

**26th Annual Blue Ridge Highlands
Regional Science Fair
March 3 - 4, 2017 – Radford University**

CATEGORY AWARDS

Grand Award Winners

- 803 Kaelum Hasler
Post Consumer PET as Stock for Additive Manufacturing
Blacksburg High School
Sponsor: Katharine Davis
- 402 Morgan Fisher and Carly Porter
ACTN3, ACE, PPARD, and Outside Factors Influencing High School Male Athletes' Choice to Pursue a Sport
Southwest Virginia Governor's School
Sponsor: Rebecca Phillips

Grand Award Alternate

- 404 Audra White
Variation in Lung Volumes of Non-Smokers, Smokers of Conventional Cigarettes, and Smokers of Electronic Cigarettes
Southwest Virginia Governor's School
Sponsor: Rebecca Phillips

Senior Division

ANIMAL SCIENCES

First Place

- 104 Senah Stephens
The Effect of Clipping Udder Hair on Somatic Cell Counts in Dairy Cattle
Southwest Virginia Governor's School
Sponsor: Krista Stith

Second Place

101 Kadie Hudson

Genetic variants present in Haematobia irritans among high carrier and low carrier dairy cattle

Southwest Virginia Governor's School

Sponsor: Rebecca Phillips

Third Place

105 Ty Stephenson

Effects of coal mining related contaminants on a mussel, Lamsilis fasciola

Blacksburg High School

Sponsor: Katharine Davis

Honorable Mention

102 Hunter Shelton

Comparison of Game Calling Techniques for Eastern Wild Turkey (Meleagris gallopavo silvestris) in Southwest Virginia

Richlands High School

Sponsor: Tiffany Stillwell

BEHAVIORAL AND SOCIAL SCIENCES

First Place

203 Mary Brown

The Prototypes of Good and Bad in Children

Southwest Virginia Governor's School

Sponsor: Greg Riffe

Second Place

207 Griffin McAvoy

An Analysis of the Predictability of Dance Music Chart Success Based on Specific Musical Parameters

Tazewell High School

Sponsor: Greg Deskins

Third Place

204 Tara Call and Hunter Call

The Power of Suggestion: Testing the Reliability of Eyewitness Testimony

Richlands High School

Sponsor: Melissa Addison

Honorable Mention

205 Hunter Hall

How Politics and Generational Differences Affect a Person's Philosophy

Southwest Virginia Governor's School

Sponsor: Sherry Pugh

**BIOCHEMISTRY
COMPUTATIONAL BIOLOGY AND BIOINFORMATICS
PLANT SCIENCES**

First Place

302 Andrew Caudill

Constructing a Connectivity Map: Linking Genes Associated with Type 2 Diabetes Using Genome Databases

Southwest Virginia Governor's School

Sponsor: Rebecca Phillips

Second Place

305 Saumya Sharman

Bioinformatics Analysis of Signaling Pathways in HER2+ Breast Cancer

Southwest Virginia Governor's School

Sponsor: Krista Stith

Third Place

303 Hollie Eggleston

Kale Plant Growth with the Addition of Different Amounts of Calcium

Southwest Virginia Governor's School

Sponsor: Krista Stith

Honorable Mention

301 Madison Brown

Liquid vs. Granular Pool Shock on Effectiveness of Algae Eradication

Southwest Virginia Governor's School

Sponsor: Krista Stith

**BIOMEDICAL AND HEALTH SCIENCES
CELL & MOLECULAR BIOLOGY**

First Place

404 Audra White

Variation in Lung Volumes of Non-Smokers, Smokers of Conventional Cigarettes, and Smokers of Electronic Cigarettes

Southwest Virginia Governor's School

Sponsor: Rebecca Phillips

Second Place

402 Morgan Fisher and Carly Porter

ACTN3, ACE, PPARD, and Outside Factors Influencing High School Male Athletes' Choice to Pursue a Sport

Southwest Virginia Governor's School

Sponsor: Rebecca Phillips

Third Place

403 Brittany Stiefel

An Investigation of Antibiotic Resistance Surrounding Veterinary Facilities

Southwest Virginia Governor's School

Sponsor: Krista Stith

Honorable Mention

401 Xavia Arnold

Survey for Current and Prospective Parents on Genetically Modifying Children

Southwest Virginia Governor's School

Sponsor: Rebecca Phillips

CHEMISTRY

First Place

503 Dawson Michel Little

The Effect of Pure Vegetable Oils on the Quality of Biodiesel Fuel

Southwest Virginia Governor's School

Sponsor: Jared Brown

Second Place

504 Leslie Martin

Effect of Cooking Temperature on Caloric Value

Southwest Virginia Governor's School

Sponsor: Jared Brown

Third Place

501 Cheyenne Bidlack

Identification of Metallic Ions in Various Tattoo Inks by Flame Test

Richlands High School

Sponsor: Tiffany Stillwell

Honorable Mention

502 Danielle Damron and Hailey Mullins

Growing Crystals

Richlands High School

Sponsor: Tiffany Stillwell

EARTH & ENVIRONMENTAL SCIENCE

First Place

603 Olivia Smoot

Phytoremediation of Zinc Sulfate Using Hyperaccumulating Sunflowers in a Hydroponic System

Southwest Virginia Governor's School

Sponsor: Krista Stith

Second Place

602 Eleanor Ozer

The Bioremediation of Copper and Lead by Saccharomyces cerevisiae

Southwest Virginia Governor's School

Sponsor: Krista Stith

Third Place

604 Grace Turner

The Effects of Acidified Simulated Seawater on Mollusk Shells

Blacksburg High School

Sponsor: Ben Turner

Honorable Mention

601 Brittany Hess

Are There Dangerous Amounts of Lead Along the Clinch?

Richlands High School

Sponsor: Tiffany Stillwell

**EMBEDDED SYSTEMS
ROBOTICS AND INTELLIGENT MACHINES
SYSTEMS SOFTWARE**

First Place

702 Joseph Nielson

Integration of data science and Google Sheets in Lemonade Stand

Point-of-Sale web app

Southwest Virginia Governor's School

Sponsor: Richard Fisher

Second Place

703 Patrick Thomas

Deciduous Tree Leaf Recognition with Artificial Neural Networks: Year 2

Southwest Virginia Governor's School

Sponsor: Richard Fisher

Third Place

701 Collin Gray

The Effects of Different CPU Core Counts and Clock Speed on Performance

Southwest Virginia Governor's School

Sponsor: Richard Fisher

Honorable Mention

704 Nicholas Wyers

Making an educational VR recreation of history

Blacksburg High School

Sponsor: Katharine Davis

**ENGINEERING MECHANICS
ENVIRONMENTAL ENGINEERING**

First Place

803 Kaelum Hasler

Post Consumer PET as Stock for Additive Manufacturing

Blacksburg High School

Sponsor: Katharine Davis

Second Place

805 Isaac Payne

Improved Aerodynamic Camper Device

Southwest Virginia Governor's School

Sponsor: Greg Riffe

Third Place

801 Ross Brown

Engineering a Magnetic Projectile Launcher Prototype

George Wythe High School

Sponsor: Delores Craig

Honorable Mention

802 Owen Hall

Magnetic Torque Generator

Southwest Virginia Governor's School

Sponsor: Matthew Frazier

MATHEMATICS

First Place

904 Alexander Tomiak

Determining the Accuracy of SIR Modeling to Predict Movie Popularity

Southwest Virginia Governor's School

Sponsor: Sherry Pugh

Second Place

903 William Mahaney

Using Kenken Puzzles to Strengthen RSA Encryption

Southwest Virginia Governor's School

Sponsor: Greg Riffe

Third Place

901 Samuel Coulson

The Economic Situation of Radford, Virginia and Its Connectedness to Blacksburg, Virginia

Southwest Virginia Governor's School

Sponsor: Greg Riffe

MICROBIOLOGY

First Place

1005 Simonne Guenette

The Role of Trehalose in Heat Resistant Mycobacterium avium

Blacksburg High School

Sponsor: Katharine Davis

Second Place

1002 Joseph Carman

Pigs, potential transmitters? Clostridium difficile and pigs in southwest Virginia

Southwest Virginia Governor's School

Sponsor: Krista Stith

Third Place

1003 Madelena Eifert

The Effect of Cavitation Bubbles on Non-pathogenic E. coli on an Ice Cream Scoop

Southwest Virginia Governor's School

Sponsor: Krista Stith

Honorable Mention

1006 Stevie Lowe

Comparisons of Antibacterial Activity of Skin Secretions of a Frog and Salamanders

Southwest Virginia Governor's School
Sponsor: Krista Stith

Junior Division

ANIMAL SCIENCES BIOMEDICAL AND HEALTH SCIENCES

First Place

1102 Chloe Vaughn

Dancers Defying Dizziness

Galax High School

Sponsor: Taylor Edwards

Second Place

1103 Darrah Young and Macy McBride

Can You See Me Now?

Graham Middle School

Sponsor: Catherine Evans

Third Place

1101 Hannah Hass

Come Chick This Out

Graham Middle School

Sponsor: Catherine Evans

BEHAVIORAL AND SOCIAL SCIENCES

First Place

1203 Kailynn Roberts

Brain and Memory Mnemonics

Galax High School

Sponsor: Kathryn Pakkidis

Second Place

1201 Tina Huang

Which type of paper helps produce the quickest writing?

Tazewell Middle School

Sponsor: Katherine Claytor

Third Place

1202 Abigail Musick and Seth Scarbrough

Does Gender Influence Personality?

Wallace Middle School

Sponsor: Shannon Mutter

CHEMISTRY

First Place

1304 Simran Rosborough

Disappearing Stains or Not?

Classical Conversations

Sponsor: Rani Rosborough

Second Place

1301 Jonathan Collier

The Bitter, the Sweet, and the Teeth

Tazewell Middle School

Sponsor: Katherine Claytor

Third Place

1302 Shraddha Patel

On Your Mark, Get Set, RUST!

Graham Middle School

Sponsor: Catherine Evans

Honorable Mention

1306 Mary Ruth Williams

Disappearing Wax

Classical Conversations

Sponsor: David Williams

Honorable Mention

1303 Brooke Ramey

What's in Your Drinking Water?

Riverview Elementary/Middle School

Sponsor: Kay Ratliff

**EARTH & ENVIRONMENTAL SCIENCE
ENERGY: CHEMICAL
ENGINEERING MECHANICS
MATERIALS SCIENCE**

First Place

1405 Josh Tomiak

Warren Truss vs. Howe Truss – Which Bridge is Stronger?

Scott Memorial Middle School

Sponsor: April Schmidt

Second Place

1401 Caleb Christian

A Battery That Makes "Cents"

Tazewell Middle School

Sponsor: Katherine Claytor

Third Place

1403 Bryce Havens

I'm Having a Septic Breakdown

Graham Middle School

Sponsor: Catherine Evans

Honorable Mention

1406 Nicholas Ward and Donovan Nelson

Hovercrafts, are they doing it right?

Wallace Middle School

Sponsor: Shannon Mutter

Honorable Mention

1404 Nathan Sexton

How Hydraulics Works

Tazewell Middle School

Sponsor: Katherine Claytor

PLANT SCIENCES

First Place

1502 Ryan Meade

To Angle or Not to Angle

Richlands Middle School

Sponsor: Kim Lawson

Second Place

1501 Emily Espinoza

What Substances Affect Plant Growth?

Galax High School

Sponsor: Kathryn Pakkidis