

United States 2018 Stockholm Junior Water Prize

State Winners

The following state Winner have advanced to the U.S. Stockholm Junior Water Prize national competition, June 15-17, 2018 at the University of North Carolina at Charlotte

Alabama

Noel Lange

Development of an Innovative Strategy to Protect
the Aquatic Environment from Household Plastic Microfibers
Teacher – Jacque Middleton
Sponsored by the Alabama Water Environment Association

Alaska

Helen Laird

A comparison of nearshore marine microplastic
and shore plastic levels in the Aleutian Islands
Interior Distance Education of Alaska
Science Teacher – Katherine Laird
Sponsored by the Alaska Water Wastewater Management Association

Arizona

Ryan Widjaja, Lindsay Chen, and Gabriel Wang

Reducing Brine Waste in Reverse Osmosis (RO) Systems with Distillation
Hamilton High School
Science Teacher – Sara Loutzenheiser
Sponsored by the AZ Water

Arkansas

Dhruv Modi

Water-Oil Separation via PVDF
Superhydrophobic/Superoleophilic Membranes
Little Rock Central High School
Science Teacher – Patrick Foley
Sponsored by the Arkansas Water Environment Association

California

Visala Tallavarjula

Irrigation Water Usage Efficiency Improvement by Modification
of Root Zone Soil Properties Using Carbon Sequestration
Adrian Wilcox High School
Science Teacher – Naleeni Srinivasan
Sponsored by the California Water Environment Association

Colorado

Isla Anderson

Anthropogenic Induction of Antibiotic

Resistance by Sulfamethoxazole

North High School

Science Teacher – Munira Lantz & Melissa Brace

Sponsored by the Rocky Mountain Water Environment Association

Connecticut

Verna Yin

Filtration of Heavy Metals from Drinking Water with Used
Coffee Grounds Embedded in Discarded Polyurethane Sponges

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

Rohan Jakhete

Electro-Oxidation of ethinylestradiol: A Novel Model for Removing
Endocrine-Disrupting Compounds from Wastewater Effluent

South Fork High School

Science Teacher – David Hill

Sponsored by the Florida Water Environment Association

Georgia

Jessica Mitchell

A Macro Micro Problem: Analyzing Microplastic
Concentrations of the Chattahoochee River

South Forsyth High School

Science Teacher – Melissa Smith

Sponsored by the Georgia Association of Water Professionals

Hawaii

Evelyn Haase

Developing a pH Sensor to Monitor Ocean Acidification: Year 3

Molokai High School

Science Teacher – Robert Shizuma

Sponsored by the Hawaii Water Environment Association

Idaho

Alexander Howard

Investigating the Water Filtration Capabilities
of Carbon-Coated Oyster Shells

Timberline High School

Science Teacher – Annie Schmidt

Sponsored by the Pacific Northwest Clean Water Association

Illinois

Robert Szymczyk

The Effects of Water Pollution on Mosquitoes

Lane Tech College Prep High School

Science Teacher – Lucy Young

Sponsored by the Illinois Water Environment Association

Indiana

Victor Karwacinski and Mary Sgroi

Non-Thermal, Atmospheric Plasma: A Means of Water Purification

Trinity School at Greenlawn

Science Teacher – Lynda Seasley

Sponsored by the Indiana Water Environment Association

Iowa

Pearl Krieger-Coble

Analysis of Carbonic Acid impact

on *Neurina natalensis* and *Daphnia magna*

Winfield-Mt. Union Community School District

Sponsor Teacher – William Hansen

Sponsored by the Iowa Water Environment Association

Kansas

Paige Claassen and Deserae Schwindt

Forage Quality Analysis for Sandhills Wetland Site

Rolla High School

Science Teacher – Zeta Greene

Sponsored by the Kansas Water Environment Association

Kentucky

Anjali Chadha

Development of a Fully Automated 3D Printed

IoT Sensor for Arsenic Detection in Groundwater

duPont Manual High School

Science Teacher – Glenn Zwanzig

Sponsored by the Kentucky-Tennessee Water Environment Association

Louisiana

Sofia Stuart

The Effect of Different Levels of Current

during Membrane Capacitive Deionization

on the Concentration of Ions in Water

St. Joseph's Academy

Science Teacher – Jacqueline Savoia

Sponsored by the Louisiana Water Environment Association

Maine

Mei Tian

Use of Cellulose-Based Materials

Infused with Layered Double Hydroxides

to Remediate Phosphorus from Stormwater

Bangor High School

Science Teacher - Cary James

Sponsored by the New England Water Environment Association

Maryland
Claire Wayner

Effects of Inhibitory Bacterial Biofilms on Escherichia coli
Contamination Levels in Engineered Infiltration Systems
Baltimore Polytechnic Institute
Science Teacher – Lisa Fridman
Sponsored by the Chesapeake Water Environment Association

Massachusetts
Elise Mizerak

What's In Your Water?
Using Variable Water Temperature as a
Method of Limiting Synthetic Fabric Microfibers
Wachusett Regional High School
Science Teacher – Nicholas Guerin
Sponsored by the New England Water Environment Association

Michigan
Neha Narayan

Activated Carbon Water Filtration - Using Household Articles
and Study of its Effectiveness in Removing Pollutants
Salem High School
Science Teacher – Joan Pence
Sponsored by the Michigan Water Environment Association

Minnesota
Avni Jain

Wastewater Treatment: Utilizing Hydroponics to Develop
a Novel and Sustainable Solution to Nutrient Pollution
Eden Prairie High School
Science Teacher – Kristin Gabel
Sponsored by the Central States Water Environment Association

Mississippi
Helen Peng

Optimal Photo-reactors for the Improvement of Solar Water
Disinfection with the Advanced Oxidation Process
Mississippi School of Math and Science
Science Teacher – Dr. Tina Gibson
Sponsored by the Mississippi Water Environment Association

Missouri
Lucas Mosher

Exploring the Potential of a Modified Stun Gun as a Sterilization
Technique for Drinking Water in Disaster Areas Through the Use of Pulsed
Electric Field (PEF) Technology by the Degradation of Cellular Membranes
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: Year 2
Glacier High School

Science Teacher – Mark Drew

Sponsored by the Montana Water Environment Association

Nebraska

Madeline Kane

The Effect of Blue and Yellow Light on Crustose
Coralline Algae (Lithothamnion spp.)
Zoo Academy

Science Teacher – Amy Leising

Sponsored by the Nebraska Water Environment Association

Nevada

Yatin Chandar

Development of Highly Efficient Low-Cost Filter for
Effective Dissolved Heavy Metal and Organic Contaminant Removal
The Davidson Academy

Science Teacher – Martin Braik

Sponsored by the Nevada Water Environment Association

New Hampshire

Meghana Avvaru

An Economical Approach for Detecting Water Contamination
At Homes - Preventing a Public Drinking Water Crisis
Nashua High School South

Teacher – Stephen Minnigh

Sponsored by the New England Water Environment Association

New Jersey

Harshal Agrawal

Using Stropharia Mushroom Mycelium (*S. rugosoannulata*)
and Waste Treatment Residual for Filtration of Nitrate/Total
Dissolved Nitrogen and Phosphate from Agricultural Runoff
to Prevent Harmful Algae Blooms - Year 4

Dr. Ronald E. McNair Academic High School

Science Teacher – Jeremy Stanton

Sponsored by the New Jersey Water Environment Association

New Mexico

Riley Jakino

Water Decontamination Using Plants
Piedra Vista

Science Teacher – Gail Silva

Sponsored by the Rocky Mountain Water Environment Association

New York

Michelle Xing

Direct Functionalization of Algal Nanocellulose
to Enhance Biosorption for Lead(II) Remediation

Great Neck South High School

Science Teacher – James Truglio

Sponsored by the New York Water Environment Association

North Carolina

Aakriti Lakshmanan

A Study on the Coagulating Properties of the M. OLEIFERA Seed

Ardrey Kell High School

Science Teacher – Matthew Welch

Sponsored by the North Carolina Water Environment Association

North Dakota

Lauren Knoll

There is No Planet B: Aquaponics, Farming of the Future

Park Christian School

Science Teacher – Nancy Schnabel

Sponsored by the North Dakota Water Environment Association

Ohio

No Qualifying Entries

Sponsored by the Ohio Water Environment Association

Oklahoma

Braden Milford

“Designing a Novel Heavy Metal Bioremediation System Utilizing
Immobilized Mixed Algae Partnered with Heavy Metal Resistant Microbial
Isolates Collected from Contaminated Superfund Mine Sites and Identified
with a 16S Ribosomal Subunit Analysis”

Cascia Hall Preparatory School

Science Teacher – Sally Fenska

Sponsored by the Oklahoma Water Environment Association

Oregon

Cheney Sung

Effects of Polyester and Cotton Microfibers on the
Growth and Luminous Intensity of *Pyrocystis* sp.

Oregon Episcopal School

Science Teacher – Peter Langley

Sponsored by the Pacific Northwest Clean Water Association

Pennsylvania

William Chen

Evaluation of Two Methods for Remediating
Antibiotic Water Pollutants Methacton

High School

Science Teacher – Robert Helm

Sponsored by the Pennsylvania Water Environment Association

Puerto Rico

Bianca Rodriguez Castro

Preventing the drought from turning into world hunger

CROEC

Science Teacher – Wilmayris Alvira

Sponsored by the Puerto Rico Water & Environment Association

Rhode Island

Margaret O'Brien

Waddle We Do Without Duckweed? Phytoremediation
of Heavy Metals in Water Using Aquatic Macrophytes

Mt. Hope High School

Science Teacher – Christopher Munzert

Sponsored by the New England Water Environment Association

South Carolina

Vignesh Rajmohan

The Effectiveness of the Use of Moringa oleifera Seeds in the
Removal of Metal Based Contaminants from Contaminated Water

J. L. Mann High School

Science Teacher – Anna Hanor

Sponsored by the Water Environment Association of South Carolina

South Dakota

Margaret Fouberg and Branden Orr

Utilizing Varying Molarities of Ammonium Nitrate to
Analyze Daphnia magna Survival Rates in Polluted Water

Aberdeen Central High School

Science Teacher – Charles Hermansen

Sponsored by the South Dakota Water Environment Association

Tennessee

Noah Walker and Makayla Wilson

The Effect of Salt Brines with Various
Concentrations on Chlorella Microalgae

Heritage High School

Science Teacher – Chelsie Sells

Sponsored by the Kentucky-Tennessee Water Environment Association

Texas

Richard Zhang and Steven Wu

Application of Novel Engineered Materials for Phosphorus
Removal in Controlling Algae Bloom in Eutrophic Water

Clear Lake High School

Science Teacher – Lauren Cooper

Sponsored by the Water Environment Association of Texas

Utah

Jessica Pratt

Lead Isotope Correlation to Point Source
Contamination in American Fork Reservoir

Maple Mountain High School

Science Teacher – Brittany Rogers

Sponsored by the Water Environment Association of Utah

Vermont

Sunthoshini Premsankar

Neutralization of Pharmaceutical Pollution in Lake Champlain
Champlain Valley Union High School
Science Teacher – Sarah Strack
Sponsored by the New England Water Environment Association

Virgin Islands

No Qualifying Entries

Sponsored by the Seven Seas Water Corporation

Virginia

Kartik Chugh and Palash Shah

Impurivision: A High Performance Mobile Application
for Identifying Water Contamination using Deep Learning
Westfield High School
Science Teacher – Mary Constantino
Sponsored by the Virginia Water Environment Association

Washington

Sagarika Samavedi

Analyzing the Effects of Anthropogenic Pollution on the
Net Primary Productivity of Oceanic Phytoplankton using
Satellite Data and In Vitro Experimentation
Interlake High School
Science Teacher – Philip Allender
Sponsored by the Pacific Northwest Clean Water Association

West Virginia

No Qualifying Entries

Sponsored by the West Virginia Water Environment Association

Wisconsin

Abigail Warwick and Hunter Bindas

Development of a Grass Variety as a way to
Remove Nitrogen from Water Environments
Muskego High School
Science Teacher – Karen Lindholm-Rynkiewicz
Sponsored by the Central States Water Environment Association

Wyoming

Kendrew Ellis

Snow Pollution Effects on Water Quality
in Medicine Bow National Forest, Wyoming
East High School
Science Teacher – Kelli Pederson
Sponsored by the Rocky Mountain Water Environment Association