

**28<sup>h</sup> Annual Blue Ridge Highlands Regional Science Fair  
March 8 - 9, 2019 – Radford University**

**AWARDS BY SPECIAL AWARDS**

**AMERICAN ASSOCIATION FOR UNIVERSITY WOMEN**

- 1002 Claire Morton  
***The Relationship Between Codon Usage Bias, mRNA Half-Life, and the Ste13 Protein***  
Blacksburg High School  
Sponsor: Katharine Davis
- 1003 Raaga Vullikanti  
***Peptide Nucleic Acids as Potential Designer Antimicrobials***  
Blacksburg High School  
Sponsor: Katharine Davis

**AMERICAN CHEMICAL SOCIETY  
NORTHEASTERN TENNESSEE SECTION**

*First Place*

- 509 Rose Tomiak  
***Analyzing the Difference in the Sorption Concentrations of Copper, Lead, Iron, and Zinc in Polylactic Acid and High Density Polyethylene Plastic Bags***  
Southwest Virginia Governor's School  
Sponsor: Jared Brown

*Second Place*

- 501 Makayla Goines  
***Electrochemical Detection of Salicylates in Pepto-Bismol and Bug Guard SPF 30 Sunscreen***  
Southwest Virginia Governor's School  
Sponsor: Jared Brown

*Third Place*

- 506 Kelsey Morrell  
***Comparing Phosphorus Concentration in Applesauce Packaged in Glass and Plastic Packaging to Find the Presence of Plasticizers***  
Southwest Virginia Governor's School  
Sponsor: Jared Brown

**AMERICAN CHEMICAL SOCIETY  
VIRGINIA BLUE RIDGE SECTION**

- 504 Isabel Hendrix  
***The Fate and Transport of Triclosan in Rural Receiving Streams***  
Southwest Virginia Governor's School  
Sponsor: Jared Brown

**AMERICAN METEOROLOGICAL SOCIETY AWARD**

- 1103 Curtis Case  
***Assessing and Predicting Levels of Ambient Light Pollution in Wythe County***  
Southwest Virginia Governor's School  
Sponsor: Matthew Frazier
- 605 Virginia Worrell  
***Investigating Coral's Appetite for Plastic***  
Southwest Virginia Governor's School  
Sponsor: Rebecca Phillips

**AMERICAN PSYCHOLOGICAL ASSOCIATION**

- 210 Asha Thomas  
***The Association of Oxytocin Receptor Gene Variant rs53576 with Optimism and Pessimism***  
Southwest Virginia Governor's School  
Sponsor: Rebecca Phillips

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

- 301 Michael Chen  
***Role of EphA4 Gene in Vascular Gene Expression During Inflammation***  
Blacksburg High School  
Sponsor: Katharine Davis

**AMERICAN SOCIETY OF MAMMALOGISTS**

- 101 Isabelle Hollars  
***Comparing Levels of Clostridiaceae Abundance in Equines at High-Risk vs. Low-Risk for Laminitis***  
Southwest Virginia Governor's School  
Sponsor: Rebecca Phillips

## ASM EDUCATION FOUNDATION

- 804 Tyler Kwak  
***Testing the Shear Strength of Concrete When Cornstarch is Added***  
Southwest Virginia Governor's School  
Sponsor: Matthew Frazier

## ASSOCIATION FOR WOMEN GEOSCIENTISTS

- 604 Ainsley LaPlante  
***Effects of Gasoline on RGB Values of Montipora capricornis and Pavona frondifera Corals***  
Southwest Virginia Governor's School  
Sponsor: Jared Brown

## BIOMEDICAL ENGINEERING AWARD VIRGINIA TECH

- 401 Alexandra Barrett  
***Velocity Limiting Exoskeleton for Children with Cerebral Palsy***  
Southwest Virginia Governor's School  
Sponsor: Matthew Frazier

## BROADCOM MASTERS AWARDS

- 2010 Janalyn Vance  
***Suck it Up!***  
Wallace Middle School  
Sponsor: Albert Vance II
- 2011 Caedmon Williams  
***The Ultimate Stain Remover***  
Classical Conversations  
Sponsor: Nichole Williams
- 2103 Aiden Stout  
***Defeat the Graffiti – Testing Different Solvents to Remove Graffiti***  
Graham Middle School  
Sponsor: Catherine Evans
- 2201 Caroline Keene  
***May the Magnetic Force Be With You***  
Richlands Middle School  
Sponsor: Kim Lawson

2301 Caleb Ohanian  
***Best By A Long Shot***  
Classical Conversations  
Sponsor: John Ohanian

2501 Luke Coburn  
***Oily Killer***  
Classical Conversations  
Sponsor: Peggy Coburn

## GENIUS OLYMPIAD

603 Haley Freeborn  
***Assessment of Campsite Sustainability Along the Pacific Crest Corridor in Desolation Wilderness, California***  
Blacksburg High School  
Sponsor: Katharine Davis

604 Ainsley LaPlante  
***Effects of Gasoline on RGB Values of Montipora capricornis and Pavona frondifera Corals***  
Southwest Virginia Governor's School  
Sponsor: Jared Brown

## INTEL EXCELLENCE IN COMPUTER SCIENCE AWARD

1302 Brandon Fan  
***An AI-based System for Discovering Potential Adverse Drug Events Using Open Data***  
Blacksburg High School  
Sponsor: Katharine Davis

## MANUFACTURING TECHNOLOGY CENTER AWARD

805 Kathleen Reuwer  
***Reduction of Hydrogen Porosity in Aluminum Welding with Vibratory Methods***  
Southwest Virginia Governor's School  
Sponsor: Jared Brown

## MOUNT TABOR RURITAN AWARDS

- 2103 Aiden Stout  
***Defeat the Graffiti – Testing Different Solvents to Remove Graffiti***  
Graham Middle School  
Sponsor: Catherine Evans
- 2204 Molly Jones  
***What Wood You Use***  
Graham Middle School  
Sponsor: Deborah Mason
- 603 Haley Freeborn  
***Assessment of Campsite Sustainability Along the Pacific Crest Corridor in Desolation Wilderness, California***  
Blacksburg High School  
Sponsor: Katharine Davis
- 605 Virginia Worrell  
***Investigating Coral's Appetite for Plastic***  
Southwest Virginia Governor's School  
Sponsor: Rebecca Phillips

## MU ALPHA THETA

- 1303 Josh Tomiak  
***Testing the Effectiveness of the Josephus Problem as a Pseudorandom Number Generator***  
George Wythe High School  
Sponsor: Lisa Vaught

## NASA EARTH SYSTEM SCIENCE AWARD

- 604 Ainsley LaPlante  
***Effects of Gasoline on RGB Values of Montipora capricornis and Pavona frondifera Corals***  
Southwest Virginia Governor's School  
Sponsor: Jared Brown

## NATIONAL OCEANIC AND ATMOSPHERIC ASSOCIATION

- 103 Morgan Ralph  
***The Effect of Humidity on the Madagascar Hissing Cockroach Reproduction Cycle***  
Southwest Virginia Governor's School  
Sponsor: Rebecca Phillips

## NATIONAL WEATHER SERVICE AWARD

- 1103 Curtis Case  
***Assessing and Predicting Levels of Ambient Light Pollution in Wythe County***  
Southwest Virginia Governor's School  
Sponsor: Matthew Frazier

## OFFICE OF NAVAL RESEARCH AWARDS DISTINGUISHED ACHIEVEMENT AWARDS

- 502 Grace Greenwood  
***Titration versus Photometric Measurements Determining Chlorine Concentrations***  
Southwest Virginia Governor's School  
Sponsor: Heather Lowe
- 702 Ross Brown  
***Different Projectile Materials Affecting Propulsion in a Prototype Electromagnetic Projectile Launcher***  
Southwest Virginia Governor's School  
Sponsor: Matthew Frazier
- 2301 Caleb Ohanian  
***Best By A Long Shot***  
Classical Conversations  
Sponsor: John Ohanian
- 2302 Charlotte Phillips  
***Investigating Different Styles of Non-g geared Tuning Pegs for Use in Violin Scrolls***  
Scott Memorial Middle School  
Sponsor: Lucas Phillips

## RADFORD UNIVERSITY SIGMA XI CHAPTER DISTINGUISHED AWARD IN SCIENCE

- 507 Anya Robbins  
***Testing for Triclosan in Water Bottles with Plasticizers Using LC-MS/MS***  
Southwest Virginia Governor's School  
Sponsor: Jared Brown

2302 Charlotte Phillips  
***Investigating Different Styles of Non-g geared Tuning Pegs for Use in Violin Scrolls***  
Scott Memorial Middle School  
Sponsor: Lucas Phillips

## REGENERON SCIENCE TALENT SEARCH

403 Alice Xu  
***SimpleChip: A Microfluidic Device for Accessible ChIP-seq***  
Blacksburg High School  
Sponsor: Katharine Davis

603 Haley Freeborn  
***Assessment of Campsite Sustainability Along the Pacific Crest Corridor in Desolation Wilderness, California***  
Blacksburg High School  
Sponsor: Katharine Davis

703 Adam Downs  
***Parallel Parking Device***  
Southwest Virginia Governor's School  
Sponsor: Matthew Frazier

1001 Solace Church  
***Sweetener Effects on Fermentation Rate in Kombucha***  
Southwest Virginia Governor's School  
Sponsor: Rebecca Phillips

1302 Brandon Fan  
***An AI-based System for Discovering Potential Adverse Drug Events Using Open Data***  
Blacksburg High School  
Sponsor: Katharine Davis

## RICOH CORPORATION SUSTAINABLE DEVELOPMENT AWARD

801 Isabella Burgoyne  
***Testing Oil Absorption of a Cellulose Barrier on Cardboard***  
Southwest Virginia Governor's School  
Sponsor: Jared Brown

## SOCIETY FOR IN VITRO BIOLOGY

- 1002 Claire Morton  
***The Relationship Between Codon Usage Bias, mRNA Half-Life, and the Ste13 Protein***  
Blacksburg High School  
Sponsor: Katharine Davis

## STOCKHOLM JUNIOR WATER PRIZE

- 504 Isabel Hendrix  
***The Fate and Transport of Triclosan in Rural Receiving Streams***  
Southwest Virginia Governor's School  
Sponsor: Jared Brown
- 604 Ainsley LaPlante  
***Effects of Gasoline on RGB Values of Montipora capricornis and Pavona frondifera Corals***  
Southwest Virginia Governor's School  
Sponsor: Jared Brown
- 605 Virginia Worrell  
***Investigating Coral's Appetite for Plastic***  
Southwest Virginia Governor's School  
Sponsor: Rebecca Phillips

## U.S. AIR FORCE DISTINGUISHED ACHIEVEMENT AWARDS

- 301 Michael Chen  
***Role of EphA4 Gene in Vascular Gene Expression During Inflammation***  
Blacksburg High School  
Sponsor: Katharine Davis
- 702 Ross Brown  
***Different Projectile Materials Affecting Propulsion in a Prototype Electromagnetic Projectile Launcher***  
Southwest Virginia Governor's School  
Sponsor: Matthew Frazier
- 805 Kathleen Reuwer  
***Reduction of Hydrogen Porosity in Aluminum Welding with Vibratory Methods***  
Southwest Virginia Governor's School  
Sponsor: Jared Brown



- 1303 Josh Tomiak  
***Testing the Effectiveness of the Josephus Problem as a Pseudorandom Number Generator***  
George Wythe High School  
Sponsor: Lisa Vaught

### U. S. METRIC ASSOCIATION

- 804 Tyler Kwak  
***Testing the Shear Strength of Concrete When Cornstarch is Added***  
Southwest Virginia Governor's School  
Sponsor: Matthew Frazier

### VIRGINIA DENTAL AWARDS

- 103 Morgan Ralph  
***The Effect of Humidity on the Madagascar Hissing Cockroach Reproduction Cycle***  
Southwest Virginia Governor's School  
Sponsor: Rebecca Phillips
- 301 Michael Chen  
***Role of EphA4 Gene in Vascular Gene Expression During Inflammation***  
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- 509 Rose Tomiak  
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Sponsor: Jared Brown
- 1002 Claire Morton  
***The Relationship Between Codon Usage Bias, mRNA Half-Life, and the Ste13 Protein***  
Blacksburg High School  
Sponsor: Katharine Davis

### VIRGINIA DENTAL GRAND AWARD

- 702 Ross Brown  
***Different Projectile Materials Affecting Propulsion in a Prototype Electromagnetic Projectile Launcher***  
Southwest Virginia Governor's School  
Sponsor: Matthew Frazier

## VIRGINIA LAKES AND WATERSHEDS

- 504 Isabel Hendrix  
***The Fate and Transport of Triclosan in Rural Receiving Streams***  
Southwest Virginia Governor's School  
Sponsor: Jared Brown
- 1203 Sophia Link  
***The Role of the IPK1 and ITPK1 Genes in Plant Sucrose Sensing***  
Blacksburg High School  
Sponsor: Katharine Davis
- 2102 Bryce Havens  
***The PHacts of Life: Cleaning Water with Flocculation and Filtration***  
Graham Middle School  
Sponsor: Catherine Evans

## YALE SCIENCE AND ENGINEERING ASSOCIATION AWARD

- 403 Alice Xu  
***SimpleChip: A Microfluidic Device for Accessible ChIP-seq***  
Blacksburg High School  
Sponsor: Katharine Davis

## EMORY AND HENRY SCHOLARSHIP

- 301 Michael Chen  
***Role of EphA4 Gene in Vascular Gene Expression During Inflammation***  
Blacksburg High School  
Sponsor: Katharine Davis

## NEW RIVER COMMUNITY COLLEGE SCHOLARSHIP

- 1301 Nicholas Cooney  
***The Effects of Elliptic Curve Cryptography on the Efficiency of Consumer Grade Backup Encryption***  
Southwest Virginia Governor's School  
Sponsor: Greg Riffe

## RADFORD UNIVERSITY SCHOLARSHIP

- 403 Alice Xu  
***SimpleChip: A Microfluidic Device for Accessible ChIP-seq***  
Blacksburg High School  
Sponsor: Katharine Davis
- 1002 Claire Morton  
***The Relationship Between Codon Usage Bias, mRNA Half-Life, and the Ste13 Protein***  
Blacksburg High School  
Sponsor: Katharine Davis

## WYTHEVILLE COMMUNITY COLLEGE SCHOLARSHIP

- 802 Sarah Elmasry  
***Using Casein Along with Other Natural Food Products to Make Teeth Appear More Visibly White***  
Southwest Virginia Governor's School  
Sponsor: Greg Riffe