United States 2016 Stockholm Junior Water Prize

State Winners

**Alabama**  
Megan Lange  
Removal of BTEX from Storm Water Using Nanoparticle Enhanced Reactive Porous Concrete: Field Testing and Modeling  
Auburn High School  
Teacher – Mark Jones  
Sponsored by the Alabama Water Environment Association

**Alaska**  
Laurinne Balstad  
Variability in Zooplankton Quality Across Large Marine Ecosystems in the North Pacific  
Juneau Douglas High School  
Science Teacher – Johnathan Smith  
Sponsored by the Alaska Water Wastewater Management Association

**Arizona**  
Sara Jones  
The Effect of Different Species of Bog Plant on the Reduction of Nitrogen in Dary Wastewater  
Perry High School  
Teacher – Karen Hutchinson  
Sponsored by the AZ Water

**Arkansas**  
Madeline Burke  
Analysis of Trace Organic Leaching from Plastic Containers Exposed to the Thermal Water at Hot Springs National Park, AR  
ASMSA  
Science Teacher – Lindsey Waddell  
Sponsored by the Arkansas Water Environment Association

**California**  
Visala Tallavarjula  
Methods Based on Statistical Analysis to Improve Water Retention in Sub-surface Irrigation  
Wilcox High School  
Science Teacher – Mary Slate  
Sponsored by the California Water Environment Association

**Colorado**  
Michelle Kummel  
Modeling Transport in Creeks by Approximating Partial Differential Equations  
Palmer High School  
Science Teacher – Reed Carlson  
Sponsored by the Rocky Mountain Water Environment Association
Connecticut
Lauren Pawlowski and Courtney Litts
Clean the Seas: The Effect of Pollutants on Aquatic Life
Shelton High School
Science Teacher – Lucia Dunham
Sponsored by the New England Water Environment Association

Delaware
No Entries
Sponsored by the Chesapeake Water Environment Association

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

Florida
Stefan Wan
Functionalizing Biochar with Layered Double Hydroxides for Phosphate Removal from Aqueous Solutions
A.W. Dreyfoos School of the Arts
Science Teacher – Michael Rathe
Sponsored by the Florida Water Environment Association

Georgia
Jeramie Paz
The Use of Biochar to Remove Stormwater Contaminants
Griffin High School
Science Teacher – Lisa Henderson
Sponsored by the Georgia Association of Water Professionals

Hawaii
Ariana Kim and Sreelakshmi Kutty
Novel Utilizations of Globally Invasive Algal Species: Environmental and Economical Implementations of Fermented Macroalgae
St. Andrews Priory
Science Teacher – Ai Hirasuna
Sponsored by the Hawaii Water Environment Association

Illinois
Irein Thomas
Investigating the Effect of Water Contaminant Microbeads on Health of Aquatic Organisms
Niles West High School
Science Teacher – Julieann Villa
Sponsored by the Illinois Water Environment Association

Indiana
Nirupama Devanathan
An Analysis of the Impact of Chlorophyll Levels on the Condition of Crooked Lake in Whitley and Noble Counties, Indiana: Have Remedial Strategies Worked?
Homestead High School
Science Teacher – Matt Elder
Sponsored by the Indiana Water Environment Association
Iowa
Maggie Walker
Sodium Polyacrylate and Dioxin Used for Nitrate Runoff Prevention
Holy Trinity Catholic High School
Science Teacher – Gail Kunch
Sponsored by the Iowa Water Environment Association

Kansas
No Entries
Sponsored by the Kansas Water Environment Association

Kentucky
Derris Stanland
Peel Power Continued: The Effectiveness of Twelve Bio-Adsorbents At Extracting Nine Toxic Elements from Contaminated Water
Lexington Christian Academy
Science Teacher – Kenna Jasper
Sponsored by the Kentucky-Tennessee Water Environment Association

Louisiana
Joshua Courtney
Condition Factors of Fish and Chlorophyll a Concentrations as Bioindicators of Oyster Abundance and Ecosystem Services: A Five Year Study
Carmel Hill School
Science Teacher – Michael Courtney
Sponsored by the Louisiana Water Environment Association

Maine
Paige Brown
Constructing Low Cost Calcium Alginate Based Scaffolds for Pollutant Reduction
Bangor High School
Science Teacher - Cary James
Sponsored by the New England Water Environment Association

Maryland
Zainab Hayat
Development of a Water Filtration Method Using Inexpensive and Recycled Materials
Elkton High School
Science Teacher – Wendy Pasmore
Sponsored by the Chesapeake Water Environment Association

Massachusetts
Lillian Cane
Washing with Fertilizer; Engineering Greywater for Reuse in Hydroponic Systems
Massachusetts Academy of Math and Science
Science Teacher – Maria Borowski
Sponsored by the New England Water Environment Association
Michigan
Nathaniel Haut, William Hackbarth, and Matthew Schafer
Spider Sensor System
Midland High School
Science Teacher – Bob Fox
Sponsored by the Michigan Water Environment Association

Minnesota
Jacob Schmidt and Levi Petersen
“A Nice Fracking Solution:” The Effect of Fracking Water Salts vs. Road Salts on the Growth of Lumbriculus variegatus
Cloquet Senior High School
Science Teacher – Cynthia Welsh
Sponsored by the Central States Water Environment Association

Mississippi
Sichen Shawn Chao
Numerical Modeling of Algae Concentration in a Well-Mixed Lake
Oxford High School
Science Teacher – Sarah Robinson
Sponsored by the Mississippi Water Environment Association

Missouri
Dustin Bax
Remediation Matters - Year Two: Engineering Remediation Mats for Copper Pollution in Aquatic Environments
Tuscumbia High School
Science Teacher – Constance Wyrick
Sponsored by the Missouri Water Environment Association

Montana
Brenna DeMarois
Use of Vetiver to Remove Tetracycline and Estrogen from Water
Sentinel High School
Science Teacher – Lindsay Manzo
Sponsored by the Montana Water Environment Association

Nebraska
Marcella Jurotich
The Use of Graph Theory to Determine the Effect of Loss of Taxonomic Diversity on Trophic Function
Wayne Junior Senior High School
Science Teacher – Lee Brogie
Sponsored by the Nebraska Water Environment Association

Nevada
Holly Darlene Merrill
Copper: The Biocide to Marine Lifeforms
Earl Wooster High School
Science Teacher – Holly Merrill
Sponsored by the Nevada Water Environment Association
New Hampshire
Mary Zhu
Food for Thought: A Novel Computational Approach to Modeling the Impacts of School Nutrition Policies on the Blue Water Footprint
Nashua High School South
Teacher – Neil Claffey
Sponsored by the New England Water Environment Association

New Jersey
Nishita Sinha
Experimental Studies in Developing Safe Sanitation Solutions
Chatham High School
Science Teacher – Yelena Naumova
Sponsored by the New Jersey Water Environment Association

New Mexico
Akshay Jain
Solving the Water Crisis: A Novel Method of Environmentally Safe Desalination of Seawater-Phase II
La Cueva High School
Science Teacher – Lena Eddings
Sponsored by the Rocky Mountain Water Environment Association

New York
Jaehyup Song
Humidity-based Solar Water Generation
St. Mary’s High School
Science Teacher – Ann Tomlinson
Sponsored by the New York Water Environment Association

North Carolina
Joshua Zhou
Low-Cost Heteronanostructure Semiconductor Uses Energy in Visible Light to Efficiently Degrade Toxins Threatening Aquatic Life
North Carolina School of Science and Mathematics
Science Teacher – Myra Halpin
Sponsored by the North Carolina Water Environment Association

North Dakota
Branden Skjoiten
A Chemical and Plant Analysis of Lake Elsie
Hankinson Public School
Science Teacher – Patty Kratcha
Sponsored by the North Dakota Water Environment Association
Ohio
Travis O’Leary
Liquid Nitrogen’s Effect On Oil Spills
Carroll High School
Science Teacher – Laura Wright
Sponsored by the Ohio Water Environment Association

Oklahoma
Lexi Hill
Municipal Wastewater Effluent Has Sublethal Effects on Freshwater Snails (Helisoma trivolvus)
Deer Creek High School
Science Teacher – Kaytlyn Goodwin
Sponsored by the Oklahoma Water Environment Association

Oregon
Jared Kerman and Sarah Hatcher
Designing a Multimetric Approach to Assess Water Quality in the Pacific Northwest Using Epilithic Diatoms (Bacillariophyceae): Implications for Conservation, Stream Health, and Ecosystem Management
Northwest Academy
Science Teacher – Molly Sultany
Sponsored by the Pacific Northwest Clean Water Association

Pennsylvania
Amanda Plichta
Moringa Oleifera/SODIS A Novel Approach To Turbid Water Purification in Developing Countries
Council Rock High School
Science Teacher – Matthew Ciaudelli
Sponsored by the Pennsylvania Water Environment Association

Puerto Rico
Vincent Hwang
Pervious Concrete Pavement and Bamboo Bioretention Basin for Stormwater Runoff Volume Control and Water Quality Enhancement
Southwestern Educational Society (SESO)
Science Teacher – Evelyn Montalvo
Sponsored by the Puerto Rico Water & Environment Association

Rhode Island
Nicholas Berg
Investigating the Death of an Ecosystem
Bishop Hendricken High School
Science Teacher – Jeremy Graney
Sponsored by the New England Water Environment Association
South Carolina
Sarayu Das
The Effect of Tri-sprintec and Metformin and Their Doses on the Mortality and Reproduction of Ampullariidae, Daphnia Magna, and Lemnoideae & the Heart Rate of Daphnia Magna in Aquatic Ecosystems
Spring Valley High School
Science Teacher – Dale Soblo
Sponsored by the Water Environment Association of South Carolina

South Dakota
Hannah Reeves
Increasing Crop Production Through Efficient Irrigation Techniques
Avon High School
Science Teacher – Paul Kuhlman
Sponsored by the South Dakota Water Environment Association

Tennessee
Ayushi Sinha
The Effect of the Surface on Zebra Mussel Attachment
Girls Preparatory School
Science Teacher – Tracie Durham
Sponsored by the Kentucky-Tennessee Water Environment Association

Texas
Deemah Pulak
Development of an Affordable Tabletop Bio-Sand Water Filter Using Scrap Iron and Old Cloth
Richardson High School
Science Teacher – Amy Hammer
Sponsored by the Water Environment Association of Texas

Utah
Raymond Li
Removing Aqueous Phosphate Using Sand Adsorption Columns
Logan High School
Science Teacher – Elizabeth Wright
Sponsored by the Water Environment Association of Utah

Vermont
Josie Ford
Project Clean Water: The Effect of Ultraviolet Germicidal Irradiation on Bacteria in Lake Water
South Burlington High School
Science Teacher – Nathaniel Moore
Sponsored by the New England Water Environment Association

Virgin Islands
No Entries
Sponsored by the Seven Seas Water Corporation
Virginia
Ana Humphrey
ColiFind: A Digital Image Analysis Application to Identify E. coli Colonies in Coliscan Easygel Water Quality Tests
T.C. Williams High School
Science Teacher – Shawn Lowe
Sponsored by the Virginia Water Environment Association

Washington
Apoovr Khandelwal
Optimizing Water Permeability in Nanoporous Graphene for Reverse Osmosis Desalination
Tesla STEM High School
Science Teacher – Allender
Sponsored by the Pacific Northwest Clean Water Association

West Virginia
Brittany Kelley
Does Water Type Affect Plant Growth?
Spring Mills High School
Science Teacher – Jana Woofter
Sponsored by the West Virginia Water Environment Association

Wisconsin
Laurel Chen and Reilly Olinger
How Green is "Green"? Assessing Detergent Toxicity on the Environment
Brookfield Central High School
Science Teacher – Yaxi Shen
Sponsored by the Central States Water Environment Association

Wyoming
Shelby Schainost
Types of Water vs Bean Plant Growth
Southeast High School
Science Teacher – Robin Schainost
Sponsored by the Rocky Mountain Water Environment Association