

**2013 Blue Ridge Highlands Regional Science Fair
March 8 - 9, 2013 – Radford University**

AWARDS BY CATEGORY

GRAND AWARDS

GRAND AWARD WINNERS

- 603 Kuhn, Jordan and Eric Chang
Designing, Prototyping, and Testing Agricultural Drones
Southwest Virginia Governor's School/Christiansburg High School
Adult Sponsor: Kenneth Abel
- 703 Quesenberry, Thomas
Electrostatic Layer-By-Layer Self-Assembly of Antimicrobial Films
Southwest Virginia Governor's School/Pulaski County High School
Adult Sponsor: Jared Brown

GRAND AWARD WINNER ALTERNATE

- 205 Makarova, Anna
How Breathing Affects Singing
Southwest Virginia Governor's School/Christiansburg High School
Adult Sponsor: Sherry Pugh

SENIOR DIVISION

ANIMAL SCIENCES (AS): 100

First Place

- 103 Smith, Mary
Dairy Cattle Breed Effect on Yogurt Quality
Southwest Virginia Governor's School/Pulaski County High School
Adult Sponsor: Rebecca Phillips

Second Place

- 101 Kennedy, Treasure, Josh Moore, and Startia Rife
Icky Mouse
Richlands High School
Adult Sponsor: Tiffany Stillwell

Third Place

102 Krafft, Cantley
Feeding Habits of Bass During Winter on the New River
Southwest Virginia Governor's School/Pulaski County High School
Adult Sponsor: Gregory Riffe

BEHAVIORAL AND SOCIAL SCIENCES (BE): 200

First Place

205 Makarova, Anna
How Breathing Affects Singing
Southwest Virginia Governor's School/Christiansburg High School
Adult Sponsor: Sherry Pugh

Second Place

201 Burchett, Morgan
The Most Effective Learning Style of Fifth Grade Students
Southwest Virginia Governor's School/Pulaski County High School
Adult Sponsor: Sherry Pugh

Third Place

208 Peters, Sarah
The Accuracy of the Perception of a Calorie Between Teens and Adults
Southwest Virginia Governor's School/Christiansburg High School
Adult Sponsor: Gregory Riffe

Honorable Mention

209 Schafer, Cole
The Political Interests and Opinions of College Students
Southwest Virginia Governor's School/Radford High School
Adult Sponsor: Sherry Pugh

Honorable Mention

210 Setareh, Daniel
The Effect of Weather Upon Localized Trading Behavior in a Modern Age
Southwest Virginia Governor's School/Blacksburg High School
Adult Sponsor: Gregory Riffe

BIOCHEMISTRY (BI) AND CHEMISTRY (CH): 300

First Place

301 Duncan, Taylor
Effects of Autoclaving on Suture Material
Southwest Virginia Governor's School/Pulaski Country High School
Adult Sponsor: Gregory Riffe

Second Place

304 Pauli, Joseph
Calorie Content in Public School Food vs. Fast Food
Southwest Virginia Governor's School/Christiansburg High School
Adult Sponsor: Jared Brown

Third Place

302 Massaro, Briana
Determination of Polyphenols by Making Modified Carbon Paste Electrodes
Southwest Virginia Governor's School/Giles County High School
Adult Sponsor: Jared Brown

Honorable Mention

305 Sarver, Joseph
Electrochemical Biosensor for the Detection of Riboflavin Using 0.5 mm Graphite Pencil Lead
Southwest Virginia Governors School/George Wythe High School
Adult Sponsor: Jared Brown

COMPUTER SCIENCE (CS) AND MATHEMATICAL SCIENCES (MA): 400

First Place

402 Kabaria, Kevin
Computer Vision: Creating an Adaptable Environment Based Recognition System
Richlands High School
Adult Sponsor: Melissa Addison

Second Place

405 Zheng, Ziqi
Power 10: A New Scoring System for Bowling
Blacksburg High School
Adult Sponsor: Sandra Moore

Third Place

401 Guthrie, Julie

Assessing Virginia Cattle Producers' Knowledge and Opinions of the Beef Checkoff

Southwest Virginia Governor's School/Pulaski County High School

Adult Sponsor: Rebecca Phillips

**EARTH AND PLANETARY SCIENCE (EA) AND
ENVIRONMENTAL SCIENCES (EV): 500**

First Place

502 Feng, Jeff

Alkylphenols in Liquid Laundry Detergents

Southwest Virginia Governor's School/Radford High School

Adult Sponsor: Jared Brown

Second Place

503 Vaccaro, Andrew

Correlation Between Arctic Sea Ice Thickness and Surface Temperature

Southwest Virginia Governor's School/Radford High School

Adult Sponsor: Daniel Blake

Third Place

501 Dennis, Kara

The Effects of Education on the Belief of Global Warming Impact

Southwest Virginia Governor's School/George Wythe High School

Adult Sponsor: Rebecca Phillips

**ENERGY AND TRANSPORTATION (ET) AND
ENGINEERING: ELECTRICAL AND MECHANICAL (EE): 600**

First Place

603 Kuhn, Jordan and Eric Chang

Designing, Prototyping, and Testing Agricultural Drones

Southwest Virginia Governor's School/Christiansburg High School

Adult Sponsor: Kenneth Abel

Second Place

602 Hay, Tanner

Improving UPS Delivery Truck Drag Using Pre-existing Devices

Southwest Virginia Governors School/George Wythe High School

Adult Sponsor: Kenneth Abel

Third Place

606 Squibb, Carson

REM Sleep Clock

Southwest Virginia Governor's School/Giles County High School

Adult Sponsor: Daniel Blake

Honorable Mention

605 Sexton, Nathan

Tow Dolly

Southwest Virginia Governor's School/Pulaski County High School

Adult Sponsor: Daniel Blake

Honorable Mention

601 Hall, Leah

Who's Hungry? A Novel System to Assist Farmers in Mixing Milk of Calves

Classical Conversions

Adult Sponsor: Button Hall

MEDICINE AND HEALTH SCIENCES (ME): 700

First Place

703 Quesenberry, Thomas

Electrostatic Layer-By-Layer Self-Assembly of Antimicrobial Films

Southwest Virginia Governor's School/Pulaski Country High School

Adult Sponsor: Jared Brown

Second Place

702 Patel, Rahil

Negative Selection of TERT-Deleted Tissue During Epithelial Regeneration

Richlands High School

Adult Sponsor: Tiffany Stillwell

Third Place

701 Fain, Sydney

Interaction of Ferrous Sulfate and Alternative Sweetening Agents in the Perception of Sweetness and Presence of Dysgeusia

Southwest Virginia Governor's School/Christiansburg High School

Adult Sponsor: Rebecca Phillips

PHYSICS AND ASTRONOMY (PH): 800

First Place

805 Zuchowski, Taylor
Soccer Shin Guard Impact Study
Southwest Virginia Governor's School/Christiansburg High School
Adult Sponsor: Daniel Blake

Second Place

804 Wright, Sara
Leading with your Face or Your Feet
Southwest Virginia Governor's School/Pulaski County High School
Adult Sponsor: Daniel Blake

Third Place

801 Kumar, Karan
Analyzing Samples With the STM/AFM
Southwest Virginia Governor's School/Galax High School
Adult Sponsor: Daniel Blake

Honorable Mention

806 Keen, Ashleigh
What Happens to a Candle in the Wind?
Twin Valley High School
Adult Sponsor: Lisa Burns

Honorable Mention

803 Thompson, Alexander
Rocket Power
Council High School
Adult Sponsor: Amanda Dorton

PLANT SCIENCES (PS): 900

First Place

903 Williams, Tyler
Comparison of Different Extraction Methods of Oligomeric Proanthocyanidins in Yeast Inhibition
Southwest Virginia Governor's School/George Wythe High School
Adult Sponsor: Rebecca Phillips

Second Place

902 White, Zachary

Effect of Artificial Suns on the Efficiency of Alternative Agricultural Methods vs. Traditional Soil Medium

Southwest Virginia Governor's School/George Wythe High School

Adult Sponsor: Rebecca Phillips

Third Place

901 Lo, Terrence

The Effects of Lichen Secondary Metabolites on Ovarian Cancer Cell Lines

Classical Conversations

Adult Sponsor: Peter Lo

JUNIOR DIVISION

ANIMAL SCIENCES (AS): 1100

First Place

1101 Hall, Blake

Effectively Training Lambs

Classical Conversations

Adult Sponsor: Scott Greiner

Second Place

1102 Mitchell, Asia

Toys and Dogs

Classical Conversations

Adult Sponsor: Susan Mitchell

BEHAVIORAL AND SOCIAL SCIENCES (BE): 1200

First Place

1205 Storms, Abby

Distracting Devices

Scott Memorial Middle School

Adult Sponsor: April Schmidt

Second Place

1207 Yates, Kathryn

Sinistral or Dextral?

Graham Middle School

Adult Sponsor: Catherine Evans

Third Place

1203 Presley, Olivia

The Effects of Video Games on the Human Heart Rate

Twin Valley Elementary/Middle School

Adult Sponsor: Elden Presley

BIOCHEMISTRY (BI): 1300

First Place

1304 Shelburne, Nathan

Last but Not Yeast

Classical Conversations

Adult Sponsor: Sheri Shelburne

Second Place

1302 Mounzer, Christina

Baking Bread: With and Without Gluten

Graham Middle School

Adult Sponsor: Catherine Evans

Third Place

1301 Franklin, Katherine

Edible Metals a Healthy Choice

Graham Middle School

Adult Sponsor: Susan Rutherford

Honorable Mention

1303 Pope, Eva

Egg Speriment

Tazewell Middle School

Adult Sponsor: Katherine Claytor

CHEMISTRY (CH): 1400

First Place

1404 Dabney, Noah

Cool It... Finding the Quickest and Most Efficient Way for Cooling a Liquid

Classical Conversations

Adult Sponsor: Button Hall

Second Place

1413 White, Audra

Does Salt Affect the Speed of Hydrogen Production During Electrolysis?

Scott Memorial Middle School

Adult Sponsor: Duane Snaveley

Third Place

1406 Morgan, Madison

Silent Killer

Graham Middle School

Adult Sponsor: Catherine Evans

Honorable Mention

1409 Sarver, Cameron

Thirsty? What Cools a Soda the Fastest?

Graham Middle School

Adult Sponsor: Catherine Evans

Honorable Mention

1410 Thomas, Landen

Which Fabric Burns Faster?

Twin Valley Elementary/Middle School

Adult Sponsor: Mary Rasnake

EARTH AND PLANETARY SCIENCE (EA): 1500

First Place

1503 Theeravachirakul, Boon

Effect of an Earthquake on the Buildings in a Small Town

Auburn Middle School

Adult Sponsor: Debbie Sharp

Second Place

1502 McClanahan, Roger

Indoor Rainbow

Twin Valley High School

Adult Sponsor: Harold Wimmer

ENERGY AND TRANSPORTATION (ET): 1600

First Place

1602 Kimbler, Brennon

Residential Light Bulb Effects on Home Heating and Cooling Costs

Wallace Middle School

Adult Sponsor: Will Kimbler

Second Place

1604 Owens, Jacob

From the Frying Pan to the Gas Tank

Twin Valley High School

Adult Sponsor: Harold Wimmer

Third Place

1605 Vance, Trey

Does Air Have Weight

Wallace Middle School

Adult Sponsor: Tracy Vance

Honorable Mention

1601 Self, Rielly

Propulsion System of a Rocket

Wallace Middle School

Adult Sponsor: Selena Self

ENGINEERING: ELECTRICAL AND MECHANICAL (EE) AND ENGINEERING: MATERIALS AND BIOENGINEERING (EN): 1700

First Place

1703 Dillon, Maxwell

Gripping Golf Geometry

Scott Memorial Middle School

Adult Sponsor: April Schmidt

Second Place

1705 Sparling, Connor

The Evolution of Dams

Richlands Middle School

Adult Sponsor: Kim Lawson

Third Place

1701 Brown, Andrew
What's Hot and What's Not
Graham Middle School
Adult Sponsor: Susan Rutherford

Honorable Mention

1702 Clement, George
Got Insulation?
Graham Middle School
Adult Sponsor: Catherine Evans

Honorable Mention

1704 Ingo, Kailey
London Bridges Falling Down
Scott Memorial Middle School
Adult Sponsor: April Schmidt

ENVIRONMENTAL SCIENCES (EV): 1800

First Place

1802 Empson, Anthea
From Deadly to Drinkable: Killing Bacteria with the Sun
Classical Conversions
Adult Sponsor: Yvonne Empson

Second Place

1807 McAvoy, Griffin
Mean Cleaners vs. Green Cleaners: Part Two
Tazewell Middle School
Adult Sponsor: Katherine Claytor

Third Place

1801 Anderson, Melly
Rooftop Gardens: Are They a Cool Idea?
Graham Middle School
Adult Sponsor: Catherine Evans

MEDICINE AND HEALTH SCIENCES (ME): 1900

First Place

1906 Thurston, Alexis
Love Those Eyes
Tazewell Middle School
Adult Sponsor: Katherine Claytor

Second Place

1904 Keen, Katelyn
What Are You Staring At? (Comparing Blink Rates)
Twin Valley Elementary/Middle School
Adult Sponsor: Mary Rasnake

Third Place

1901 Asbury, Katherine
How Much Oxygen Do You Exhale?
Graham Middle School
Adult Sponsor: Susan Rutherford

Honorable Mention

1903 Davis, Abbi
Which Moisturizer Will Keep the Most Moisture in Your Skin
Tazewell Middle School
Adult Sponsor: Katherine Claytor

MICROBIOLOGY (MI): 2000

First Place

2002 Grepiotis, Hunter
Hand Hygiene
Tazewell Middle School
Adult Sponsor: Katherine Claytor

Second Place

2001 Boyd, Bailey
The Good, the Bad, the Ugly: Bacterial Concerns Over Self-Serve Cafeterias
Tazewell Middle School
Adult Sponsor: Katherine Claytor

Third Place

2003 Stephens, Senah

Detection of Coliform Bacteria in Fresh Water

Scott Memorial Middle School

Adult Sponsor: Duane Snavely

PHYSICS AND ASTRONOMY (PH): 2100

First Place

2105 Robbins, Anya

Know Your Bow

Auburn Middle school

Adult Sponsor: Debbie Sharp

Second Place

2104 Lewis, Levi

Which Brand of Paper Towels Is the Strongest?

Fort Chiswell Middle School

Adult Sponsor: Rebecca Staley

Third Place

2102 King, Nicolas

Adhesives

Graham Middle School

Adult Sponsor: Catherine Evans

PLANT SCIENCES (PS): 2200

First Place

2203 Day, Jennifer

No Leftovers, Please!

Graham Middle School

Adult Sponsor: Catherine Evans

Second Place

2202 Culbertson, Nelia

How Different Liquids React to House Plants

Richlands Middle School

Adult Sponsor: Kim Lawson

Third Place

2201 Cantrell, Makynzee and Autumn Matney

Jack and the Beanstalk Back Again

Twin Valley High School

Adult Sponsor: Harold Wimmer