

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

**20th Annual
Science Symposium**



**Virginia Commonwealth University
Student Commons
Saturday, March 4, 2023
9:00 a.m. – 2:00 p.m.**

Program Schedule

8:50 **Report to Rooms for Introduction**

9:00-11:45 **Student Presentations**

- Commons Theater
- Richmond Salon I
- Richmond Salon II
- Richmond Salon III
- Richmond Salon IV
- Virginia Room A
- Virginia Room B
- Virginia Room D

11:45-12:45 **Lunch**

12:55 **Commonwealth Ballroom**

Welcome and Introduction of Speaker:

Dr. Jason Strong
Director

1:00-1:30 **Keynote Address:**
 “The Global Clean Energy Transition and You”

Andrew Grigsby
Energy Services Director
Viridian

1:30-2:00 **Awards Ceremony and Closing Remarks:**

Dr. Jason Strong
Marine and Environmental Science Faculty

Bowling Green Campus Students

Caroline

Rushella Epperson	Virginia Room D	11:10
Marcos Gaitan	Commons Theater	9:20
Dominic Kittle	Virginia Room B	9:20
Max Laguerta	Richmond Salon I	10:30
Colton Lynch	Richmond Salon III	9:00
Madisyn Paris	Richmond Salon II	11:30

King George

Reyna Garcia	Richmond Salon III	10:50
Stephen Haug	Richmond Salon II	10:00
Samantha Jones	Virginia Room A	11:10
Corinna Pardee	Richmond Salon IV	9:20
Chelsea Saguid	Richmond Salon I	9:40
Jesse Ulfers	Richmond Salon I	9:00

King William

Kyla Blanton	Richmond Salon IV	11:30
Guy Carrington	Virginia Room A	9:40
Olivia Cross	Virginia Room D	9:00
Carter Fox	Virginia Room B	10:00
Emma Frayser	Commons Theater	10:50
Camden Jones	Richmond Salon II	10:30

Glenns Campus Students

Gloucester

Braden Hudgins	Commons Theater	11:30
Joshua Mayer	Richmond Salon IV	10:30
Kayleigh Miller	Richmond Salon IV	11:10
Makaela Tilley	Virginia Room A	10:00

King and Queen

Elijah Boone	Richmond Salon III	9:40
Makayla Holmes	Virginia Room D	10:30

Mathews

Lillian Copeland	Virginia Room B	9:00
Savannah Hartlove	Virginia Room A	10:50
Ethan Hudgins	Richmond Salon III	10:30
Faith Lewis	Richmond Salon IV	9:40
Rianna Richmond	Virginia Room B	11:30

Middlesex

Erik Graulich	Commons Theater	9:00
Courtney Harrow	Richmond Salon II	9:20
Chessa Lowery	Richmond Salon I	10:00
Sydney Rader	Virginia Room A	9:00
Makayla Seamster	Richmond Salon I	11:10
William Walker	Commons Theater	10:00

New Kent

Ema Allen	Richmond Salon III	11:10
Paige Baldwin	Virginia Room D	9:40
Katherine Diaz-Cormier	Virginia Room A	9:20

Warsaw Campus Students

Colonial Beach

Justice Richardson	Virginia Room D	10:50
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Essex

Laila Gwathmey	Virginia Room D	9:20
Aviania Thompson	Virginia Room A	9:00

Lancaster

Kelvin Davis	Richmond Salon II	9:00
Ethan Kane	Richmond Salon I	11:30
Jonathan Lee	Richmond Salon II	9:40
Eli Pittman	Commons Theater	11:10
Ella Posey	Richmond Salon IV	9:00

Northumberland

James Baker	Commons Theater	9:40
Paris Chinn	Richmond Salon IV	10:50
Quinton Jones	Richmond Salon III	11:30
Matthew Kelley	Virginia Room D	11:30
Corrie Minor	Commons Theater	10:30
Kiara Thompson-Morris	Richmond Salon II	11:10
Camdin Sisk	Richmond Salon III	9:20
Harrison Williams	Commons Theater	11:10

Richmond

Layla Gaines	Virginia Room B	11:10
McKenna Goodwyn	Richmond Salon IV	10:00
Haley Haydon	Virginia Room A	11:30
Holly Haydon	Virginia Room B	9:30
Jacqueline Kennedy	Richmond Salon I	10:50
Juliann Litzinger	Virginia Room D	10:00

Westmoreland

Janiyah Gaskins	Richmond Salon I	9:20
Khalia Morris	Richmond Salon III	10:00
Destinee Quitno	Virginia Room B	10:30
Julissa Valdez	Virginia Room A	10:30
Trinity Wise	Virginia Room B	10:30

9:00 - 9:15		
Erik Graulich	The Effect of Biocide Type and Concentration on Fouling and the Survival of Exposed Estuarine Crustaceans	Commons Theater
Jesse Ulfers	Do Oysters Have Noses? The Effect of Oyster Pheromones on Spat Accumulation and Biodiversity	Richmond Salon I
Kelvin Davis	How does Height and Weight affect Teenager Balance	Richmond Salon II
Colton Lynch	The Correlation Between Sleep Duration and Short-Term Memory Performance in Adolescents	Richmond Salon III
Ella Posey	Toxicity of Sunscreens on Brine Shrimp	Richmond Salon IV
Aviania Thompson	The Influence of Covid-19 on Gender and Age	Virginia Room A
Lillian Copeland	Grounded: A Comparison of Soil Organic Carbon From Forest to Field	Virginia Room B
Olivia Cross	Learning Arithmetic in Grades 3-5 through a Play Teaching Method versus a Traditional Teaching Method	Virginia Room D

9:20 - 9:35		
Marcos Gaitan	The Effects of Time and Social Pressure on Risk-Taking in Adolescents	Commons Theater
Janiyah Gaskins	How Does Practicing Yoga Affect your Mental Health?	Richmond Salon I
Courtney Harrow	Finding a New Home for Chesapeake Bay Oyster Spat	Richmond Salon II
Camdin Sisk	The Effect of Sound Pollution on Filtration Rates of <i>Crassostrea virginica</i>	Richmond Salon III
Corinna Pardee	The Correlation Between Attention Deficit Hyperactivity Disorder, Anxiety Disorders, and Major Depressive Disorder	Richmond Salon IV
Katherine Diaz-Cormier	Home Invasion! The Effect of Beach Nourishment on Mole Crab & Coquina Population Dynamics	Virginia Room A
Dominic Kittle	Up In Smoke: Quantifying Understory Vegetation in Mature Coniferous and Deciduous Forests to Gauge Forest Fire Threat	Virginia Room B
Laila Gwathmey	The Effects of Age on Your Color and Cognition	Virginia Room D

9:40 - 9:55		
James Baker	The Effect of Arbuscular Mycorrhizal Fungi on Physiological Water Tolerance and Growth on Soybean Plants	Commons Theater
Chelsea Saguid	Tension Failure of Skin Laceration Sutures of Different Types of Materials	Richmond Salon I
Jonathan Lee	The Impact of Social Media on the Mental Health of Adolescents	Richmond Salon II
Elijah Boone	The Change of Fitness of Football Players	Richmond Salon III
Faith Lewis	The Effectiveness of Roundup in Commercial Farming	Richmond Salon IV
Guy Carrington	The Effect of Different Musical Tempos on the Pacing of Cardiovascular Exercise	Virginia Room A
Holly Haydon	Iron and Copper Concentration Effects on Brine Shrimp Hatching and Mortality	Virginia Room B
Paige Baldwin	The Development and Testing of a New Method for Measuring Nearshore Turbidity- the 3D Coastal Comparator	Virginia Room D

10:00 - 10:15		
William Walker	The Sweet Problem: A Study on Addiction and Sugar	Commons Theater
Chessa Lowery	Arbuscular Mycorrhizal Fungi as Plant Probiotics	Richmond Salon I
Stephen Haug	Get On My Roof! A Comparison of Green Roofs and Photovoltaic Roofs for Reducing Atmospheric Carbon	Richmond Salon II
Khalia Morris	Impact of Beaver Dams on Water Quality	Richmond Salon III
McKenna Goodwyn	Effects on Students in Separated vs. Non-separated Families	Richmond Salon IV
Makaela Tilley	Washed Away: An Analysis of Stormwater Runoff by Parking Lot Size	Virginia Room A
Carter Fox	How Auditory Processing vs. Visual Processing of Information Affects Short-Term Memory in High Achieving High School Students	Virginia Room B
Juliann Litzinger	Impact of Extracurricular Activities on the Mental Health of Young Adults	Virginia Room D

10:15 - 10:25 BREAK		
	No Student Presentation	Commons Theater
	No Student Presentation	Richmond Salon I
	No Student Presentation	Richmond Salon II
	No Student Presentation	Richmond Salon III
	No Student Presentation	Richmond Salon IV
	No Student Presentation	Virginia Room A
	No Student Presentation	Virginia Room B
	No Student Presentation	Virginia Room D

10:30 - 10:45		
Corrie Minor	The Effect of Salinity on Blue Crab, <i>Callinectes sapidus</i> , Sponge Color Change	Commons Theater
Max Laguerta	The Correlation of Vocabulary Test Scores to Short-Term Memory and Verbal Intelligence as a Function of Study Time	Richmond Salon I
Camden Jones	Crustacean Nitration: The Effect of Amano Shrimp, <i>Caridina multidentata</i> , on the Nitrogen Cycle in Freshwater Aquaria	Richmond Salon II
Ethan Hudgins	Nutrient Uptake Provided by Floating Vegetated Islands	Richmond Salon III
Joshua Mayer	Comparing the Growth and Survival Rate of Oysters Raised Using Standard and Recirculating Aquaculture Methods	Richmond Salon IV
Julissa Valdez	Comparing Detergents impact on Brine Shrimp Hatching and Survival?	Virginia Room A
Destinee Quitno and Trinity Wise	The Impact of Development on Nutrient Pollution and Water Quality	Virginia Room B
Makayla Holmes	What Do You Bee-fer? Testing Bees' Food Preference	Virginia Room D

10:50 - 11:05		
Emma Frayser	Try Juggling All These Tasks! A Comparison of Multitasking to Performing Tasks Sequentially	Commons Theater
Jacqueline Kennedy	Aquaponic vs. Hydroponic Growout Systems	Richmond Salon I
Sydney Rader	A Study on the Potential for Vitamin D Deficiency in Adolescents	Richmond Salon II
Reyna Garcia	The Effect of Varying Concentrations of the Toxic Metals Lead and Cadmium on Grass Seed Germination	Richmond Salon III
Paris Chinn	Does the Length of your Nails Determine the Amount of Bacteria Found Underneath the Nails? What is the Best Method of Hand and Nail Washing?	Richmond Salon IV
Savannah Hartlove	Periwinkles: <i>Spartina</i> Friend or Foe?	Virginia Room A
	No Student Presentation	Virginia Room B
Justice Richardson	A Prediction on Seasonal Temperature Changes Effect on <i>Chrysaora chesapeakei</i> Abundance in the Chesapeake Bay: Could Global Warming Be the Cause?	Virginia Room D

11:10 - 11:25		
Eli Pittman and Harrison Williams	Does Crab Pot Color Influence Catch Rate?	Commons Theater
Makayla Seamster	Efficacy of Different Topical Antibiotics Against Bacteria from Chesapeake Bay Waters	Richmond Salon I
Kiara Morris	A Study on the Growth and Bioremediation of Legumes in Lead Contaminated Soils	Richmond Salon II
Ema Allen	Enhancing Sustainability in Parking Areas- Can Solar Canopies Effectively Reduce the Heat Island Effect?	Richmond Salon III
Kayleigh Miller	The Impact of Shoreline Hardening on Nearshore Fish Populations	Richmond Salon IV
Samantha Jones	The Growth of Soil Bacteria under Conventional versus Traditional Agricultural Practices	Virginia Room A
Layla Gaines	The Effect Color has on Memory	Virginia Room B
Rushella Epperson	The Effect of Distance from the Cap of a Closed Landfill on the Diversity of Plants in Secondary Succession	Virginia Room D

11:30 - 11:45		
Braden Hudgins	Assessing the Effect of Green Lights on Positive Phototaxis in Nearshore Fish	Commons Theater
Ethan Kane	The Effects of Major and Minor Key Music on Concentration Levels of Students	Richmond Salon I
Madisyn Paris	The Correlation of Academic Achievement with Family Structure, Mental Health, and Learning Disabilities During the K-12 Years	Richmond Salon II
Quinton Jones	What Social Identities are More Likely to Affect a Student's Academic Success?	Richmond Salon III
Kyla Blanton	The Effect of Sugary vs. Starchy Breakfasts on Short Term Memory	Richmond Salon IV
Haley Haydon	What Cleaning Product is Most Effective in Removing Bacteria?	Virginia Room A
Rianna Richmond	Testing the Efficacy of Various Hand Washing Methods	Virginia Room B
Matthew Kelley	Testing the Viability of Butanol as a Substitute for Gasoline	Virginia Room D

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.

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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. Joseph Battistelli, *Biology Professor, Virginia Commonwealth University*

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

Ms. Kaite Cisz, *Graduate Student, Virginia Institute of Marine Science*

Mr. Roman Cutler, *Founder, ZigZag; Founder, Microcell; Research & Development Leader, Uyoga; Technology Specialist, Inner Artist Mastery; CBGS Alumnus*

Mr. Carlos Disla, *Geographic Information Systems Coordinator, Essex County; Former CBGS Faculty*

Dr. Ann Evans, *Biology Professor, Virginia Peninsula Community College*

Ms. Nihal Guennouni, *Graduate Student, Virginia Institute of Marine Science*

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

Dr. Grayson Johnson, *Researcher, University of Virginia; CBGS Alumnus*

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

Dr. Sherif Moussa, *Chemistry Professor, Virginia Commonwealth University*

Ms. Suzanne Nguyen, *Ph.D. Candidate, Civil Engineering, University of Virginia; Former CBGS Faculty*

Ms. Erin Reilly, *Senior Staff Scientist, James River Association*

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

Ms. Kristen Sharpe, *Assistant Director of Outreach & Engagement, Virginia Institute of Marine Science*

Mr. Hugh Sullivan, *Environmental Protection Specialist, United States Environmental Protection Agency, Office of Water*

CBGS Faculty

Claire Adrian-Tucci

James Beam

Sara Chaves Beam

Greg Dorsey

Dr. Lexi Duscher

Dr. Kevin Goff

Livia Gong

Dr. Vinh Hoang

Meredith Jones

Jennifer Magruder

Stephanie McClain

Dr. Danielle Ross

Phillip Sanderson

Brooke Sanders

Lynn Smith

CBGS Staff

Fiora Deborous

Teresa Drumheller

Rose Jones

Lindsay Knight

CBGS Director

Dr. Jason Strong



University Student Commons

