



Stockholm *Junior* Water Prize



United States 2024 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 22, 2024, at the Colorado School of Mines in Golden, Colorado.

Alabama

No Qualifying Entries.

Alaska

No Qualifying Entries.

Arizona

Araj Shroff

Natural Aqua Purifier: A Novel and Sustainable Water Purification Approach Utilizing Natural Coagulants for Easy

Implementation in Rural Regions

BASIS Chandler High School

Science Teacher: Daniel Hodge

Sponsored by the AZ Water Association

Arkansas

No qualifying entries.

California

Adrith Kurlagunda

Novel Solar Water Purification System Using Fresnel Lenses

Irvington High School

Science Teacher: Priya Srinath

Sponsored by the California Water Environment Association

Colorado

Zachariah Nagle

Testing Water Pollution and Radioactivity Levels Near Suncor's Petrochemical

Refinery in Commerce City, Colorado

Fairview High School

Science Teacher: Paul Strode

Sponsored by the Rocky Mountain Water Environment Association

Connecticut

Justin Bernstein

Genetic Engineering of Cryobacterium to Increase Silica Content and

Enhance the Glacial Albedo of Black Arctic Oceans

Greenwich High School

Science Teacher: Andrew Bramante

Sponsored by: the New England Water Environment Association

Delaware

No Qualifying Entries

Florida

Mahie Patil

Year 2: A Novel Biodegradable Sorbent for Oil Spills

Orlando Science High School

Science Teacher: Judith Bright

Sponsored by the Florida Water Environment Association

Georgia

Aliana Dandawala

Implications of Bacteria and Phytoplankton in Copper Absorption

Gwinnett School of Mathematics, Science, and Technology

Science Teacher: Dr. Courtney Cox

Sponsored by the Georgia Association of Water Professionals

Hawaii

Vera Wang

Constructing a Novel Aquatic Microplastic Filtration Device Utilizing Natural, Biodegradable Materials

Henry J. Kaiser High School

Science Teacher: Darin Kohara

Sponsored by the Hawaii Water Environment Association

Idaho

Tabitha Stoner & Caryss Barger

Raft or Refugium?

Grangeville High School

Science Teacher: Sean Bass

Sponsored by the Pacific Northwest Clean Water Association

Illinois

Savannah Ramsey & Abigail Shaffer

Eco-Engineered Floating Wetlands: A Promising Technique to Improve Water Quality

Sponsored by the Illinois Water Environment Association

Indiana

Lukas Dahlstrom

Comparative Analysis of Methods to Enhance Granulated Active Carbon's Adsorption Capacity to

Remove PFAS Contaminants from Water

Brebeuf Jesuit Preparatory School

Science Teacher: Jonas Temp

Indiana Water Environment Association

Iowa

Logan Foltz

Polymers: The Rising Complications in our Iowa Waterways

Souix Center High School

Science Teacher: Christine Brasser

Sponsored by the Iowa Water Environment Association

Kansas

Elizabeth Barnes

Microplastic Floatation: A Novel Method to Analyze and Remove Microplastics

High School: Shawnee Mission School District, Center for Academic Achievement

Science Teacher: Kenneth Lee

Sponsored by the Kansas Water Environment Association

Kentucky

Karthika Hariprasad

Developing a Novel Eco-Friendly Plastic Alternative Utilizing Polyvinyl Alcohol and
Plant-Based Resin to Protect Terrestrial and Aquatic Ecosystems

Paul Laurence Dunbar High School

Science Teacher: Elizabeth Pelphrey

Sponsored by the Clean Water Professionals of Kentucky & Tennessee

Louisiana

Vennela Malireddy

What is the Most Feasible & Effective Method to Remove Microplastics from Water?

Caddo Parish Magnet High School

Science Teacher: Cameron Hall

Sponsored by the Louisiana Water Environment Association

Maine

Minchae Kim

Performance of Synthesized Nanobots on Micro and Nano Plastic Adsorption in
Real-World Aquatic Environment

Fryeburg Academy

Science Teacher: Dylan Harry

Sponsored by the New England Water Environment Association

Maryland

Adam Tang

Exploring Microplastic Dynamics in Rivers: Insights from Flume Experiments and River Surveys

Philips Exeter Academy

Science Teacher: Dr. Jason Davidson

Sponsored by the Chesapeake Water Environment Association

Massachusetts

Dylan Striek

The Electrolytic Extraction of Dawsonite from Ocean Water:

Efficient Salt Water Mineral Recovery Through Electrolysis

Hopkinton High School

Science Teacher: Kristen Murphy

Sponsored by the New England Water Environment Association

Michigan

Abrar Hossen

Hydrophobic Eutectic Solvents for Environmentally Enhanced Water Purification

Kalamazoo Area Mathematics & Science Center

Science Teacher: Rebecca Joyce

Sponsored by the Michigan Water Environment Association

Minnesota

Tyler Clair

Food Waste-Based Biocoagulants:

A Novel Approach to Sustainably Remove Microplastics for Future Alternatives in Water Treatment

Minnetonka High School

Science Teacher: Kevin Burns

Sponsored by the Central States Water Environment Association

Mississippi

No Qualifying Entries

Missouri

Simon Webbenmeyer

Efficiency of a 3D-Printed Pico-Hydroelectric Generation System
Using a Fused Deposition Modeling Printer

Perryville Senior High School

Science Teacher: Leanne Thele

Sponsored by the Missouri Water Environment Association

Montana

Austin Habets

Effects of Nutrient Concentrations on Attached Algae: Clark Fork River Case Study

North Toole County High School

Science Teacher: Amanda Nix

Sponsored by the Montana Water Environment Association

Nebraska

Skyler L. Meinecke

The Effects of Rotenone Used in Lake Kill-Offs on Macroinvertebrate Populations in

Wagon Train Lake Overtime, Lancaster Co, Nebraska

Science Program Focus, Lincoln Public Schools

Science Teacher: Emily Rose Seifferlein

Sponsored by the Nebraska Water Environment Association

Nevada

No qualifying entries.

New Hampshire

Mihir Garimella

Low-Cost Autonomous Surface Vehicle for Water Monitoring

Nashua High School South

Science Teacher: Cynthia Pitkin

Sponsored by the New England Water Environment Association

New Jersey

Gracelynn Hao

Green Synthesis of Black TiO₂ Nanoparticles: A Promising Candidate for
Solar-Driven Photocatalytic Water Decontamination

Bridgewater-Raritan Regional High School

Science Teacher: Fangze Shang

Sponsored by the New Jersey Water Environment Association

New Mexico

No Qualifying Entries.

New York

Dylan Yoon

The Enhancement of a Novel 3D-Printed Electrodialysis Device through the Implementation and
Optimization of Spacer Designs

Manhasset High School

Science Teacher: Alison Huenger

Sponsored by the New York Water Environment Association

North Carolina

Rachit Chandrakul

Carbon Quantum Dots: Green Nanotechnology for Detection and
Removal of Methylene Blue from Textile Industry Wastewater

Atkins Academic & Technology High School

Science Teacher: Latoya Scott

Sponsored by NC One Water

North Dakota

No Qualifying Entries.

Ohio

Ella Richer

The Effect of Arbuscular Mycorrhizal Fungi on Secale cereale
Biomass Production and Phosphates in Runoff

Pettisville High School

Science Teacher: Donna Meller

Sponsored by the Ohio Water Environment Association

Oklahoma

Ariel Diaz Salinas & Sophia Hunt

Distribution of Heavy Metals in the Soil Around Tar Creek

Owasso High School

Science Teacher: Shannon Chatwin

Oklahoma Water Environment Association

Oregon

Jiaming Zhang

EcoProbe: A Novel Machine Learning Model for Predicting Water Chemical Values with Satellite Imagery through Convolutional Neural Network (CNN) and Advanced Multi-Regression Modeling of Wetland Ecosystem Health

Oregon Episcopal School

Science Teacher: Joshua Caditz

Sponsored by the Pacific Northwest Clean Water Association

Pennsylvania

Aditya Kothari & Remington Yang

Use of Non-Thermal Plasma Coupled with Granular Activated Carbon for the Degradation of Short-Chain PFAS

Conestoga High School

Science Teacher: Scott Best

Sponsored by the Pennsylvania Water Environment Association

Puerto Rico

Hugo Córdova de Varona

Using an App for Controlling an Automated Arduino Plant Watering System Based on Soil Moisture Content and Temperature to Reduce Water Consumption on Peace Lily *Spathiphyllum* Plants While Collecting Ambient Temperature and Humidity

Colegio San Ignacio de Loyola

Science Teacher: Larua Rosado

Sponsored by the Puerto Rico Water Environment Association

Rhode Island

Alaina Zhang

The Application of Sugar Kelp as a Sustainable and Economic Biofilter for Wastewater

Portsmouth Abbey School

Science Teacher: Susan McCarthy

Sponsored by the New England Water Environment Association

South Carolina

Lucas Wyatt

A Comparison of the Effects of Benzalkonium Chloride and
Cetrimonium Bromide on *Daphnia magna*

Spring Valley High School

Science Teacher: Michelle Wyatt

Sponsored by the Water Environment Association of South Carolina

South Dakota

No Qualifying Entries.

Tennessee

Derek Diaz & Benji Cho

Efficacy of Natural Coagulants in Reducing Water Turbidity Under Future Climate Change Scenarios

Farragut High School

Science Teacher: Matthew Milligan

Sponsored by the Clean Water Professionals of Kentucky & Tennessee

Texas

Victoria Ou & Justin Huang

Acoustic Filtration: Harnessing Ultrasonic Technology for the
Streamlined Removal of Microplastic Particles from Water Flow

The Academy of Science & Technology

Science Teacher: Larissa Coffee

Sponsored by the Water Environment Association of Texas

Utah

Krishnam Goel

Redefining the Paradigm of Toxic Algal Blooms under Nutrient-Limited Conditions:

A Breakthrough in Cyanobacterial Genomics

West High School

Science Teacher: Hilary Thirlwell

Sponsored by the Water Environment Association of Utah

Vermont

No Qualifying Entries

Virginia

Andrew Kim & Jamie Kim

Utilizing Remote Sensing and Deep Neural Networks to Predict BOD in the Chesapeake Bay

W. T. Woodson High School

Science Teacher: Eric Sorenson

Sponsored by the Virginia Water Environment Association

Washington

Aashrita Bhamidimarri

Controlling Agricultural Pollution: 'Root' for Success

Hanford High School

Science Teacher: Brian Palmer

Sponsored by the Pacific Northwest Clean Water Association

West Virginia

No Qualifying Entries

Wisconsin
Nathan Steinbach

PureFlowAI: Leveraging a Deep Learning-Enabled Predictive Algorithm and the Analytical Hierarchy

Process to Optimize Water Facility Functionality

University School of Milwaukee

Science Teacher: Greg Marks

Sponsored by the Central States Water Environment Association

Wyoming

Caroline Boyer

Providing an Effective Mechanism for the Control of PFAS Contamination in Water Supplies Through the Application
of Engineered Bentonite/Zeolite Matrices

Greybull High School

Science Teacher: Joel Kuper

Sponsored by the Rocky Mountain Water Environment Association