★★★ USA

SIWI STOCKHOLM JUNIOR WATER PRIZE

Water Environment Federation®
the water quality people®

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Let's Solve Water

United States 2022 Stockholm Junior Water Prize State Winners

The following state winners have advanced to the U.S. Stockholm Junior Water Prize national competition, to be awarded June 18th, 2022
at the Colorado School of Mines, in Golden, Colorado

Alabama
Mustafa Alperen Gurbuz
Cleaning Up the World's Oceans Using Underwater Laser Imaging
Northridge High School
Science Teacher: Michelle Fuller
Sponsored by the Alabama Water Environment Association

Alaska
Elizabeth Djajalie
Development of Prototype Macroalgae Bioplastics to
Alleviate Pollution from Single-Use Petroleum Plastics
Thunder Mountain High School
Science Teacher: Rebecca Farrell
Sponsored by the Alaska Water Wastewater Management Association

Arizona
Arjun Gupta
Nouveau-AI-Plastic-Degen: A Novel Approach Using AI-Based Enzyme Engineering to Design New and Highly Efficient Marine Plastic Degrading Enzymes
Quest for Education and Arts
Science Teacher: Rebecca Thai
Sponsored by the AZ Water

Arkansas
No Qualifying Entries
Sponsored by the Arkansas Water Environment Association

California
John Benedict Estrada & Pauline Victoria
Conservation of Irrigation Water through a Novel AI Drought Assessment (AIDA) Model in Field Grown Tomato (Solanum lycopersicum) Using a Custom-Built "Spectra-Rover"
Clovis North High School
Science Teacher: Kay Barrie
Sponsored by the California Water Environment Association

Colorado
Paige Behrens, Peightyn Clapper, Brynne Casto
Evaluating the Effects of Ethinylestradiol on the Heart Size of Daphnia magna, as Analyzed by ImageJ
Rock Canyon High School
Science Teacher: Susanne Petri
Sponsored by the Rocky Mountain Water Environment Association

Connecticut
Adam Kleshchelski
Remediation of Fire-Foam PFAs from Contaminated Water Using an Eco-Friendly and Reusable Water Filtration System
Greenwich High School
Science Teacher: Andrew Bramante
Sponsored by the New England Water Environment Association

Delaware
No Qualifying Entries
Sponsored by the Chesapeake Water Environment Association

District of Columbia
No Qualifying Entries
Sponsored by the Chesapeake Water Environment Association

Florida
Angela Gao
Recovering Phosphorus from Wastewater as Fertilizer Using
Biochar Enabled Column Filters and Flow Reactors
F.W. Buchholz High School
Science Teacher: Marc Moody
Sponsored by the Florida Water Environment Association

Georgia
Emily White
Sustainable Habitats for Crassostrea virginica
McIntosh High School
Science Teacher: Seth Bishop
Sponsored by the Georgia Association of Water Professionals

Hawaii
Landon Choy
Harnessing the Energy in Waves to Generate Electricity
Kamehameha Schools
Science Teacher: Gail Ishimoto
Sponsored by the Hawaii Water Environment Association

Idaho
Taryn Godfrey
Microplastic Filter for the Outflow of a Washing Machine
Grangeville High School
Science Teacher – Shaun Bass
Sponsored by the Pacific Northwest Clean Water Association

Illinois
Nicole Sandu
Effect of Phytoremediation on Eutrophication
Lane Tech College Prep
Science Teacher: Lucy Young
Sponsored by the Illinois Water Environment Association

Indiana
Amelia Eicher-Miller
Macroinvertebrate Number, Species, and Pollution Intolerance Link to
Urban and Rural Aquatic Ecosystem Health in Tippecanoe Indiana
West LaFayette High School
Science Teacher: Brittany Croy
Sponsored by the Indiana Water Environment Association

Iowa
Kiersten Knobbe
Turbid or Not Turbid? That is the Question: Creating a Water Filtration
and Sanitation Method for Developing Countries
AC/GC High School
Science Teacher: Jennifer Reed
Sponsored by the Iowa Water Environment Association

Kansas
Aniela Nicole Cabrera
The Affects of Water Quality in KC Streams on Planaria
Center for Advanced Professional Studies
Science Teacher: Eric Kessler
Sponsored by the Kansas Water Environment Association

Kentucky
Douglas Lin
Efficacies of Different Solvents on Iron Power Reclamation
Used in Microplastic Removal
duPont Manual High School
Science Teacher: Valerie Conti
Sponsored by the Clean Water Professionals of Kentucky and Tennessee

Louisiana
Lauren Ejiaga
Assessing and Exploring the Efficacy of Sea Plants to Help Mitigate the Impacts of Ocean Acidification
Benjamin Franklin High School
Science Teacher: Teresa Burchette
Sponsored by the Louisiana Water Environment Association

Maine
Alexander Busko
Microplastics: Using Oil's Density to Extract These Tiny Toxins from Water
Bangor High School
Science Teacher: Barbara Stewart
Sponsored by the New England Water Environment Association

Maryland
Saketh Sundar
A Low Cost Approach for Detection, Classification, and Quantification of Microplastic Pollution in the
Chesapeake Watershed Using
Deep Learning and IoT (Internet of Things) Devices
River Hill High School
Science Teacher: Janine Sharbaugh
Sponsored by the Chesapeake Water Environment Association

Massachusetts
Akhila Ram
Continuous Groundwater Monitoring with Machine Learning
Lexington High School
Science Teacher – Cheryl Zurbrick
Sponsored by the New England Water Environment Association

Michigan
Anthony Daoud
Assessing the Genotoxicity and Coliform Contamination of
Rivers and Lakes in the Great Lakes Bay Area
Saginaw Arts and Sciences Academy
Science Teacher – Matthew Miller
Sponsored by the Michigan Water Environment Association

Minnesota
Johanna Bernu
Disinfectant Properties of Nuphar advena: An Ethnopharmaceutical Approach
Cloquet Senior High School
Science Teacher: Cynthia Welsh
Sponsored by the Central States Water Environment Association

Mississippi
William Berry IV
A Novel Method for Regenerating Biosorbents
Oxford High School
Science Teacher: Sarah Robinson
Sponsored by the Mississippi Water Environment Association

Missouri
Kaden Luker
Using Micrococcus Luteus, Lactococcus Lactis, and Bacillus Cereus Bacteria and the Breaking Down of
Microplastics
Jackson High School
Science Teacher – Leanne Thele
Sponsored by the Missouri Water Environment Association

Montana
Keanu Ng
The Effect of Wildfire Ash on the Growth of Algae
Flathead High School
Science Teacher – Renee Cordes
Sponsored by the Montana Water Environment Association

Nebraska
Scotlyn Kincaid & Brookelyn Brighton
The Effects of Sunscreen on Anthozoa
Zoo Academy
Science Teacher – Heather Liggett
Sponsored by the Nebraska Water Environment Association

Nevada
No Qualifying Entries
Sponsored by the Nevada Water Environment Association

New Hampshire
Abhinav Avvaru
An Economical High Precision Home
Nitrate Detecting Device for Water Monitoring at Homes
Nashua High School South
Teacher – Dr. Alyson Aiken-Hobbs
Sponsored by the New England Water Environment Association

New Jersey
Katherine Fang
Surveying Water Surface and Wetlands in Delaware Bay
Using Cloud-Removed LandSat Data
High Technology High School
Science Teacher – Dina Ellsworth
Sponsored by the New Jersey Water Environment Association

New Mexico
Mario Vargas
Endgame: Soil and Water Soil Conditioner Impact on Lumbricus terrestris (Earthworm) and Daphnia
magna (sea flea) mortality, metabolism and behavior
Taos Academy State Charter School
Science Teacher – Laura Tenorio
Sponsored by the Rocky Mountain Water Environment Association

New York
Roberto Lopez
Evaluating Phragmites Australis Wrack Accumulation in a
Long Island Salt Marsh Ecosystem and Assessing its Effect on
Carbon Sequestration, the Nitrogen Cycle, and Sediment Biota
Brentwood High School
Science Teacher: Rebecca Grella
Sponsored by the New York Water Environment Association

North Carolina
Caroline Lorio
Using Phosphorus-Binding Clays to
Mitigate Cyanobacterial Blooms Caused by Hog Lagoons
North Carolina School of Science and Mathematics
Science Teacher: Hearther Mallory
Sponsored by the North Carolina Water Environment Association

North Dakota

Gavin Kratcha
An Innovative Approach to Manage the Environmental Impact of Agricultural Drainage Water
Hankinson High School
Science Teacher: Patty Kratcha
Sponsored by the North Dakota Water Environment Association

Ohio
Juliella Hankinson
Salt in the Water? A Study of Variables Effecting Chloride Levels in
Tributaries from Excessive use of Road Salt
Hankinson Home Academy
Science Teacher: Bethany Hankinson
Sponsored by the Ohio Water Environment Association

Oklahoma
Satine Janae Thomas & Eva Sigler
Testing the contents of our local water sources!
Bartlesville High School
Science Teacher: Gary Layman
Sponsored by the Oklahoma Water Environment Association

Oregon
Grace Sato
DRINC Water- Design to Remove Impurities and Noxious Chemicals from Water
West Linn High School
Science Teacher – Danielle Schroeder
Sponsored by the Pacific Northwest Clean Water Association

Pennsylvania
Abby Robinson
Antibiotic-resistant Genes in the Raw and Treated
Drinking Water of the Schuylkill Watershed
Conrad Weiser High School
Science Teacher: John Siefert
Sponsored by the Pennsylvania Water Environment Association

Puerto Rico
Racxel Espada Figueroa
Reusing Sargassum into Paper as a Solution to its
Accumulation Problem on the Puerto Rican Coasts
Escuela Especializada en Ciencias, Matemáticas y Tecnología CIMATEC
Science Teacher: Shriley Martinez
Sponsored by the Puerto Rico Water & Environment Association

Rhode Island
No Qualifying Entries
Sponsored by the New England Water Environment Association

South Carolina
Lily Zhang
The Individual and Combined Effects of Microplastics and Acetaminophen
on the Heart Rate and Survival of Daphnia magna
Spring Valley High School
Science Teacher: Michelle Wyatt
Sponsored by the Water Environment Association of South Carolina

South Dakota
Reece Loewe
The Effect of Cloud Seeding on Directional Precipitation
Avon High School
Science Teacher: Paul Kuhlman
Sponsored by the South Dakota Water Environment Association

Tennessee
Travis Rawlinson
Tourism and Commercial Development along the Little Pigeon River: An Assessment of Stream Health,
Coliform Bacteria, and Wastewater Treatment Impacts
Northview Senior Academy
Science Teacher – Kimberly Duncan
Sponsored by the Clean Water Professionals of Kentucky and Tennessee

Texas
Aithreya Thoppay
A Novel Hydrophobic Corn Stover Sponge With the Implementation of Iron Oxide Nanoparticles and
Various Alterations in Material Chemistry
Reedy High School
Science Teacher – Sarah Hartwig
Sponsored by the Water Environment Association of Texas

Utah
Ruchi Agarwal
Water Scarcity in the Arid West: What is the Role of Harmful Algal Blooms?
Rowland Hall High School
School Science Teacher – Natascha Knowlton
Sponsored by the Water Environment Association of Utah

Vermont
Saksham Bhardwaj
Changes in Algae Growth Due to Changes in Biodiversity
South Burlington High School
Science Teacher: Nathaniel Moore
Sponsored by the New England Water Environment Association

Virgin Islands
No Qualifying Entries
Sponsored by the Seven Seas Water Corporation

Virginia
Dhruvi Patel
The Effect of Bioprinted Chlorella-Based Filtration Systems on
Nitrate Concentration in Water
Roanoke Valley Governor's School
Science Teacher: Steve Smith
Sponsored by the Virginia Water Environment Association

Washington
Monisha Krothapalli
Engineering a Surface Flow Constructed Wetland to
Evaluate Efficiency for Combating Water Scarcity
Tesla STEM High school
Science Teacher: Kate Allender
Sponsored by the Pacific Northwest Clean Water Association

West Virginia
No Qualifying Entries
Sponsored by the West Virginia Water Environment Association

Wisconsin
Jocelyn Liao
A Green Roof Module with Integrated Plant Microbial Fuel Cell (P-MFC) - Stormwater Mitigation and
Green Electricity Generation
Homestead High School
Science Teacher: Ashley Ackmann
Sponsored by the Central States Water Environment Association

Wyoming
Riley Thomas
Perfluorinated Compounds and Their Possible Impact on Aquatic Food Chains:
Considering Potential Impacts of Fracking Fluids on Water Qualityn
Greybull High School
Science Teacher: Joel Kuper
Sponsored by the Rocky Mountain Water Environment Association