



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

To Be Announced by May 9, 2022

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 Quality
Greybull High School
Science Teacher: Joel Kuper
Sponsored by the Rocky Mountain Water Environment Association