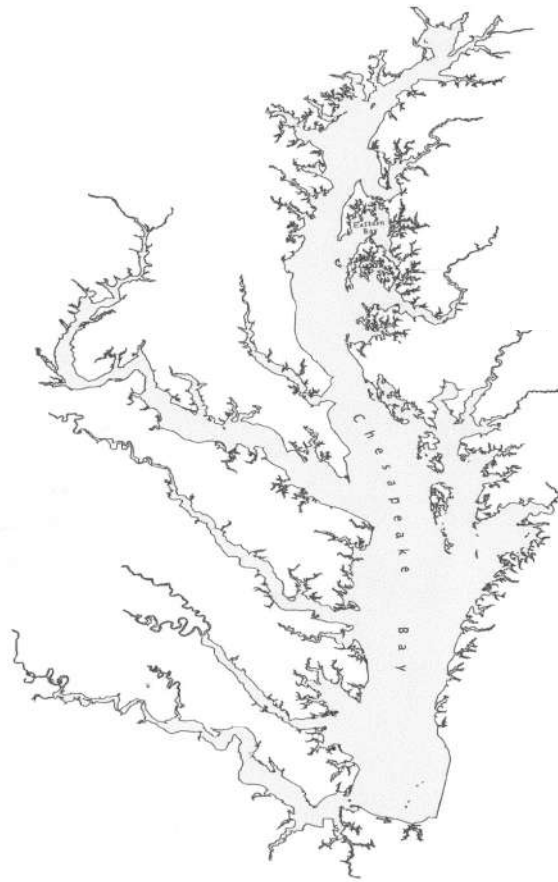


**Chesapeake Bay
Governor's School**
for Marine & Environmental Science

**21st Annual
Science Symposium**



**Virginia Commonwealth University
Student Commons
Saturday, March 2, 2024
9:00 a.m. – 2:00 p.m.**

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
Carolyn Reiner
Dr. Danielle Ross
Phillip Sanderson
Brooke Sanders
Lynn Smith

CBGS Staff

Teresa Drumheller
Rose Jones
Lindsay Knight
Michele Phillips

CBGS Director

Dr. Jason Strong



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:**
 “Creativity to Confront the Biodiversity Crisis”
 Dr. Catherine Hulshof De La Peña
 Biodiversity Research Lab
 Department of Biology, Virginia Commonwealth University

1:30-2:00 **Awards Ceremony and Closing Remarks:**
 Dr. Jason Strong
 Marine and Environmental Science Faculty

Student Presentations by Last Name

Taylor Allen	Virginia Room A	9:40
Abby Almassy	Richmond Salon III	9:00
Savana Balderson	Virginia Room A	10:30
Harmyni Ball	Richmond Salon III	9:20
Rebekah Beaty	Virginia Room A	9:00
Laci Belvin	Virginia Room D	10:00
Nathalie Biddlecomb	Richmond Salon IV	10:50
Adelina Bowden	Virginia Room A	11:30
Lily Brame	Commons Theater	10:00
Zoe Camp	Richmond Salon II	9:20
Tara Carter	Virginia Room D	10:30
Jenaya Cox	Richmond Salon IV	11:10
Layla Dawson	Virginia Room D	9:20
Aimee Dunham	Richmond Salon IV	11:30
Brayden Enoch	Virginia Room B	9:00
Barry Ewell	Commons Theater	9:40
Marcus Fero	Richmond Salon II	10:30
Bailey Fones	Richmond Salon II	11:10
Amber Goens	Richmond Salon IV	9:40
Andrew Greve	Virginia Room A	10:50
Madison Gulasky	Richmond Salon IV	9:20
Ailin Harpole	Richmond Salon I	11:10
Layanna Hayes	Virginia Room B	10:00
Madison Hensley	Virginia Room D	10:50
Libbie Hospodar	Richmond Salon III	9:40
Christon Jones	Richmond Salon I	9:00
Kylie Jones	Richmond Salon IV	9:00
Davis Kildoo	Richmond Salon III	11:10
Arwen Kintz	Richmond Salon I	10:30
Brendan Kraisser	Virginia Room D	11:10
Isaac Lamprecht	Commons Theater	11:30
Layla Leo	Richmond Salon I	9:20

Taylor Logan	Richmond Salon III	10:00
Liam McDonough	Richmond Salon I	10:50
Sarah McGee	Virginia Room D	11:30
Dylan McIlwain	Richmond Salon II	11:30
Samantha McKenney	Virginia Room B	9:40
Leah Medlin	Virginia Room B	11:10
Aubrey Micket	Richmond Salon I	10:00
Camryn Micket	Richmond Salon IV	10:30
Madeline Miller	Virginia Room A	9:20
Chris Miller	Virginia Room B	10:50
Caitlin Murphy	Commons Theater	10:50
Sydney Nash	Virginia Room D	9:00
Caroline Neale	Richmond Salon II	9:40
William Ochoa	Virginia Room B	9:20
Lily Ohlschlager	Commons Theater	9:00
Anajah Owens	Virginia Room B	10:30
Bevan Ransone	Commons Theater	11:10
Alora Rohm	Richmond Salon II	10:00
Joseph Scripture	Virginia Room A	10:00
Aidan Sweeney	Virginia Room B	11:30
Shawna Tarkington	Richmond Salon I	9:40
Virginia Tribble	Commons Theater	10:30
Davis Unser	Commons Theater	9:20
Shay Velazquez	Richmond Salon III	10:50
Lucy Vondra	Richmond Salon IV	10:00
Tripp Walker	Virginia Room D	9:40
Tucker Webb	Richmond Salon III	10:30
Mason Welsh	Richmond Salon II	10:50
Jon Wijnand	Richmond Salon I	11:30
Harmony Williams	Richmond Salon II	9:00
Emily Withers	Richmond Salon III	11:30
Carter Wood	Virginia Room A	11:10

9:00 - 9:15		
Lily Ohlschlager	<i>Hydrilla verticillata</i> in the Chickahominy River- Are All Invaders Really Bad?	Commons Theater
Christon Jones	Growing Green: The Effect of Microplastics on Soil Quality and Romaine Lettuce Growth	Richmond Salon I
Harmony Williams	Does Physical Activity Have an Effect on Short-Term Memory	Richmond Salon II
Abby Almassy	The Floods Are Coming! A Field Study of Water Quality Impacts of a Rainfall Event on the Rappahannock River	Richmond Salon III
Kylie Jones	Sweeteners Effect on the Oral Microbiome	Richmond Salon IV
Rebekah Beaty	How People Perceive Treatment Towards Themselves and Others Based on Their Social Identity and Their Race	Virginia Room A
Brayden Enoch	A Study on the Tick Population in the Local Area- Are You "Tick"lish?	Virginia Room B
Sydney Nash	Surface Level: The Effect of Different Surfaces on Runners' Performance and Efficiency	Virginia Room D

9:20 - 9:35		
Davis Unser	One in a Melon: The Relationship Between an Aerially Assessed Growing Index and Watermelon Sweetness	Commons Theater
Layla Leo	The Impact of Livestock Antibiotics on Marsh Microbes	Richmond Salon I
Zoe Camp	Does the Presence Of Macroalgae Influence The Growth Of Eastern Oysters?	Richmond Salon II
Harmyni Ball	The Effect of Pesticides on Soil Bacteria	Richmond Salon III
Madison Gulasky	Under Pressure! How Time Pressure Affects the Reading Comprehension Test Scores of High School Students	Richmond Salon IV
Madeline Miller	Developing a Method for Aquaculture of a Local Polychaete Worm to Replace Imported Bloodworms	Virginia Room A
William Ochoa	Using Food Waste to Produce Biogas	Virginia Room B
Layla Dawson	The Effect of Pesticides on Soybeans and Water Quality	Virginia Room D

9:40 - 9:55		
Barry Ewell	Determining LD50 of Gadolinium on a Population of Brine Shrimp	Commons Theater
Shawna Tarkington	Suck It Up! The Collection and Usable Return of Oil by Natural Sorbents in an Aqueous Environment	Richmond Salon I
Caroline Neale	Testing the Effectiveness of Different Removal Methods for <i>Phragmites australis</i>	Richmond Salon II
Libbie Hospodar	Examining Autochthonous Alternatives to Tropical Coconut Coir for Shoreline Engineering	Richmond Salon III
Amber Goens	BioCaching: A Study on Citizen Science	Richmond Salon IV
Taylor Allen	The Effect of Image Complexity and Color on Short-Term Memory Retention and Recall	Virginia Room A
Samantha McKenney	The Effect of Pacifier Usage on Speech Development	Virginia Room B
Tripp Walker	Has Redlining Had an Effect on Quality of Life in Low-Income Neighborhoods Today?	Virginia Room D

10:00 - 10:15		
Lily Brame	An Analysis of Gender Equality and National Success - Are You Happy, Healthy, and Wealthy?	Commons Theater
Aubrey Micket	Assessing Motivational Strategies for Teens to Increase Core Strengthening Exercise	Richmond Salon I
Alora Rohm	Alien Invasion: A Study of Allelopathic Effects of Japanese Honeysuckle (<i>Lonicera japonica</i>) and Kudzu (<i>Pueraria montana</i>) on Native Virginia Plants	Richmond Salon II
Taylor Logan	The Effect of Temperature Stress on the Filtration Rate of 3 Different Bivalves	Richmond Salon III
Lucy Vondra	The Effect of High and Low Energy Exercise on Memory	Richmond Salon IV
Joseph Scripture	The Differences in Size and Sex Ratio of Blue Crabs Caught in Open Rivers vs Creeks	Virginia Room A
Layanna Hayes	The Symphony of Sight and Sound: The Effects of Visual and Auditory Stimuli on Reading Retention and Focus	Virginia Room B
Laci Belvin	The Effects of Nitrate Pollution on the Filtration of Oysters	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		
Virginia Tribble	The Effects of RipRap on Species Richness and Diversity Compared to Natural Shorelines	Commons Theater
Arwen Kintz	Jaws! Fear or Fact: The Effect of Positive VS Negative Portrayals of Sharks on People's Dispositions Toward Them	Richmond Salon I
Marcus Fero	Zip it, Lock it, Put it in your Pocket: The Relationship Between Auditory Distractions and Reading Comprehension in the Classroom	Richmond Salon II
Tucker Webb	Finding a Renewable Electrical Conductor	Richmond Salon III
Camryn Micket	Fighting Global Warming's Evil Twin- A Study on Alkalinity and Calcium Buffering Capacity in the Lower Chesapeake Bay	Richmond Salon IV
Savana Balderson	The Effects of <i>Mycorrhizal</i> Fungi on the Plant Growth of Grass, Cress and Carrots	Virginia Room A
Anajah Owens	What is the Best Way in Drying Your Hands After Washing Them?	Virginia Room B
Tara Carter	Pollinators in Peril- Assessing Bird Predation on Catepillars	Virginia Room D

10:50 - 11:05		
Caitlin Murphy	Growing Green! Exploring the Use of Reclaimed Eutrophic Water for Growing Butterhead Lettuce (<i>Lactuca sativa</i> var. <i>capitata</i>) in a Hydroponic System	Commons Theater
Liam McDonough	A Comparison of Oyster, Shell and Rock Habitats	Richmond Salon I
Mason Welsh	Habitat Fragmentation and the Plight of Butterflies in Virginia	Richmond Salon II
Shay Velazquez	Beats and Books: The Effect of Various Genres of Background Music on Reading Comprehension	Richmond Salon III
Nathalie Biddlecomb	The Effect of Varying Baits used in Crab Pots on the Quality of Crabs Caught	Richmond Salon IV
Andrew Greve	Determining the Frequency of Erosive Wind Wave Conditions at OBX	Virginia Room A
Chris Miller	Touch to Kill: A Comparison of Copper, Copper Alloys, and Stainless Steel in Bacterial Contact-Killing Ability	Virginia Room B
Madison Hensley	Comparing Sister Cropping to Various Modern Fertilizers Indoor and Outdoor	Virginia Room D

11:10 - 11:25		
Bevan Ransone	Prevalence of Macroparasites with <i>Crassostrea virginica</i> in Varying Environmental Conditions	Commons Theater
Ailin Harpole	Assessing Reproductive Substrate Availability and Timing for the Chesapeake Stinging Nettle, <i>Chrysaora chesapeakii</i>	Richmond Salon I
Bailey Fones	The Effect Different Pharmaceuticals have on the Hatching and Survival of Brine Shrimp	Richmond Salon II
Davis Kildoo	A Cost-Based Risk Assessment of Climate Events for the Southeastern US	Richmond Salon III
Jenaya Cox	The Effect of Makeup Brush Cleaner on Bacteria	Richmond Salon IV
Carter Wood	Shuck It Out: The Effect of Depth Variation on Oyster Growth Using Aquaculture Techniques	Virginia Room A
Leah Medlin	Comparison of Agricultural and Forested Ponds	Virginia Room B
Brendan Kraisser	What Would You Do for a Klondike Bar? The Influence of Visual and Olfactory Stimuli on Adolescents' Degree of Risk-Taking	Virginia Room D

11:30 - 11:45		
Isaac Lamprecht	The Effect of a Warming World on Runners' Health and Performance	Commons Theater
Jon Wijnand	The Effect of Extreme Weather Factors on Coastal Erosion and Deposition	Richmond Salon I
Dylan McIlwain	Fine! Suture Self: The Effect of Suture Spacing on Continuous and Interrupted Suture Strength	Richmond Salon II
Emily Withers	Impact of Wheat Pesticides on the Beneficial Insect <i>Hippodamia convergens</i>	Richmond Salon III
Aimee Dunham	Plant Wars: Allopathic Effects of the Invasive Species <i>Phragmites australis</i> on Native Wetland Plants	Richmond Salon IV
Adelina Bowden	The Effect of Salt Type on Kimchi pH and Sugar and Salt Content	Virginia Room A
Aidan Sweeney	How to Detect AI Usage to Ensure Academic Integrity	Virginia Room B
Sarah McGee	The Effect of Different Lure Colors on Catch Rate	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 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 Assistant Professor, Virginia Commonwealth University*

Dr. Lin Chen, *Data Scientist, United States Defense Logistics Agency*

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

Mr. Eric Echard, *Mission Analyst, United States Department of the Navy; Former CBGS Faculty*

Dr. David Edwards, *Department of Statistical Sciences and Operations Research Chair, Statistics Professor, Virginia Commonwealth University*

Dr. Grayson Johnson, *Chemical Engineering Research Associate, University of Virginia; CBGS Alumnus*

Mr. Brian Kim, *Graduate Student, Virginia Institute of Marine Science*

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

Mr. Richard Moncure, *Director of S.T.R.E.A.M., St. Margaret's School*

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

Ms. Anna Poslednik, *Graduate Student, Virginia Institute of Marine Science*

Mx. Ja'Mel Reed, *Senior Associate Consultant, Bain and Company; CBGS Alumnus*

Ms. Erin Reilly, *Conservation and Restoration Coordinator, Virginia Institute of Marine Science*

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

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

Mr. David Wright, *Retired Educator of Marine & Environmental Science; Former CBGS Faculty*

University Student Commons

