

**32nd BLUE RIDGE HIGHLANDS REGIONAL SCIENCE FAIR
MARCH 3-4, 2023
RADFORD UNIVERSITY**

WINNERS OF SPECIAL AWARDS

AMERICAN ASSOCIATION FOR UNIVERSITY WOMEN

- 502 Emma Ebel
Testing Hand Sanitizer Alcohol Levels with Gas Chromatography
Southwest Virginia Governor's School
Sponsor: Jared Brown
- 505 Nyah Phipps
The Fuming of Cyanoacrylate to Identify Fingerprints
Southwest Virginia Governor's School
Sponsor: Jared Brown

**AMERICAN CHEMICAL SOCIETY
NORTHEASTERN TENNESSEE SECTION**

First Place

- 502 Emma Ebel
Testing Hand Sanitizer Alcohol Levels with Gas Chromatography
Southwest Virginia Governor's School
Sponsor: Jared Brown

Second Place

- 503 Maggie Minton
The Effects of Different Substances on Wood Relating to Flammability Properties
Southwest Virginia Governor's School
Sponsor: Jared Brown

Third Place

- 501 David Bowman
HHO Generators
Dayspring Christian Academy
Sponsor: Doug Bowman

**AMERICAN CHEMICAL SOCIETY
VIRGINIA BLUE RIDGE SECTION**

- 602 Charlotte Phillips
Investigating Degradation of Polyhydrocyalkanoate Drinking Straws in Freshwater and Saltwater Systems
George Wythe High School
Sponsor: Lucas Phillips

AMERICAN PSYCHOLOGICAL ASSOCIATION

- 201 Laken Barnette
Evaluating Comfort Levels in Teenage Patients When Talking to a Physician
Southwest Virginia Governor's School
Sponsor: Greg Riffe

**AMERICAN RED CROSS -- NEW RIVER VALLEY
SCIENCE IN SERVICE TO OUR COMMUNITIES**

- 402 Adalynn Turner
Effectiveness of a Pressurized Bandage Opposed to Traditional Dressings
Southwest Virginia Governor's School
Sponsor: Matt Frazier

AMERICAN SOCIETY OF MAMMALOGISTS

- 101 Jonathan Distler
Observed Behavioral Differences Among White-Tailed Deer Populations on Private vs Public Lands
Blacksburg High School
Sponsor: Katharine Davis

ASSOCIATION FOR WOMEN GEOSCIENTISTS

- 602 Charlotte Phillips
Investigating Degradation of Polyhydrocyalkanoate Drinking Straws in Freshwater and Saltwater Systems
George Wythe High School
Sponsor: Lucas Phillips

**BIOMEDICAL ENGINEERING AWARD
VIRGINIA TECH**

- 301 Mercy Akanmu
Differences In the Physical and Structural Changes During Microglial Activation in Pediatric and Adult Glioma Models
Blacksburg High School
Sponsor: Katharine Davis

GENIUS OLYMPIAD

- 602 Charlotte Phillips
Investigating Degradation of Polyhydroxyalkanoate Drinking Straws in Freshwater and Saltwater Systems
George Wythe High School
Sponsor: Lucas Phillips
- 603 Andrew Wang
Effects of Transcriptional Factor WUSCHEL on the Regeneration of Arabidopsis thaliana
Blacksburg High School
Sponsor: Katharine Davis

LEMELSON EARLY INVENTOR PRIZE

- 2201 Aviva Krum
Hay! The Quicker Picker Upper: Exploring Natural Methods of Cleaning Up Oil Spills
Krum Classical Academy
Sponsor: Marisa Krum

MOUNT TABOR RURITAN CLUB AWARDS

Junior Division

- 2201 Aviva Krum
Hay! The Quicker Picker Upper: Exploring Natural Methods of Cleaning Up Oil Spills
Krum Classical Academy
Sponsor: Marisa Krum
- 2204 Elizabeth Sarver
Stop That Dirt! (A Study of Erosion)
Classical Conversations
Sponsor: Judy Sarver

Senior Division

- 503 Maggie Minton
The Effects of Different Substances on Wood Relating to Flammability Properties
Southwest Virginia Governor's School
Sponsor: Jared Brown
- 601 James Paine
Testing the Efficacy of an Aquatic Aerator
Southwest Virginia Governor's School
Sponsor: Jared Brown
- 602 Charlotte Phillips
Investigating Degradation of Polyhydrocyalkanoate Drinking Straws in Freshwater and Saltwater Systems
George Wythe High School
Sponsor: Lucas Phillips

**NATIONAL AERONAUTICS AND SPACE ADMINISTRATION
EARTH SYSTEM SCIENCE AWARD**

- 902 Shane Dunford
The Cathodic Corrosion Protection Capabilities of Sacrificial Anodes in Coastal Areas
Southwest Virginia Governor's School
Sponsor: Jared Brown

**NATIONAL GEOGRAPHIC SOCIETY AWARD: THAT'S GEOGRAPHY!
CULTIVATING EMPATHY FOR THE EARTH**

- 602 Charlotte Phillips
Investigating Degradation of Polyhydrocyalkanoate Drinking Straws in Freshwater and Saltwater Systems
George Wythe High School
Sponsor: Lucas Phillips

NATIONAL OCEANIC AND ATMOSPHERIC ASSOCIATION

- 2201 Aviva Krum
Hay! The Quicker Picker Upper: Exploring Natural Methods of Cleaning Up Oil Spills
Krum Classical Academy
Sponsor: Marisa Krum

NATIONAL WEATHER SERVICE AWARD

2204 Elizabeth Sarver
Stop That Dirt! (A Study of Erosion)
Classical Conversations
Sponsor: Judy Sarver

OFFICE OF NAVAL RESEARCH DISTINGUISHED ACHIEVEMENT AWARDS

Junior Division

2304 Charlotte Ohanian
Virtually Un-hackable
Dawning Light Homeschool
Sponsor: John Ohanian

2306 Isaac Strom
Bro, Does Weight Even Matter?
Homeschool
Sponsor: Kyle Strom

Senior Division

307 Ariya Patel
A Novel Lateral Flow Immunoassay for the Detection of Parvovirus B19 Antigens in Urine
Southwest Virginia Governor's School
Sponsor: Rebecca Phillips

401 Sriya Sridhar
Utilizing Flow Cytometry to Evaluate the Sterilization of a 96 Well Plate Pipette Tips by the Opentrons Liquid Handling Robot
Blacksburg High School
Sponsor: Katharine Davis

602 Charlotte Phillips
Investigating Degradation of Polyhydroxyalkanoate Drinking Straws in Freshwater and Saltwater Systems
George Wythe High School
Sponsor: Lucas Phillips

**RADFORD UNIVERSITY SIGMA XI CHAPTER
DISTINGUISHED AWARD IN SCIENCE**

Junior Division

2304 Charlotte Ohanian
Virtually Un-hackable
Dawning Light Homeschool
Sponsor: John Ohanian

Senior Division

308 Andy Tawney
Repeat Lengths of RS3 Alleles Associated with the Rate of Health-Related Risky Behavior in Young Adults
Southwest Virginia Governor's School
Sponsor: Rebecca Phillips

REGENERON BIOMEDICAL SCIENCE AWARD

307 Ariya Patel
A Novel Lateral Flow Immunoassay for the Detection of Parvovirus B19 Antigens in Urine
Southwest Virginia Governor's School
Sponsor: Rebecca Phillips

**RICOH CORPORATION
SUSTAINABLE DEVELOPMENT AWARD**

602 Charlotte Phillips
Investigating Degradation of Polyhydroxyalkanoate Drinking Straws in Freshwater and Saltwater Systems
George Wythe High School
Sponsor: Lucas Phillips

SOCIETY FOR IN VITRO BIOLOGY

401 Sriya Sridhar
Utilizing Flow Cytometry to Evaluate the Sterilization of a 96 Well Plate Pipette Tips by the OpenTrons Liquid Handling Robot
Blacksburg High School
Sponsor: Katharine Davis

THERMO FISHER SCIENTIFIC JUNIOR INNOVATORS AWARD

- 2201 Aviva Krum
Hay! The Quicker Picker Upper: Exploring Natural Methods of Cleaning Up Oil Spills
Krum Classical Academy
Sponsor: Marisa Krum
- 2204 Elizabeth Sarver
Stop That Dirt! (A Study of Erosion)
Classical Conversations
Sponsor: Judy Sarver
- 2304 Charlotte Ohanian
Virtually Un-hackable
Dawning Light Homeschool
Sponsor: John Ohanian
- 2306 Isaac Strom
Bro, Does Weight Even Matter?
Homeschool
Sponsor: Kyle Strom

UNITED STATES AGENCY FOR INTERNATIONAL DEVELOPMENT AWARD

- 501 David Bowman
HHO Generators
Dayspring Christian Academy
Sponsor: Doug Bowman

UNITED STATES AIR FORCE AWARD

- 301 Mercy Akanmu
Differences In the Physical and Structural Changes During Microglial Activation in Pediatric and Adult Glioma Models
Blacksburg High School
Sponsor: Katharine Davis
- 307 Ariya Patel
A Novel Lateral Flow Immunoassay for the Detection of Parvovirus B19 Antigens in Urine
Southwest Virginia Governor's School
Sponsor: Rebecca Phillips

803 Jesse Dulaney
Anti-Lock Brakes Applied to a Bicycle
Southwest Virginia Governor's School
Sponsor: Matt Frazier

1002 Davis Reitzel
Exploring Collatz Conjecture
Southwest Virginia Governor's School
Sponsor: Greg Riffe

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY LETTER

601 James Paine
Testing the Efficacy of an Aquatic Aerator
Southwest Virginia Governor's School
Sponsor: Jared Brown

602 Charlotte Phillips
Investigating Degradation of Polyhydrocyalkanoate Drinking Straws in Freshwater and Saltwater Systems
George Wythe High School
Sponsor: Lucas Phillips

UNITED STATES METRIC ASSOCIATION

802 Zack Craighead
Comparing a DIY Lux Meter to Its Commercial Equivalent
Southwest Virginia Governor's School
Sponsor: Matt Frazier

UNITED STATES STOCKHOLM JUNIOR WATER PRIZE

601 James Paine
Testing the Efficacy of an Aquatic Aerator
Southwest Virginia Governor's School
Sponsor: Jared Brown

602 Charlotte Phillips
Investigating Degradation of Polyhydrocyalkanoate Drinking Straws in Freshwater and Saltwater Systems
George Wythe High School
Sponsor: Lucas Phillips

VCOM-VIRGINIA PUBLIC HEALTH AND HEALTHCARE AWARD

Junior Division

First Place

2202 Rachel Peets
To Mold, or Not to Mold, That is the Question
Classical Christian Academy
Sponsor: Janet Peets

Second Place

2105 Annelyse Farmer
What Makes Ice Melt Fastest
Homeschool
Sponsor: Chris Farmer

Third Place

2106 Michael Motes
What Makes Ice Melt the Fastest
Twin Valley Elementary and Middle School
Sponsor: Sarah Motes

Honorable Mention

2108 Jacelyn Peak
Will It Plastic
Twin Valley Elementary and Middle School
Sponsor: Felicia Peak

Senior Division

First Place

302 Hope Banks
Overdose Mortality Rates and the Correlation with Poverty Levels and Populations of Persons Drawing from SSDI or SSI in West Virginia
Southwest Virginia Governor's School
Sponsor: Megan Arnold

Second Place

308 Andy Tawney
Repeat Lengths of RS3 Alleles Associated with the Rate of Health-Related Risky Behavior in Young Adults
Southwest Virginia Governor's School
Sponsor: Rebecca Phillips

Third Place

205 Neal Jones

Does Informing Teens on Eye Health Change How They Take Care of Their Eyes?

Southwest Virginia Governor's School

Sponsor: Sam Muriello

Honorable Mention

209 Jack Wilder

Testing the Public's Knowledge About Commonly Foraged Mushrooms

Southwest Virginia Governor's School

Sponsor: Sherry Pugh

VIRGINIA LAKES AND WATERSHEDS

Junior Division

2201 Aviva Krum

Hay! The Quicker Picker Upper: Exploring Natural Methods of Cleaning Up Oil Spills

Krum Classical Academy

Sponsor: Marisa Krum

Senior Division

601 James Paine

Testing the Efficacy of an Aquatic Aerator

Southwest Virginia Governor's School

Sponsor: Jared Brown

VIRGINIA STOCKHOLM JUNIOR WATER PRIZES

601 James Paine

Testing the Efficacy of an Aquatic Aerator

Southwest Virginia Governor's School

Sponsor: Jared Brown

602 Charlotte Phillips

Investigating Degradation of Polyhydrocyalkanoate Drinking Straws in Freshwater and Saltwater Systems

George Wythe High School

Sponsor: Lucas Phillips

YALE SCIENCE AND ENGINEERING ASSOCIATION AWARD

- 401 Sriya Sridhar
Utilizing Flow Cytometry to Evaluate the Sterilization of a 96 Well Plate Pipette Tips by the Openrons Liquid Handling Robot
Blacksburg High School
Sponsor: Katharine Davis

EMORY AND HENRY SCHOLARSHIP

- 1002 Davis Reitzel
Exploring Collatz Conjecture
Southwest Virginia Governor's School
Sponsor: Greg Riffe

FERRUM COLLEGE SCHOLARSHIP

- 301 Mercy Akanmu
Differences In the Physical and Structural Changes During Microglial Activation in Pediatric and Adult Glioma Models
Blacksburg High School
Sponsor: Katharine Davis

NEW RIVER COMMUNITY COLLEGE SCHOLARSHIP

- 301 Mercy Akanmu
Differences In the Physical and Structural Changes During Microglial Activation in Pediatric and Adult Glioma Models
Blacksburg High School
Sponsor: Katharine Davis

RADFORD UNIVERSITY SCHOLARSHIP

- 309 Eli Wiscarson
Comparing Giles to Other Counties by Location and Population
Southwest Virginia Governor's School
Sponsor: Sam Muriello
- 1101 Jessica Long
Ultrasonic Cleaning Versus FDA Approved Hand Washing Method on Cooking Equipment
Southwest Virginia Governor's School
Sponsor: Jared Brown

WYTHEVILLE COMMUNITY COLLEGE SCHOLARSHIP

203 Caoilainn Christensen
Comparative Content Engagement Analysis of Credentialed and Non-Credentialed Nutrition Professionals on Instagram
Blacksburg High School
Sponsor: Katharine Davis