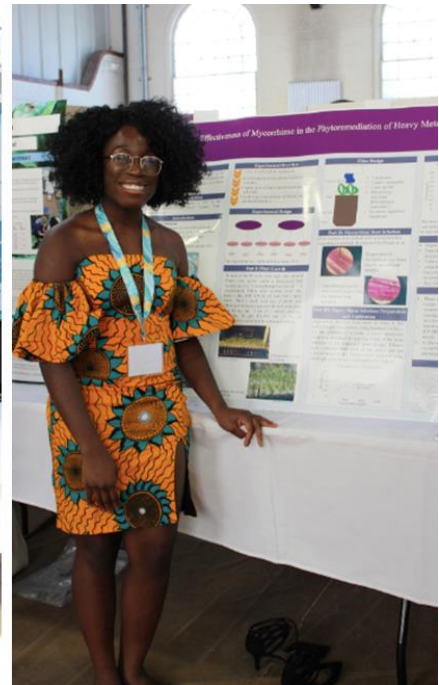




## 2019 Award Winners

**Intel ISEF Grand Awards – these students will travel to Phoenix in May to represent their work, their schools, and their state at the Intel International Science & Engineering Fair.**

- First Place: Tyler Delargy of Bangor High School
- Second Place: Antonina Zakorchemna & Artem Laptiev of Fryeburg Academy
- Third Place: Amara Ifeji of Bangor High School



**Scholarships – we are in our third year of offering college scholarships in cooperation with the following Maine institutions of higher education:**

University of Maine awarded 12 full-tuition renewable scholarships, offer of a mentor and research stipend, and admission to the honors college to:

- Leila Davids of Bangor High School
- Ijeoma Obi of Bangor High School
- Rowan Andrews of Bangor High School
- Madeline Ahola of Bangor High School
- Madison Momenee of Noble High School
- Emma Fitzpatrick of Greely High School

- Amara Ifeji of Bangor High School
- Connor Noddin of Bangor High School
- Anthony Caccese of Bangor High School
- Blake Erhard of Boothbay Region High School
- Lily McLaughlin of Bangor High School
- Marina Mohawass of Bangor High School

College of the Atlantic awarded two \$20,000 renewable scholarships to:

- Jordyn Miller of Bangor High School
- Jennifer Noyes of John Bapst Memorial High School

University of New England awarded five \$5,000 renewable scholarships to:

- Sarah Dorey of John Bapst Memorial High School
- Adelaide Valley of John Bapst Memorial High School
- Shannon O'Roak of Dexter Regional High School
- Madison Momenee of Noble High School
- Alyssa Ellis of Nokomis Regional High School

University of Maine at Augusta awarded two \$1,500 renewable scholarships to:

- Lauren Underhill of Nokomis Regional High School
- Jordyn Miller of Bangor High School

Husson University awarded five \$1,000 scholarships to:

- Shannon O'Roak of Dexter Regional High School
- Beau Briggs of Nokomis Regional High School
- Madison Hopkins of Nokomis Regional High School
- Vanessa Scott of Deering High School
- Taya Wood of Washington Academy

**Experiential Awards \*new this year\* – students signed up for the chance to win free tuition to one of four STEM programs this spring and summer. The winners are:**

Hurricane Island Advanced Marine Biology Summer Program

- Wade Wahlig of Falmouth High School

iXplore STEM Summer Program

- Swetha Palaniappan of Cape Elizabeth High School

The Keller BLOOM Program

- Jordyn Miller of Bangor High School

UNE Health Careers Exploration Camp

- Alya Theriault of Caribou High School

**Special Awards – local and national organizations have provided prize money for students winning the following awards:**

The Reach Award

- Dexuan Tang of Hebron Academy
- Antonina Zakorchemna & Artem Laptiev of Fryeburg Academy
- Blake Erhard, Lilley Harris of Boothbay Region High School
- Erica Schlichting of Gray New Gloucester High School

The Jackson Laboratory Future Innovator Award

- Sirohi Kumar of Mount Desert Island High School
- Noah Coyle of Bangor High School
- Quinn DAlessio of Bangor High School
- Lily Millard of Bangor High School
- Alden Wilcox of Caribou High School

The Judges' Fund for Excellence in Genetics

- Brandon Aponte of John Bapst Memorial High School

The Intel Excellence in Computer Science Award

- Ryan Kinney of Bangor High School

The Mu Alpha Theta Award for Excellence in Mathematics

- Samanthak Thiagarajan of Bangor High School

The Naval Science Award

- Leila Davids of Bangor High School
- Tyler Delargy of Bangor High School
- Anthony Caccese of Bangor High School
- Luke Conroy of Noble High School

Stockholm Junior Water Prize

- Lily McLaughlin & Rowan Andrews of Bangor High School
- Merline Feero of Waterville Senior High School

The SSP Community Innovation Award

- Ibrahim Saleh of Greely High School

**Category Awards – We recognize the top projects in each category. This year's winners are:**

Animal Sciences 1

- First Place: Vetri Vel of Bangor High School  
Using computer simulations to evaluate the potential impact of rising water temperatures and marine protected areas on the Gulf of Maine American lobster fishery
- Second Place: Pierce Jones & Nate Ingebritson of Mount Desert Island High School  
Basking sharks and mola mola in the dynamic warming Gulf of Maine; how are their populations changing?
- Third Place: Matthew Hafener of John Bapst Memorial High School  
Utilizing Photo-Identification to Study Summer Residence Patterns of Minke Whales in the Bay of Fundy and the Gulf of Maine

#### Animal Sciences 2

- First Place: Logan Eckmann of John Bapst Memorial High School  
Differentiation in herring gull tolerance levels between areas of varying human interaction
- Second Place: Ashton Caron of Nokomis Regional High School  
The Effect of Hair Length on Cattle Grazing
- Third Place: Patrick Masse & Ben Wilson of Brunswick High School  
Game tracking

#### Behavioral & Social Sciences 1

- First Place: Sirohi Kumar of Mount Desert Island High School  
Changing Study Habits: An Interventional Study
- Second Place: Naomi Noack of Bangor High School  
Studying the Effects of Deliberate Practice on Ambidexterity
- Third Place: Mallory Cogswell of Nokomis Regional High School  
Effects of Preferred Music on the Academic Performance of Introverts and Extroverts

#### Behavioral & Social Sciences 2

- First Place: Micah Pietraho of Brunswick High School  
N-Grams and Language Evolution
- Second Place: Paula Dauphinais & Nancy Dauphinais of Nokomis Regional High School  
Variances in social conformity among people of different ages, genders, neurological developments, and social media intake
- Third Place: Noah Robinson of Bangor High School  
Investigating the Relationship Between Polling Building Type and Voting Results

#### Biological Sciences & Engineering

- First Place: Yu Dong of Gould Academy  
Control of Circadian Rhythms: Regulate Sleep Patterns Observable in *Drosophila melanogaster*
- Second Place: Ibrahim Saleh of Greely High School  
3D Printing and Optimizing Microfluidic Devices to Model a Lab-on-a-Chip

- Third Place: Quinn DAlessio of Bangor High School  
How can biomimicry be used to engineer a device that efficiently condenses water vapor from the atmosphere so that it can be stored and utilized?

#### Biomedical & Health Sciences

- First Place: Blake Erhard & Lilley Harris of Boothbay Region High School  
Disguising Needles for Lowered Anxiety in Pediatric Patients
- Second Place: Minjeong Kim of Gould Academy  
Methylisothiazolinone induces cell death and apoptosis in human lung epithelial cells
- Third Place: Riley Grindle of Hancock County Technical Center  
2DG or not 2DG

#### Chemistry & Materials

- First Place: Marina Mohawass of Bangor High School  
Use of Vanadium Organic Complex to Remove Ethanol from Water
- Second Place: Tianze Xu of Gould Academy  
Insulated Clothing Material Standard Test
- Third Place: Leila Davids of Bangor High School  
Improved Engineered Cementitious Composites Using Polyvinyl Fibers As Reinforcement and Cellulose Nanofibers

#### Computer Science & Mathematics

- First Place: Ijeoma Obi of Bangor High School  
Developing a Fiji Program for Automated ImageJ - Based Analysis of Cardiomyocyte Contractions
- Second Place: SeungHeon Song of Gould Academy  
Smart Road Signs II: Road safety system for pedestrians and drivers distracted by mobile devices based on the Bluetooth 5 technology
- Third Place: Isaac Sewell of Bangor High School  
Wireless Data Server for the Doppler Bee Monitoring Radar

#### Energy

- First Place: Frederick Oldenburg, McKayla Kendall & Roland Ladd of Bangor High School  
Designing the Most Efficient Propeller to be Used for Energy Collection and Movement
- Second Place: Jaylee Rice of Nokomis Regional High School  
Measuring the Conductivity of Salt Bridges in Voltaic Cells
- Third Place: Nhan Ngo of Bangor High School  
Developing Deep Learning Networks for Dynamic Traffic Light Control

#### Engineering Mechanics

- First Place: Tyler Delargy of Bangor High School  
Developing Three-Dimensional Spatial Cognition for the Visually Impaired Using Computational Depth Mapping and Vibro-Tactile Display

- Second Place: Antonina Zakorchemna & Artem Laptiev of Fryeburg Academy  
Product Development of an Alternative Low-cost Braille E-Reader
- Third Place: Nicholas Jacobs of Bangor High School  
Replacing a Shelter Latch using Additive Manufacturing

#### Environmental Sciences 1

- First Place: Maddie Brookings of Bangor High School  
Profiling Four Maine Oligotrophic Lakes for Stormwater Effects and Susceptibility to Eutrophication
- Second Place: Natalie Liliav, Winnie French & Maya Elkadi of Bangor High School  
The Effect that Vitamin C has when combined with a Silver Nanoparticle Tablet in Water
- Third Place: Melissa Tian of Bangor High School  
The Effects of Ammonium Sulfate Deposition on Endo and Ecto Mycorrhizae in Red Spruce and American Beech Roots from Bear Brook Watershed in Maine

#### Environmental Sciences 2

- First Place: Andrea Grossmann of John Bapst Memorial High School  
Correlations Between Micro and Macroplastic Accumulation on Mount Desert Rock
- Second Place: Adam Elkadi of Bangor High School  
Providing an Efficient Solution to Our Plastic Pollution Problems
- Third Place: Emma Raven of Greely High School  
Method to Increase the Conversion Rate of Biodegradation of Polystyrene using *Pseudomonas putida*
- Third Place: Colton Trisch & Aarav Singh of Bangor High School  
Determining the Types of Electric Lighting that Contribute to Light Pollution in Maine

#### Physics & Astronomy

- First Place: Lindsay Cote of Nokomis Regional High School  
The price of golf balls and its effect on distance consistency
- Second Place: Grace Kirkpatrick of John Bapst Memorial High School  
FFT Analysis of the Waveforms Produced By Various Instruments
- Third Place: Du Duong & Nguyen Q of John Bapst Memorial High School  
Alpha Orion Observation

#### Plant Sciences

- First Place: Amara Ifeji of Bangor High School  
Testing the Effectiveness of Mycorrhizae in the Phytoremediation of Heavy Metals from Stormwater
- Second Place: Madison Momenee of Noble High School  
Maine Dichotomous Key
- Third Place: Erica Schlichting of Gray New Gloucester High School  
Exploration of growing spinach (*Spinacia oleracea*) in varying concentrations of folic acid

on the biomass (g) of the plants with a discussion of anencephaly, a folic acid deficiency disease.

Thanks to all teachers, judges, and other volunteers for making this such an amazing event each year! Maine State Science Fair is co-sponsored by The Reach Center at Maine Mathematics & Science Alliance and The Jackson Laboratory.