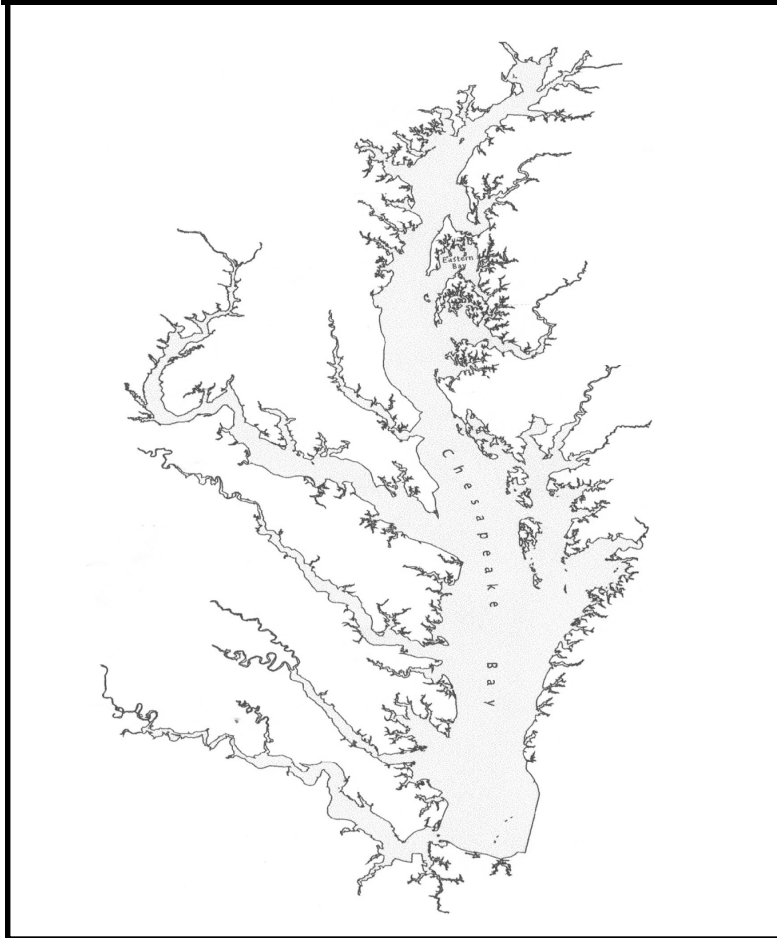


**Chesapeake Bay  
Governor's School**  
for Marine & Environmental Science

**19th Annual  
Science Symposium**



**Virtual Presentations  
Saturday, March 5, 2022  
8:00 am – 11:55 am**

# Program Schedule

**8:00**

**Judges' Meeting**  
[Chester Room](#)

**8:15**

**Orientation to Virtual Symposium for Attendees**

**8:30-11:55**

## **Student Presentations**

- James Room
- York Room
- Rappahannock Room
- Potomac Room
- Susquehanna Room
- Wicomico Room
- Nanticoke Room
- Choptank Room
- Chester Room
- Piankatank Room

*A separate CBGS Awards Ceremony will be held during CBGS classes the following week to recognize exemplary presentations*

## **Bowling Green Campus Students**

### **Caroline**

<a href="#">Jayda Anderson</a>	James Room	9:00
<a href="#">Brianna Cooksey</a>	Nanticoke Room	10:50
<a href="#">Arika Gray</a>	Wicomico Room	11:40
<a href="#">Caleb Greene</a>	Potomac Room	8:35
<a href="#">Sean Kenny</a>	Choptank Room	8:35
<a href="#">Kayla Klontzaris</a>	York Room	9:25
<a href="#">Aleksandra Witkowski</a>	Rappahannock Room	9:50

### **King George**

<a href="#">Andrew Grossen</a>	Rappahannock Room	11:40
<a href="#">Marie Han</a>	Piankatank Room	9:25
<a href="#">Kiersten Hannah</a>	Chester Room	9:50
<a href="#">Ella Indseth</a>	James Room	10:50
<a href="#">Kendra Kraisser</a>	Potomac Room	10:25
<a href="#">Kyle Reviello</a>	York Room	11:15

### **King William**

<a href="#">Gabby Carter</a>	Choptank Room	11:15
<a href="#">Jonah Ibanez</a>	Piankatank Room	10:25
<a href="#">Gracie Madren</a>	Wicomico Room	9:25
<a href="#">Amaya Thacker</a>	Susquehanna Room	9:00

## **Glenns Campus Students**

### **Gloucester**

<a href="#">Daniella Asnicar</a>	Nanticoke Room	9:00
<a href="#">Brenna Hendrix</a>	Choptank Room	10:25
<a href="#">Madelyn Tyler</a>	Susquehanna Room	10:25

### **King and Queen**

<a href="#">Megan Prince</a>	Rappahannock Room	9:00
<a href="#">Hunter Smith</a>	York Room	8:35

### **Mathews**

<a href="#">Carson Brown</a>	Piankatank Room	8:35
<a href="#">Brandon Gandee</a>	Choptank Room	9:25
<a href="#">William Hospodar</a>	Potomac Room	9:25
<a href="#">Joice Small</a>	Susquehanna Room	11:15
<a href="#">Dylan White</a>	Wicomico Room	10:50

### **Middlesex**

<a href="#">Allison Blake</a>	Piankatank Room	9:50
<a href="#">Kaydence Congleton</a>	Rappahannock Room	10:50
<a href="#">Madysen Davis</a>	Potomac Room	11:15
<a href="#">Wyatt Evans</a>	James Room	9:50
<a href="#">Ashtyn Franklin</a>	Chester Room	11:40
<a href="#">Autumn Satterly</a>	Chester Room	9:00
<a href="#">Aniyah Thompson</a>	Chester Room	10:50

### **New Kent**

<a href="#">You Gao</a>	York Room	10:25
<a href="#">Hadessah Johnson</a>	Wicomico Room	8:35
<a href="#">Aaron Sweeney</a>	Nanticoke Room	9:50

## Warsaw Campus Students

### Colonial Beach

<a href="#">Cassie Kincaid</a>	York Room	11:40
<a href="#">Steven Lilly</a>	Piankatank Room	9:00

### Essex

<a href="#">Emaline Basye</a>	James Room	8:35
<a href="#">McKenna Condrey</a>	Rappahannock Room	10:25
<a href="#">Arianna Fortune</a>	Potomac Room	9:50
<a href="#">Cole Gladden</a>	Chester Room	9:25
<a href="#">Matthew Herring</a>	Nanticoke Room	9:25
<a href="#">Payton Jones</a>	Choptank Room	9:00
<a href="#">Madison Nelson</a>	Chester Room	11:15
<a href="#">Chase Smith</a>	Choptank Room	9:50
<a href="#">R.J. Speidel</a>	Chester Room	9:25
<a href="#">Jake Yocum</a>	Piankatank Room	11:40

### Lancaster

<a href="#">Kylie Ewell</a>	York Room	9:50
<a href="#">Michael Foulkes</a>	Potomac Room	11:40
<a href="#">Carter McGee</a>	Susquehanna Room	9:25
<a href="#">Ainsley Mumford</a>	York Room	9:50
<a href="#">Shelby Rose</a>	Wicomico Room	9:00
<a href="#">Olivia Saunders</a>	James Room	10:25
<a href="#">Hailey Smith</a>	Wicomico Room	9:00

### Northumberland

<a href="#">Jayven Bea</a>	York Room	10:50
<a href="#">Grant Biddlecomb</a>	Nanticoke Room	11:15
<a href="#">Lane Eubank</a>	Nanticoke Room	8:35
<a href="#">Malik Hickman</a>	James Room	11:15
<a href="#">Jessica Lee</a>	Nanticoke Room	8:35
<a href="#">Teagan Mullins</a>	Rappahannock Room	11:15
<a href="#">Channing Reynolds</a>	Rappahannock Room	8:35
<a href="#">Hallie Shackelford</a>	James Room	11:40
<a href="#">Tom Neale</a>	Rappahannock Room	9:25

### Richmond

<a href="#">Alyssa Boisseau</a>	Wicomico Room	11:15
<a href="#">Mackenzie Cauthorn</a>	Wicomico Room	9:50
<a href="#">William Conley</a>	Susquehanna Room	11:40
<a href="#">G'Avoni Croxton</a>	Susquehanna Room	10:50
<a href="#">Lewis Ginn</a>	Chester Room	9:25
<a href="#">Aiden Lewis</a>	Wicomico Room	10:25
<a href="#">Emma Packett</a>	Piankatank Room	10:50
<a href="#">Hunter Self</a>	Nanticoke Room	10:25
<a href="#">Bladen Williams</a>	Chester Room	10:25

### Westmoreland

<a href="#">Conner Benson</a>	Choptank Room	11:40
<a href="#">Gabrielle Brown</a>	York Room	9:00
<a href="#">Angela Clayton</a>	Chester Room	8:35
<a href="#">Hayley Hirschberg</a>	Potomac Room	10:50
<a href="#">Dillon Miner</a>	Choptank Room	10:50
<a href="#">Mariajose Ocegüera-Andrade</a>	Susquehanna Room	8:35
<a href="#">Justin Sumiel</a>	James Room	9:25

8:35 - 8:50		
Emaline Basye	<a href="#">Reading vs. Video vs. Interaction: What is the Most Effective Way to Learn?</a>	James Room
Hunter Smith	<a href="#">Correlation of Solar Cycles and Earth's Temperature Since the Industrial Revolution</a>	York Room
Channing Reynolds	<a href="#">Tesla, Hybrids, and Gas Vehicles: What's in our Future for Transportation?</a>	Rappahannock Room
Caleb Greene	<a href="#">Crunch! The Effect of Material and Density on 3D Printed Structures for Hand Protection</a>	Potomac Room
Mariajose Ocegüera-Andrade	<a href="#">The Effectiveness of Vermicompost vs. Synthetic Fertilizer on Plant Growth</a>	Susquehanna Room
Hadessah Johnson	<a href="#">Compound Screening for Molecular Regulators of ZFP189 Using Luciferase Assay and qPCR</a>	Wicomico Room
Lane Eubank and Jessica Lee	<a href="#">Various Handwashing Techniques and Their Efficiency in Eliminating Micro-bacteria Prevalent in the Human Microbiota</a>	Nanticoke Room
Sean Kenny	<a href="#">The Effects of Urban Development and Riparian Buffers on an Urban Stream</a>	Choptank Room
Angela Clayton	<a href="#">Securing Hydroponics: Understanding the Flows of Hydroponic Systems</a>	Chester Room
Carson Brown	<a href="#">Is There a Correlation Between Microplate Seafloor Spreading Rates and Subduction Earthquake Frequency?</a>	Piankatank Room

9:00 - 9:15		
Jayda Anderson	<a href="#">Lending a Hand: The Prevalence of Repetitive Wrist Injuries for Various Work Conditions and Demographic Factors</a>	James Room
Gabrielle Brown	<a href="#">Connecting the Dots: A Look at the Working Short Term Memory of Elementary School Students</a>	York Room
Megan Prince	<a href="#">Characterizing the Plant Communities in Walkerton Marsh, Mattaponi River: Megan's Marsh Adventure</a>	Rappahannock Room
Hallie Shackelford	<a href="#">The Average Species Richness of Living Shorelines Versus Man-Made Shorelines</a>	Potomac Room
Amaya Thacker	<a href="#">Fish and Ships: The Effect of Fishing and Shipping Activity on Blue Shark Distribution</a>	Susquehanna Room
Shelby Rose and Hailey Smith	<a href="#">The Effects of Boat Pollution on Benthic Diversity and Abundance</a>	Wicomico Room
Daniella Asnicar	<a href="#">Observations of Native Pollinator Diversity and Abundance in Different Habitat Types</a>	Nanticoke Room
Payton Jones	<a href="#">Using CO2 as a Proxy to Test Ventilation Rates in the Northern Neck Technical Center Classrooms and the RCC Warsaw Campus</a>	Choptank Room
Autumn Satterly	<a href="#">Does Surface Applied Flea and Tick Pesticide Affect Aquatic Invertebrates?</a>	Chester Room
Steven Lilly	<a href="#">Effluent's Effect on the Environment</a>	Piankatank Room

9:25-9:40		
Justin Sumiel	<a href="#">Synopsis on the Changes and Conditions That Have Occurred in the Chesapeake Bay Over the Last 13 Years</a>	James Room
Kayla Klontzaris	<a href="#">Ya Feel? The Impact of Social-Emotional Instructional Strategies on Science Learning</a>	York Room
Tom Neale	<a href="#">Impacts Grass Carp Have on the Chesapeake Bay and Surrounding Bodies of Water</a>	Rappahannock Room
William Hospodar	<a href="#">An Analysis of Marine Microplastic Debris as a Threat Across the Water Column</a>	Potomac Room
Carter McGee	<a href="#">The Effects of Broadcast Seeding on <i>Secale cereale</i> Growth and Abundance</a>	Susquehanna Room
Gracie Madren	<a href="#">Are Boomers Any Fun? The Likelihood of Risk-Taking in Relation to Age and Gender</a>	Wicomico Room
Matthew Herring	<a href="#">How to Make "Green" Paint: A Comparison of Organic and Chemical Paint</a>	Nanticoke Room
Brandon Gandee	<a href="#">Public Opinion on Carbon Pricing and the Effectiveness of Educational Videos</a>	Choptank Room
Lewis Ginn, Cole Gladden, and R.J. Speidel	<a href="#">The Effects of Environment on Water Quality During the Fall Months</a>	Chester Room
Marie Han	<a href="#">The Effect of Ambiguity on Risk Taking and Risk Aversion</a>	Piankatank Room

9:50-10:05		
Wyatt Evans	<a href="#">The Comparison of Freshwater Pond Ecosystems with Various Levels of Human Influence</a>	James Room
Ainsley Mumford and Kylie Ewell	<a href="#">The Filtration Rate of Oyster Reefs vs. Benthic Oysters</a>	York Room
Aleksandra Witkowski	<a href="#">Just Brew It! Decomposition Rates of Wooden vs. Plastic vs. "Biodegradable Plastic" Coffee Stirrers in Different Sediment Conditions</a>	Rappahannock Room
Arianna Fortune	<a href="#">Edge Effects of Forests</a>	Potomac Room
	FREE	Susquehanna Room
Mackenzie Cauthorn	<a href="#">Does Using the Sidedressing Method Increase the Growth of Corn?</a>	Wicomico Room
Aaron Sweeney	<a href="#">The Effect of Roof Surface Characteristics On Albedo and Temperature</a>	Nanticoke Room
Chase Smith	<a href="#">Nerf or Nothing? A Look at Foam Darts Accuracy and Precision</a>	Choptank Room
Kiersten Hannah	<a href="#">Save the Turtles, Keep the Industry: The Effect of Bycatch Reduction Devices on Blue Crab Catch Rate</a>	Chester Room
Allison Blake	<a href="#">Shifts in Tornado Strength, Frequency and Location in Virginia with Changing Climate</a>	Piankatank Room

<b>10:05-10:20 BREAK</b>		
	No Student Presentations	James Room
	No Student Presentations	York Room
	No Student Presentations	Rappahannock Room
	No Student Presentations	Potomac Room
	No Student Presentations	Susquehanna Room
	No Student Presentations	Wicomico Room
	No Student Presentations	Nanticoke Room
	No Student Presentations	Choptank Room
	No Student Presentations	Chester Room
	No Student Presentations	Piankatank Room

<b>10:25-10:40</b>		
Olivia Saunders	<a href="#">Bacterial Growth on High-Contact Surfaces in a High School</a>	James Room
You Gao	<a href="#">Lunar Seismology Analysis - Do Tides Affect Earthquake Frequency?</a>	York Room
McKenna Condrey	<a href="#">The Mental Health Effects of the Coronavirus Pandemic on High School Students</a>	Rappahannock Room
Kendra Kraisser	<a href="#">Keep Calm and Study On! The Correlation Between Academic Performance / Grade Satisfaction and Student Stress Levels</a>	Potomac Room
Madelyn Tyler	<a href="#">Using Crowdsourcing to Assess the Extent of Coastal Flooding During King Tide Events in the Lower Chesapeake Bay</a>	Susquehanna Room
Aiden Lewis	<a href="#">Filtration Observations of the Eastern Oyster in Different Temperatures</a>	Wicomico Room
Hunter Self	<a href="#">The Success Rate of Buying Double Dips</a>	Nanticoke Room
Brenna Hendrix	<a href="#">The Effect of Oyster Reef Restoration on New Recruitment to Nearby Shoreline Habitat</a>	Choptank Room
Bladen Williams	<a href="#">Living Shorelines, What Do They Really Provide?</a>	Chester Room
Jonah Ibanez	<a href="#">Trash Talk: The Effects of Efficacy-Diminishing and Efficacy-Boosting Commentary on Golf Performance</a>	Piankatank Room



10:50-11:05		
Ella Indseth	<a href="#">Testing the Ocean's Natural Filter: Bioremediation of Fish-Polluted Water by the Macroalga <i>Chaetomorpha linum</i></a>	James Room
Jayven Bea	<a href="#">What Effects the Deterioration and Longevity of Track Spikes ?</a>	York Room
Kaydence Congleton	<a href="#">Abundance of the Invasive Anemone, <i>Diadumene lineata</i>, on Oysters in the Lower Chesapeake Bay</a>	Rappahannock Room
Hayley Hirschberg	<a href="#">The Occurrence of King Tide Coastal Flooding Since 1998</a>	Potomac Room
G'Avoni Croxton	<a href="#">Are You Protected?: A Study On Mask Effectiveness</a>	Susquehanna Room
Dylan White	<a href="#">Characterization and Comparison of Two Macroalgal Communities in the Lower Chesapeake Bay</a>	Wicomico Room
Brianna Cooksey	<a href="#">Jitters and the Big Sad: The Correlation Between Childhood Trauma and the Development of Anxiety and/or Depression in Adulthood</a>	Nanticoke Room
Dillon Miner	<a href="#">The Effect of the Coefficient of Restitution on Wooden Bat Performance</a>	Choptank Room
Aniyah Thompson	<a href="#">What Successional Stage is the RCC Glenss Forest? The Lorax Project</a>	Chester Room
Emma Packett	<a href="#">Draft Horse Feather Condition: What is the Best Way to Cure Equine Scratches?</a>	Piankatank Room

11:15-11:30		
Malik Hickman	<a href="#">The Effects of Malathion on the Development of Brine Shrimp</a>	James Room
Kyle Reviello	<a href="#">Fossil or Clean: Which One is Green? The Performance of a Turbine Engine Using Fossil Diesel vs. Two Biodiesels</a>	York Room
Teagan Mullins	<a href="#">The Concentration of Microplastics on the Great Wicomico River</a>	Rappahannock Room
Madysen Davis	<a href="#">The Effect of Laundry Products with Strong Fragrances on the Development of Larval <i>Drosophila melanogaster</i></a>	Potomac Room
Joice Small	<a href="#">Examining Epiphytic Growth on Submerged Aquatic Vegetation</a>	Susquehanna Room
Alyssa Boisseau	<a href="#">Liars. Takes One to Know One: How Lying Affects Lie-Spotting Abilities</a>	Wicomico Room
Grant Biddlecomb	<a href="#">Does Bilingualism Have an Effect on Critical Thinking Ability?</a>	Nanticoke Room
Gabby Carter	<a href="#">VROOM! The Difference in Run-Times between Solar and Gas Powered Lawnmowers</a>	Choptank Room
Madison Nelson	<a href="#">The Effects of Usage on Vending Machine Cleanliness</a>	Chester Room
	FREE	Piankatank Room

11:40-11:55		
Hallie Shackelford	<a href="#">The Average Species Richness of Living Shorelines Versus Man-Made Shorelines</a>	James Room
Cassie Kincaid	<a href="#">Surgical Sutures and the Effect of pH on Their Tensile Strength</a>	York Room
Andrew Grossen	<a href="#">Can 3D Printing Put More Oysters on Your Dinner Plate? A Study of Spat Settlement on 3D Printed Oyster Shells vs. Natural Shells</a>	Rappahannock Room
Michael Foulkes	<a href="#">The Effects of Footwear on Running Form for Short Distance Runs</a>	Potomac Room
William Conley	<a href="#">Does Leaf Litter Have an Effect on the Nitrogen Content in the Soil?</a>	Susquehanna Room
Arika Gray	<a href="#">Get Off Your Phone! The Correlation between Social Media Usage and Adolescents' Happiness, Social Satisfaction, and Social Connectedness</a>	Wicomico Room
	FREE	Nanticoke Room
Conner Benson	<a href="#">A Comparison of the Benthic Index of Biotic Integrity in Popes and Buckner Creek During the Late Fall</a>	Choptank Room
Ashtyn Franklin	<a href="#">Can Benthic Microphytobenthos Improve Water Quality in the Chesapeake Bay?</a>	Chester Room
Jake Yocum	<a href="#">Studying the Growth of Bacteria in Milk after the Sell-by Date</a>	Piankatank Room

## Mentors

**On behalf of the Chesapeake Bay Governor's School students and staff, we extend our gratitude to the mentors for sharing their expertise and encouragement with our seniors in the preparation and presentation of the research projects. We are looking for mentors for future student research projects. If you know someone who may be interested, please contact CBGS.**

**Dr. Rachel Ball**  
**(804) 443-0267**  
**rball@cbgs.k12.va.us**  
**www.cbgs.k12.va.us**

## Thank you to our judges

*We would like to extend a special thank you to all the judges.  
Our students and teachers appreciate your expert advice in a  
variety of scientific disciplines.*

### Judges

**Dr. Andrew Adrian**, *Ph.D. - Genomics, University of Iowa, Data Scientist, NASA Langley Research Center*

**Ms. Sara Blachman**, *Coastal Systems Ecology and Modeling Program, Virginia Institute of Marine Science*

**Ms. Celia Cackowski**, *Marine Education Specialist, Virginia Institute of Marine Science,*

**Dr. Lin Chen**, *Computer Engineer, Langley Air Force Base*

**Ms. Rachel Dixon**, *Ph.D. Candidate, Virginia Institute of Marine Science, College of William and Mary*

**Dr. Ann Evans**, *Professor, Thomas Nelson Community College*

**Ms. Livia Gong**, *Former CBGS Faculty*

**Mr. Mark Hall**, *CBGS Alumnus, University of Virginia, Mathematics and Science Teacher*

**Mr. Grayson Johnson**, *Ph.D. Candidate, University of Virginia, CBGS Alumnus*

**Mr. Brian Kim**, *Ph.D. Candidate, Virginia Institute of Marine Science, College of William and Mary*

**Mr. Sean Kinard**, *Ph.D. Candidate, Virginia Institute of Marine Science, University of Washington Alumnus*

**Ms. Amanpreet Kohli**, *Ph.D. Candidate, Virginia Institute of Marine Science, College of William and Mary*

**Ms. Erin-Darby McClain**, *CBGS Alumnus, College of William and Mary*

**Dr. Patrick McGrath**, *Marine Scientist, Virginia Institute of Marine Science*

**Dr. Charles Rosenbaum**, *Retired Clinical Professor of Family Medicine, Medical College of Virginia/Virginia Commonwealth University*

**Ms. Annie Schatz**, *Ph.D. Candidate, Virginia Institute of Marine Science, College of William and Mary*

**Ms. Kristen Sharpe**, *Ph.D. Candidate, Virginia Institute of Marine Science, College of William and Mary*

**Ms. Abigail Sisti**, *Ph.D. Candidate, Virginia Institute of Marine Science, College of William and Mary*

**Ms. Bethany Smith**, *Marine Education Specialist, Virginia Institute of Marine Science*

**Mr. Hugh Sullivan**, *Environmental Protection Specialist, USEPA Office of Water, Former Biology Teacher, Prince William County, MS - Virginia Commonwealth University*

**CBGS Faculty**

Claire Adrian-Tucci

James Beam

Sara Beam

Greg Dorsey

Dr. Kevin Goff

Justine Henderson

Dr. Vinh Hoang

Meredith Jones

Gary Long

Jennifer Magruder

Stephanie McClain

Kim Olsen

Dr. Danielle Ross

Brooke Sanders

Phillip Sanderson

**CBGS Staff**

Fiora DeBorous

Teresa Drumheller

Rose Jones

Becky Sisson

**CBGS Director**

Dr. Rachel Ball



## **Technical Support**

If you experience technical issues and require support during our virtual symposium, you may contact via phone or email:

Mr. Greg Dorsey  
Lead Physics Faculty  
gdorsey@cbgs.k12.va.us  
804-758-6788