

United States 2014 Stockholm Junior Water Prize

State Winners

Alabama

Megan Lange

Removal of BTEX from Storm Water using Nano-Particle Enhanced Reactive Porous Concrete

Auburn High School

Teacher – Mark Jones

Sponsored by the Alabama Water Environment Association

Alaska

Amber White

The Effects of Oil Contamination on Amphipod (Amphipoda)
and Isopod (Isopoda) Behavior

Thunder Mountain High School

Science Teacher – Topez Shryock

Sponsored by the Alaska Water Wastewater Management Association

Arizona

Katelyn Boisvert

Climate Change Threatens Marine Ecosystems- The Impact of Rising Sea Surface Temperature
and Altered Nutrient Availability on the Abundance and Growth Behavior

of the Phytoplankton Thalassiosira

Chandler Preparatory Academy

Science Teacher – Mark Wallington

Sponsored by the AZ Water

Arkansas

Cortland Mathis

Plain or Porous Phase III: A study of the effects of that regular paved parking
lot has on our water sources compared to the new porous paved parking lots

Alpena High School

Science Teacher – Mark Welch

Sponsored by the Arkansas Water Environment Association

California

Beatrice Choi

Electronic Tongue: Tastes of Toxic Metal Ions in Water

University High School

Science Teacher – Brenda Royce

Sponsored by the California Water Environment Association

Colorado

Hope Weinstein

Zero Valent Iron Nanoparticle Enhanced Polyethersulfone Membranes for Water Filtration:
Optimizing the Effects of Casting Parameters for Global Applications

Fairview High School

Science Teacher – Paul Strode

Sponsored by the Rocky Mountain Water Environment Association

Connecticut

Bridget Oei

Investigating the Efficacy of Bioluminescent Mushroom *Panellus Stipticus* as a Biosensor to
Detect the Toxicity of Water Contaminants
East Catholic High School
Science Teacher – Lesa Milas
Sponsored by the New England Water Environment Association

Delaware

Lucy Sullivan

Effects of Water Speed and Other Factors on pH Levels of Yosemite National Park Water
The Charter School of Wilmington
Science Teacher - Jennifer Toner
Sponsored by the Chesapeake Water Environment Association

District of Columbia

Diamond Thompson

Urban Scale Algae Turf Scrubber
Schools Without Walls
Science Teacher – Sydney Bergman
Sponsored by the Chesapeake Water Environment Association

Florida

Zachary Loeb

Preventing the Global Reproductive Failure of Aquatic Life through the Catalytic Treatment of
Endocrine Disrupting Compounds in Municipal Waste Water
Viera High School
Science Teacher – Elizabeth Youngs
Sponsored by the Florida Water Environment Association

Georgia

Malcolm Barnard

Utilization of *Spirogyra grevilleana* as a Method of Algal Filtration
for Reduction of Limnotic *Escherichia coli* Levels
Johns Creek High School
Science Teacher – Tim Maley
Sponsored by the Georgia Association of Water Professionals

Hawaii

Nalani Kaku

Analyzing Environmental Stresses on the Reef-Building Coral *Porites compressa*:
Resilience to Diel pH Levels
Kamehameha Schools Kapalama High School
Science Teacher – Gail Ishimoto
Sponsored by the Hawaii Water Environment Association

Illinois

Sruti Mohan

The Effect of Biochar on Water Filtration
Neuqua Valley
Science Teacher – Jacklyn Naughton
Sponsored by the Illinois Water Environment Association

Indiana
Aidan Reilly

An Evaluation on the Effect of Nutrient Supplementation on Hexane-Contaminated Lake Water
Using a Carbon Fiber Cloth Biofilm with Indigenous Bacteria
John Adams High School
Science Teacher – Nevin Longenecker
Sponsored by the Indiana Water Environment Association

Iowa
Kelsey Bryant

The Effectiveness of Moringa oleifera in Purification of Turbid Water Phase II
Central Lee High School
Science Teacher – Alicia Schiller
Sponsored by the Iowa Water Pollution Control Association

Kansas
No winner

Entries did not meet competition qualifications
Sponsored by the Kansas Water Environment Association

Kentucky
Ellen Kendall

Copper Removal by Alginate Beads
Notre Dame Academy
Science Teacher – Sr. Mary Ethel Parrott
Sponsored by the Kentucky-Tennessee Water Environment Association

Louisiana
Alexis Lang and Joshua Hartley

Go With The Flow....Can Freshwater Diversion Water Flow be Used to Create Green Energy?
John Curtis Christian
Science Teacher – Cathy Boucvalt
Sponsored by the Louisiana Water Environment Association

Maine
Mary Butler

Cellulose Nanofibers (CNF) as a Component of an Inexpensive and Sustainable Water Filtration
System
Bangor High School
Science Teacher - Cary James
Sponsored by the New England Water Environment Association

Maryland
Jack Andraka and Chloe Diggs

A Novel Microfluidic Biosensor for Environmental Contaminants
PLUS Development and Optimization of an Ultra-Inexpensive
Plastic Water Filter to Remediate Water Pollution Sustainably
North County High School
Science Teacher – Beth Kennedy
Sponsored by the Chesapeake Water Environment Association

Massachusetts

No winner

Entries did not meet competition qualifications

Sponsored by the New England Water Environment Association

Michigan

Anuush Vejalla

Arsenic Contamination in Rice through Water: Developing a Novel Testing

Method and Analyzing Arsenic Levels in Rice

Detroit Country Day Upper School

Science Teacher – John Dougherty

Sponsored by the Michigan Water Environment Association

Minnesota

Christine Neumann and Crystal Moynan

What effect does gender, tone, and sound location have on the response behavior

of *Neogobius melanostomus* (Round Goby) and the possibility of

future trapping of this invasive species in Lake Superior?

Cloquet Senior High School

Science Teacher – Cynthia Welsh

Sponsored by the Central States Water Environment Association

Mississippi

Elizabeth Moore

Possible human impact on degradation of surface water quality –

Novel bacterial analysis with ongoing chemical and macroinvertebrate

analyses of Weeks Bayou subwatershed.

Ocean Springs High School

Science Teacher – Bryan Butler

Sponsored by the Mississippi Water Environment Association

Missouri

Katie Chappell

Marine Reserves: A Photographic Survey to Determine the Efficacy of the Glovers Reef Atoll

Marine Reserve (Belize) on Coral Diversity and Abundance

Camdenton High School

Science Teacher – Chris Reeves

Sponsored by the Missouri Water Environment Association

Montana

Brenna DeMarois

Sea Shell Filter Used To Remove Caffeine from Wastewater

Sentinel High School

Science Teacher – Kate Dirksen

Sponsored by the Montana Water Environment Association

Nebraska

Brooke Pieke

The Effect of Lemnaceae on Overall Water Quality Part II:

The Loss of Nitrate Nitrogen through Decomposition

Newman Grove High School

Science Teacher – Danielle Amen

Sponsored by the Nebraska Water Environment Association

Nevada

Kelly Schmidt

Fruit Filters: Adsorption of Copper from Water Using Banana, Apple, and Orange Peels

Elko High School

Teacher – Paul Hughes

Sponsored by the Nevada Water Environment Association

New Hampshire

Deepika Kurup

A Novel Photocatalytic Pervious Composite for Degrading Organics
and Inactivating Bacteria in Wastewater

Nashua High School South

Teacher – Linda Polewarczyk

Sponsored by the New England Water Environment Association

New Jersey

Michelle Moffa

Fabrication and Modification of Cellulose Nanofibers
for Antifouling Water Purification Membranes

Holy Spirit High School

Science Teacher – Donna Ljoka

Sponsored by the New Jersey Water Environment Association

New Mexico

Hannah Harper

#WaterProbs

Rio Rancho High School

Science Teacher – Jennifer Miyashiro

Sponsored by the Rocky Mountain Water Environment Association

New York

Catherine Chung

Not a Drop to Drink: The Challenge of Building a Low-Cost Solar Still
to Supply Potable Water in Developing Countries

Yorktown High School

Science Teacher – Michael Blueglass

Sponsored by the New York Water Environment Association

North Carolina

Margaret Pan

Optimizing the Synthesis of Flat-Sheet Phase Inversion Polyvinylidene
Fluoride (PVDF) Membranes for Membrane Distillation

North Carolina School of Science and Mathematics

Science Teacher – Myra Halpin

Sponsored by the North Carolina Water Environment Association

North Dakota

Gage Metzen

The Natural Decontamination of Industrial and Agricultural Water

Hankinson Public School

Science Teacher – Patty Kratcha

Sponsored by the North Dakota Water Environment Association

Ohio

Bluyé DeMessie

Developing a Sustainable Water Cleaning System for use
in Rural Areas of Low Income Countries
William Mason High School
Science Teacher – George Sorial
Sponsored by the Ohio Water Environment Association

Oklahoma

Jeffrey Holleman

Evaluating Resistance to Triclosan in Selected Bacteria and Aquatic Samples
Isolated from Pre and Post Water Treatment Effluent
Cascia Hall Preparatory School
Science Teacher - Sally Fenska
Sponsored by the Oklahoma Water Environment Association

Oregon

Ajay Krishnan

From Waste to Electricity and Hydrogen Gas: A Novel Power Management Device
for Microbial Fuel Cell-Microbial Electrolysis Cell Coupled Systems
Oregon Episcopal School
Science Teacher – Catherine Molloseau
Sponsored by the Pacific Northwest Clean Water Association

Pennsylvania

Maya Rao

A Novel Method for Rapid Quantification of Coliform Bacteria using Nanotechnology
Hempfield High School
Science Teacher – Neal Kuhn
Sponsored by the Pennsylvania Water Environment Association

Puerto Rico

Alondra Concepcion

Comparison of the Effect of Aluminum, Cadmium, Lead, Nickel and Zinc
in the Development of Gallus gallus domesticus embryo
Colegio Marista
Science Teacher –Isabel Pérez
Sponsored by the Puerto Rico Water & Environment Association

Rhode Island

No winner

Entries did not meet competition qualifications

Sponsored by the New England Water Environment Association

South Carolina

Jedidiah Gist and Benjamin Fetcher

Wastewater sanitation and nutrient reintegration via superporous filtration
Spring Valley High School
Science Teacher – Michelle Spigner
Sponsored by the Water Environment Association of South Carolina

South Dakota
Madison Hahler

Survey of Nitrates Effect on Freshwater Samples Phase 2
Northwestern
Science Teacher – Denise Clemens
Sponsored by the South Dakota Water Environment Association

Tennessee

Ayushi Sinha
Zebra Mussels
Girls Preparatory School
Science Teacher – Sonya Steele
Sponsored by the Kentucky-Tennessee Water Environment Association

Texas

Kushal Kadakia

Heavy Metal Removal Using Fe₃O₄ Nanoparticles III
Clear Lake High School
Science Teacher – Deborah Borrmann
Sponsored by the Water Environment Association of Texas

Utah

Bovey Rao

Investigation of Different Degradation Treatments on Pesticide Contaminated
Water with Toxicity Bioassay on Daphnia magna
Hillcrest High School
Science Teacher – Jami Smith
Sponsored by the Water Environment Association of Utah

Vermont

Nevil Desai

Bioremediation: Using Strains of Pseudomonas on Oil Spills
South Burlington High School
Science Teacher - Curtis Belton
Sponsored by the New England Water Environment Association

Virgin Islands

Selesha Subniak

Mitigating an Oil Spill
The Good Hope School
Science Teacher – Jane Coles
Sponsored by the Virgin Island Water and Power Authority

Virginia

Valentina Lohr

Testing the Scientific Basis for Phosphate Fertilizer Regulation in Estuarine Watersheds
Jefferson High School for Science and Technology
Science Teacher – Barbara Wood
Sponsored by the Virginia Water Environment Association

Washington

Meera Srinivasan

Investigating the Sublethal Effects of Polycyclic Aromatic
Hydrocarbons (PAHs) on Salmon Using Zebrafish as a Model Organism

Interlake High School

Science Teacher – Tia Thiel

Sponsored by the Pacific Northwest Clean Water Association

West Virginia

Emma Mathers

Purification of Chemically and Bacterially Contaminated Waters
Using Organic Filtration Materials

Morgantown High School

Science Teacher – Joseph Melia

Sponsored by the West Virginia Water Environment Association

Wisconsin

Alex Booton and Cameron Palmer

Clearwater

“Utilizing Graphene as a Method of Desalination”

Muskego High School

Science Teacher – Karen Lindholm-Rynkiewicz

Sponsored by the Central States Water Environment Association

Wyoming

Cierra Carlson

Nanofiber Cellulose Zero Valent Iron Filtration: Potential for Reduction
of Water Borne Particulate and Microbial Contaminates

Greybull High School

Science Teacher – Joel Kuper

Sponsored by the Rocky Mountain Water Environment Association