrient Release and Water Quality (060).** Anna Powell, Auburn University\*
3. **Evaluating Ecosystems Services for Irrigated versus Rainfed Agricultural Land in Watershed Plans (063).** Maury Estes, University of Alabama in Huntsville
4. **A quantitative PCR-based approach to assess fecal pollution sources in the Lake Martin Watershed (038).** Wenjing Ren, Auburn University\*

## MODELING I

EMERALD

MODERATOR: KEITH CHANDLER, ALABAMA POWER

1. **Developing Water System Climate Resilience with Research to Operations Stakeholder Engagement (106).** Steven Burian, The University of Alabama
2. **Restoring streamflow in southeastern watersheds: simulated forest restoration and irrigation reduction have similar effects (013).** Steven Brantley, Jones Center at Ichauway
3. **Investigating the impacts of longleaf pine (*Pinus palustris*) restoration on water quantity and quality in the Mobile River Basin-AL (088).** Henrique Haas, Auburn University\*
4. **Documenting change in the Coosa Bypass using the High Definition Stream Survey (103).** Brett Connell, Trutta Environmental Solutions

## USGS RESTORE

SALON D

MODERATOR: GREG GUTHRIE, GEOLOGICAL SURVEY OF ALABAMA

1. **Uncertainty of Multiple-Machine Learning Statistical Daily Salinity Forecasting for Bays and Estuaries of the Gulf Coast (117).** William Asquith, USGS Oklahoma-Texas Water Science Center
2. **Ecological limit functions relating 2000-2020 streamflow statistics to benthic macroinvertebrate multimetric index in Mississippi, USA. (127).** Sarah Banks, USGS
3. **Low-flow frequency estimation from synthetic daily mean streamflow with bias correction estimated at 5,316 level-12 hydrologic unit code (HUC12) pour points in the south-central and southeastern United States (162).** Amanda Whaling, USGS LMG WSC
4. **Baseline Flow, Gage Analysis, and On-Line Tool Development Supporting Bay and Estuary Restoration in Gulf States (140).** Kirk Rodgers, USGS Lower Mississippi-Gulf Water Science Center
5. **Generalized Additive Model Estimation of No-Flow Fractions and L-Moments to Support Flow-Duration Curve Quantile Estimation (136).** Elena Crowley Ornelas, USGS
6. **Modeling hydrologic alteration in the Pearl and Pascagoula River Basins using rule-based model tree machine learning algorithm (133).** Victor Roland, USGS

## WASTEWATER SYSTEMS MANAGEMENT

SALON E

MODERATOR: LYNN SISK, JACOBS

1. **Seeking Sustainable and Replicable Wastewater Solutions for Small, Rural Communities in the Alabama Black Belt-Decentralized Cluster Demonstrations (139).** Kevin White, University of South Alabama
2. **Soluble recalcitrant phosphorus removal and recovery from wastewater using micro-algae systems (085).** Giacomo DeLuca III, University of South Alabama\*
3. **Understanding Socio-technical Barriers to Decentralized Wastewater Management in the Rural Alabama's Black Belt (064).** Amal Bakchan, University of South Alabama
4. **Functionalized-MXene Thin-Film Nanocomposite Hollow Fiber Membranes for Enhanced PFAS Removal from Water (009).** Milad Esfahani, The University of Alabama

## OUTREACH

SALON FGH

MODERATOR: ASHLEY MCVICAR, ALABAMA POWER

1. **Spreading awareness and prevention of marine debris through community cleanup events (035).** Jessi James, Mississippi Inland Cleanup Program
2. **Reimagining Public Participation in Watershed Stewardship (045).** Laura Bell, Auburn University Water Resources Center
3. **Turning a Plan into Action: Working alongside stakeholders to restore the Pensacola and Perdido Bays (104).** Whitney Scheffel, Pensacola and Perdido Bays Estuary Program
4. **Respecting Public Priorities & Protecting Water Resources (065).** Scott Rogers, Alabama Department of Transportation

\*STUDENT PRESENTER

BREAK - 10:35-10:55 AM



# SESSION 6

FRIDAY | SEPT. 9 | 10:55 AM - 12:15 PM

## GIS

MODERATOR: LYNN SISK, JACOBS

CORAL

1. **Are elevated E. coli concentrations in Choccolocco Creek related to onsite wastewater treatment systems and land cover? (110).** Mallory Jordan, Auburn University\*
2. **Septic Tank Inventory: A GIS approach to base line data collection (126).** Casey Fulford, AL Association of Conservation Districts
3. **A GIS Analysis of Individual On-Site Wastewater Disposal Systems and their Vulnerability to Climate Change in Coastal Regions (125).** John Cartwright, Mississippi State University
4. **Mapping the Impacts of Climatic Extremes across the CONUS on the cloud and on-the-fly (032).** Anuska Narayanan, The University of Florida\*

## MODELING II

MODERATOR: JENNIFER RASBERRY, ALABAMA POWER

EMERALD

1. **Future Project Timelines in the Changing Landscape of FEMA's Risk MAP Program (086).** Jeff Zanotti, Wood Environment & Infrastructure Solutions, Inc.
2. **Floating Aquatic Vegetation on Wheeler Reservoir, Alabama (024).** Daniel Saint, Tennessee Valley Authority
3. **Diverse farmer behaviors lead to complex food-water-energy interactions (042).** Nicholas Magliocca, The University of Alabama Department of Geography
4. **An Overview of FEMA Flood Risk Products Available for Communities in Alabama (099).** Kelley Rich, Wood Environment & Infrastructure Solutions, Inc.

## DROUGHT, FLOOD & CLIMATE

MODERATOR: EVE BRANTLEY, AUBURN UNIVERSITY WATER RESOURCES CENTER

SALON D

1. **Drought Impacts on Reservoir Retention Time in Alabama and the Southeastern United States (130).** Benjamin Webster, Auburn University\*
2. **USGS Water Mission Area FY21 NGWOS R&D Project: USGS Real-time Flood Impact Map (169).** Athena Clark, U.S. Geological Survey
3. **Differences in tolerance and responses to thermal stress between diploid and triploid oysters in the northern Gulf of Mexico (115).** Kayla Boyd, Auburn University\*

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MODERATOR: ASHLEY HENDERSON, ALABAMA SOIL AND WATER CONSERVATION COMMITTEE

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1. **ADEM Drinking Water Update (006).** Ross Caton, Alabama Department of Environmental Management
2. **Delineation of Groundwater Recharge Areas for Water Management and Water Policy Development (020).** Greg Guthrie, Geological Survey of Alabama
3. **Rural Resources - Mapping Alabama Grassroots Groups (003).** Ryan Thomson, Auburn University Department of Agricultural Economics and Rural Sociology
4. **Developing an Ecosystem Services Framework in Watershed Plans (129).** Adam Newby, Auburn University Water Resources Center

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1. **Update on Water Use Data Management Application for Alabama (027).** Michael Harper, Alabama Office of Water Resources
2. **Public knowledge and understanding about groundwater (097).** Ann Ojeda, Auburn University
3. **An irrigation potential index for sustainable surface water withdrawals (105).** Lee Ellenburg, University of Alabama in Huntsville
4. **Water Use in the Tennessee Valley for 2020 and Projected Use in 2045 (053).** Jenny Sharkey, Tennessee Valley Authority

\*STUDENT PRESENTER