United States 2020 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 20th, 2020

Alabama
Shemai'ya Peak
Microalgae and Bioremediation: Experimenting with Chlamydomonas Reinhardtii
Stanhope Elmore High School
Teacher – Howard Babin
Sponsored by the Alabama Water Environment Association

Alaska
No Qualifying Entries
Sponsored by the Alaska Water Wastewater Management Association

Arizona
Mia Franks
Microfossils and Monsoons: What is Their Relationship Across the Deglaciation?
University High School
Science Teacher – Pamela Tautz
Sponsored by the AZ Water

Arkansas
Minola Lee and Emily Smith
Identification of Algae, Ostracods, and Zooplankton in Hot Springs National Park
Arkansas School for Mathematics, Sciences, and the Arts
Science Teacher – Lindsey Waddell
Sponsored by the Arkansas Water Environment Association

California
Emily Tianshi
Biomimicking Torrey Pine Needles: Atmospheric Moisture Harvesting Device Through Alternating Hydrophilic And
Hydrophobic Micro-Patterns
The Cambridge School
Science Teacher – Melissa Mayne
Sponsored by the California Water Environment Association

Colorado
Emmalie Byrne
Water, Magnets, & Microplastics
Colorado Virtual Academy
Science Teacher – Elaine Riegel
Sponsored by the Rocky Mountain Water Environment Association

Connecticut
Colin Speaker
Enhancement of the Efficiency of Solar Water Disinfection (SODIS) Systems
Using Riboflavin as a Photocatalyst
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
Mia Reynolds
Thermoelectric Power Generator
Georgetown Visitation Preparatory School
Science Teacher - Quillian Harolson
Sponsored by the Chesapeake Water Environment Association

Florida
Kevin Avaiya
Development of a Water-Stable Metal-Organic Framework/Thiol-Functionalized Polymer Composite for Selectivity and
Rapid Removal of Arsenic in Water
Strawberry Crest High School
Science Teacher – Christina Rutledge
Sponsored by the Florida Water Environment Association

Georgia
Sweta Munagapati
A Novel Design for the Removal of Lead from Water
South Forsyth High School

Science Teacher – Melissa Smith
Sponsored by the Georgia Association of Water Professionals

Hawaii
Kailash Letman and Bill Lin
The Effect of Arthrospira platensis and Chlorella vulgaris
in the Moving-Bed Biofilm Reactor Method
Kaua'i High School
Science Teacher – Kevin Johnson
Sponsored by the Hawaii Water Environment Association

Idaho
Brooke Arnold
Testing Cyanobacteria in Different Freshwater System Conditions
The Ambrose School
Science Teacher – Kenneth Hosier
Sponsored by the Pacific Northwest Clean Water Association

Illinois
Meha Krishnareddigari and Riya Khandelwal
The effect of microplastics on Tisbe Biminiensis copepods
Adlai E. Stevenson High School
Science Teacher – Christina Palffy
Sponsored by the Illinois Water Environment Association

Indiana
Jaytee Wesolowski
Catalytic Hydrogel Membrane Beads for the Removal of Nitrite in Water
Marian High School
Science Teacher – Ken Andrzejewski
Sponsored by the Indiana Water Environment Association

Iowa
Mya Batten
The Bioremediation of Polluted Environments with the Application of
Azolla vs. Lemna minor: Phase ll
Van Buren CSD High School
Sponsor Teacher – Amanda Schiller
Sponsored by the Iowa Water Environment Association

Kansas
No Qualifying Entires
Sponsored by the Kansas Water Environment Association

Kentucky
Shreyas Kar
Using a Machine Learning Algorithm and an IoT Enabled Sensor to
Predict Water Usage and Conserve Water
duPont Manual High School
Science Teacher – Keri Polevchak
Sponsored by the Clean Water Professionals of Kentucky and Tennessee

Louisiana
Diya Desai
The Efficacy of Graphene Oxide Coated Sand in the Filtration of Major Heavy Metal Contaminants to Solve the Global
Water Crisis
Caddo Parish Magnet High School
Science Teacher – Kris Clements
Sponsored by the Louisiana Water Environment Association

Maine
Amarachukwu Ifeji
Testing the Effectiveness of Mycorrhizae in the Phytoremediation of
Heavy Metals from Stormwater
Bangor High School
Science Teacher – Barbara Stewart
Sponsored by the New England Water Environment Association

Maryland
Nicholas Pham
Identification and Quantification of Toxic Unsaturated C4-Dicarbonyl Ring Cleavage Products from the Chlorination of
Varying Phenolic Compounds
Baltimore Polytechnic Institute
Science Teacher – Nicole Rosen
Sponsored by the Chesapeake Water Environment Association

Massachusetts
No Qualifying Entries
Sponsored by the New England Water Environment Association

Michigan
Catherine August and Olivia Hagan
Comparing the Effectiveness of Ferromagnetism and a Hydrophobic Net for Oil Spill Remediation
Macomb Mathematics Science Technology Center
Science Teacher – Jamie Hilliard
Sponsored by the Michigan Water Environment Association

Minnesota
Abirami Rajasekaran and Harini Senthilkumar
A computational analysis of the Effects of Dreissena polymorpha
on the ecological integrity of Minnesota lakes
Eden Prairie High School
Science Teacher – Carol Snyder
Sponsored by the Central States Water Environment Association

Mississippi
Jessica Yan
Lignin Foam: A Sustainable Biosorbent for Removal of Heavy Metals and Spilled Oil from Polluted Water
Starkville High School
Science Teacher – Katelynn Foster
Sponsored by the Mississippi Water Environment Association

Missouri
Emma Price
Synthesis of Human Urine Into Carbon Dots for
Implementation as a Visual Arsenic Assay in Water
Camdenton High School
Science Teacher – Christopher Reeves
Sponsored by the Missouri Water Environment Association

Montana
Lucas Ritzdorf
A Stochastic Computational Model for
Dreissenid Mussel Invasion Risk in Montana's Waterways
Glacier High School
Science Teacher – Janet Espeseth
Sponsored by the Montana Water Environment Association

Nebraska
Kaitlyn Engel
A Case Study of the Platte: The Effect of Tributaries on a River's Water Quality
Omaha Central High School
Science Teacher – Tracy Rumbagh
Sponsored by the Nebraska Water Environment Association

Nevada
No Qualifying Entries
Sponsored by the Nevada Water Environment Association

New Hampshire
Shreya Nagri
Minimizing Microplastics: Using Biofilms to Degrade
Microplastic Contamination in Water
Nashua High School South
Teacher – Divya Nagri
Sponsored by the New England Water Environment Association

New Jersey
Sonja Michaluk
Optimizing Taxonomic Identification of Chironomidae (Diptera) for A Novel Method of Monitoring Our Global Fresh
Water Supply Using DNA Barcoding
Hopewell Valley Central High School
Science Teacher – Karen Lucci
Sponsored by the New Jersey Water Environment Association

New Mexico
Ryan Helmer
Engineering a Desiccant-Driven (CaCl2) Self-Contained Solar Distillation System to Collect Drinking Water from the
Atmosphere
Jefferson Montessori Academy
Science Teacher – Kerrie Thatcher
Sponsored by the Rocky Mountain Water Environment Association

New York
Josh De Leeuw and Ethan Horowitz
A Comparison of Photocatalysis and Electrocoagulation for Azo Dye Treatment and a Novel Use of H2 PEM Fuel Cells for
Simultaneous Renewable Energy Generation
Manhasset High School
Science Teacher – Alison Huenger
Sponsored by the New York Water Environment Association

North Carolina
Ramkishore Annachi
Photocatalytic Semiconductive Metal Oxides in Chitosan Membranes for
Photodegradation of Toxic Dyes
North Carolina School of Science and Mathematics
Science Teacher – Michael Bruno
Sponsored by the North Carolina Water Environment Association

North Dakota
Kaylee Kemp
Say It Ain't Snow - An Investigation of Acid Deposition in Snow
Cavalier Public School
Science Teacher – Deanna Grandalen
Sponsored by the North Dakota Water Environment Association

Ohio
Laalitya Acharya
Nereid: Using a Convolutional Neural Network (CNN) Approach, an AI Technique, to Rapidly and Accurately Detect
Bacteria That Might Cause Water-Borne Diseases
William Mason High School
Science Teacher – Karen Young
Sponsored by the Ohio Water Environment Association

Oklahoma
Luke Wilson
The Addition of a Calcium Carbonate Buffer System to an UltraViolet Light Stressed Model Aquatic Ecosystem and its
Effects on the Overall Quality of Ocean Water
Cascia Hall
Science Teacher – Sally Fenska
Sponsored by the Oklahoma Water Environment Association

Oregon
Lila Schweinfurth
Predicting Harmful Algal Blooms to Mitigate Marine Neurotoxin Exposure
Using 20 Years of Shellfish and MODIS Satellite Data
Oregon Episcopal School
Science Teacher – Peter Langley
Sponsored by the Pacific Northwest Clean Water Association

Pennsylvania
Lillian Miller
Effects of Plastic Leachates on Various Organisms
Perkiomen Valley High School

Science Teacher – Mary Cutillo
Sponsored by the Pennsylvania Water Environment Association

Puerto Rico
Gabriel Silva
Evaluation of Trihalomethane Levels in Puerto Rico Aqueduct Systems
CIMATEC
Science Teacher – Shirley Martinez
Sponsored by the Puerto Rico Water & Environment Association

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

South Carolina
Ishraq Haque
An Inexpensive Water Filtration System for Removing Arsenic from Tube Well Water and Improving Health in Rural
Populations
Academic Magnet High School
Science Teacher – Katharine Metzner-Roop
Sponsored by the Water Environment Association of South Carolina

South Dakota
No Qualifying Entries
Sponsored by the South Dakota Water Environment Association

Tennessee
Devon Campbell
Electrochemical Evaluation of Novel Nanoscale Materials for Water Desalination
Harpeth Hall School
Science Teacher – Valerie Guenst
Sponsored by the Clean Water Professionals of Kentucky and Tennessee

Texas
Daniel Yakamov
Regulating Greenhouse Gas Emissions from Constructed Wetland Models: Towards Balancing Influent Sequestration and
GHG Emissions in Constructed Wetlands For Sustainable Onsite Water Treatment and Development
The Academy of Science and Technology
Science Teacher – Larissa Coffee
Sponsored by the Water Environment Association of Texas

Utah
Warren Ellsworth
Addressing Water Mismanagement in Reservoirs Through Futuristic Modeling of Water Supply for Optimization of Long-
Term Total Storage
Hillscrest High School
Science Teacher – Bethany Oldroyd
Sponsored by the Water Environment Association of Utah

Vermont
No Qualifying Entires
Sponsored by the New England Water Environment Association

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

Virginia
Hannah Namkoong
Removal of Pb Heavy Metal from Water Using Edible Marine Algae (Undaria pinnatifida)
Tabb High School
Science Teacher – Theresa Hux
Sponsored by the Virginia Water Environment Association

Washington
Zoe Gotthold
P.E.N.G.U.I.N.S: Promoting Emulsion Nullification Greenly Using Innovation Nucleation Surfaces
Richland High School
Science Teacher – Dale Ingram
Sponsored by the Pacific Northwest Clean Water Association

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

Wisconsin
Beatrice Youd
Septic System Caused Phosphate Loading Prevention Analysis Via Biodegradable Filters
F. J. Turner High School
Science Teacher – Kelsey Bysetd
Sponsored by the Central States Water Environment Association

Wyoming
Janelle Grant
How the Ash Falls
East High School
Science Teacher – Kelli Pederson
Sponsored by the Rocky Mountain Water Environment Association