

**2014 Blue Ridge Highlands Regional Science Fair
March 7 - 8, 2014 – Radford University**

AWARDS BY NAME OF STUDENT

SENIOR DIVISION

ANIMAL SCIENCES

102 Leah Hall

Bone Growth in Goat Kids

Homeschool

Adult Sponsor: Scott Greiner

2nd place – Animal Science

Virginia State Science and Engineering Fair Delegate

American Society of Mammalogists Award

103 Nick Walsh

Human Interaction and Its Effect on Laying Quail

Blacksburg High School

Adult Sponsor: Michael Collver

1st place – Animal Science

Virginia State Science and Engineering Fair Delegate

American Society of Mammalogists Award

Virginia Dental Award

BEHAVIORAL AND SOCIAL SCIENCES

201 Jonathan Deters

Time Management Skills of Student Athletes Versus Non-Athlete Students

Southwest Virginia Governor's School

Adult Sponsor: Sherry Pugh

1st place – Behavioral and Social Sciences

Virginia State Science and Engineering Fair Delegate

American Psychological Society Award

Virginia Dental Award

202 Brandon Dunford

The Relationship Between Loneliness and Social Media Usage

Southwest Virginia Governor's School

Adult Sponsor: Sherry Pugh

Honorable Mention – Behavioral and Social Sciences

203 Catherine Grant

The Effects of Mirror Therapy on Performance of Physical Therapy

Blacksburg High School

Adult Sponsor: Michael Collver

2nd place – Behavioral and Social Sciences

Virginia State Science and Engineering Fair Delegate

205 Anna Makarova

Factors that Affect Singing

Southwest Virginia Governor's School

Adult Sponsor: Sherry Pugh

3rd place – Behavioral and Social Sciences

Virginia State Science and Engineering Fair Delegate

Virginia Tech Statistics Award

206 Griffin McAvoy

A Demographic Analysis of Perceptions of Coal Related Pollution Among Inhabitants of a Coal Rich Environment

Tazewell High School

Adult Sponsor: Greg Deskins

Mount Ruritan Award

National Oceanic and Atmospheric Association Award

207 Taylor Ratliff and Canaan Addison

Dipn' & Spitn': Changing Pre-teens' Perceptions on the Harmful Effects of Smokeless Tobacco

Richlands High School

Melissa Addison

Honorable Mention – Behavioral and Social Sciences

Mount Ruritan Award

BIOCHEMISTRY / CHEMISTRY

301 Meredith Dove and Keena Shang

Crystal Formation on Collagenous Gelatins: Effect of Carboxylation and pH on Rates and Polymorph of Calcium Carbonates

Blacksburg High School

Adult Sponsor: Nizhou Han

Grand Award Winner

1st place – Biochemistry / Chemistry

Virginia State Science and Engineering Fair Delegate

Virginia Dental Award

302 Elissa Fink

Effects of Self-Tanner Component, Dihydroxy-acetone, on Human Cells

Southwest Virginia Governor's School

Adult Sponsor: Rebecca Phillips

3rd place – Biochemistry / Chemistry

2nd place – American Chemistry Society, Northeastern Tennessee Section Award

Beta Beta Beta Biological Honor Society Award

Mu Alpha Theta Award

U. S. Public Health Award

303 Ben Parker

The Effects of Phosphate Deficiency on the Arabidopsis thaliana P80 Mutant

Blacksburg High School

Adult Sponsor: Michael Collver

Honorable Mention – Biochemistry / Chemistry

304 Kyle Stiltner, Mark Sahyouni, and Matthew Ball

A Shocking Look at Micro-organisms: A Study of the Effects of Electromagnetic Fields on Single-celled Organisms

Richlands High School

Adult Sponsor: Tiffany Stillwell

Honorable Mention – Biochemistry / Chemistry

305 Brittney Worrell

Effects of Petroleum Diesel and Biodiesel on Polymer Engine Parts

Southwest Virginia Governor's School

Adult Sponsor: Krista Stith

2nd place – Biochemistry / Chemistry

Virginia State Science and Engineering Fair Delegate

1st place – American Chemistry Society, Northeastern Tennessee Section Award

American Chemical Society, Virginia Blue Ridge Section Award

ASM International Foundation Award

COMPUTER SCIENCE / MATHEMATICAL SCIENCES

403 Rebecah Storms

Sonification of Mathematics Using a String Ensemble

Southwest Virginia Governor's School

Adult Sponsor: Jerri England

2nd place – Computer Science / Mathematical Sciences

Virginia State Science and Engineering Fair Delegate

Intel Excellence in Computer Science Award

404 Joseph Widrig

Development of Directory-Specific Software for the Extraction of CxxTest Modules

Southwest Virginia Governor's School

Adult Sponsor: Dan Blake

1st place – Computer Science / Mathematical Sciences

Virginia State Science and Engineering Fair Delegate

Virginia Dental Award

EARTH AND PLANETARY SCIENCE / ENVIRONMENTAL SCIENCES

501 Riley Chitwood

The Effects of Hydraulic Fracturing on Water Quality

Southwest Virginia Governor's School

Adult Sponsor: Jared Brown

3rd place – Earth and Planetary Science / Environmental Sciences

U. S. Stockholm Junior Water Prize

Virginia Lakes and Watershed Award

502 Julia Hager

The Removal of Copper Sulfate from Water Using Saccaromyces cerevisiae

Southwest Virginia Governor's School

Adult Sponsor: Krista Stith

1st place – Earth and Planetary Science / Environmental Sciences

Virginia State Science and Engineering Fair Delegate

American Meteorological Society Award

Association for Women Geoscientists Award

Genius Olympiad Award

U. S. Stockholm Junior Water Prize

Virginia Dental Award

503 Brandon Spangler

The Effects of Agriculture on Nitrate Levels in Water

Southwest Virginia Governor's School

Adult Sponsor: Jared Brown

2nd place – Earth and Planetary Science / Environmental Sciences

Virginia State Science and Engineering Fair Delegate

**ENERGY AND TRANSPORTATION / ENGINEERING: ELECTRICAL AND
MECHANICAL / ENGINEERING: MATERIALS AND BIOENGINEERING**

602 Tanner Hay

Improving UPS Delivery Truck Drag Using Pre-existing Devices Pt. 2

Southwest Virginia Governors School

Adult Sponsor: Kenneth Abel

**2nd place – Energy and Transportation / Engineering: Electrical and Mechanical /
Engineering: Materials and Bioengineering**

Virginia State Science and Engineering Fair Delegate

I-SWEEEP Award

Manufacturing Technology Center Award

Wytheville Community College Scholarship

604 Jordan Kuhn and Eric Chang

Designing, Prototyping, and Testing Agricultural Drones

Southwest Virginia Governor's School

Adult Sponsor: Kenneth Abel

Grand Award Winner

**1st place – Energy and Transportation / Engineering: Electrical and Mechanical /
Engineering: Materials and Bioengineering**

Virginia State Science and Engineering Fair Delegate

Virginia Dental Award

New River Community College Scholarship (Jordan Kuhn)

605 Collin Smith

Reducing Wind Resistance and Drag to Boost Electric Car Efficiency

Southwest Virginia Governor's School

Adult Sponsor: Daniel Blake

3rd place – Energy and Transportation / Engineering: Electrical and Mechanical / Engineering: Materials and Bioengineering

U. S. Metric Association Award

Virginia State Science and Engineering Fair Delegate

Yale Science and Engineering Association Award

MEDICINE AND HEALTH SCIENCES

701 Sydney Fain

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

Southwest Virginia Governor's School

Adult Sponsor: Rebecca Phillips

Grand Award Alternate

1st place – Medicine and Health

Virginia State Science and Engineering Fair Delegate

American Association for University Women Award

U. S. Navy and Marine Corps Distinguished Achievement Award

Virginia Dental Grand Award

Virginia Dental Award

Virginia Tech Statistics Award

702 Molly Futrell

Determining the Varying Levels of Flexibility Among Varsity Athletes

Southwest Virginia Governor's School

Adult Sponsor: Krista Stith

3rd place – Medicine and Health

703 Marta Paulson

Blunt Force Trauma on Perimortem and Post-mortem Skeletons

Southwest Virginia Governor's School

Adult Sponsor: Krista Stith

Honorable Mention – Medicine and Health

American Association for University Women Award

704 Ibrahim Zegue Konate

Improving Reprogramming of Specialized Cells to Pluripotency

Blacksburg High School

Adult Sponsor: Michael Collver

2nd place – Medicine and Health

Virginia State Science and Engineering Fair Delegate

Emory and Henry Scholarship

PLANT SCIENCES

801 Alex Bandy

Effect of Chlorine Concentration on the Germination Rate and Stem Growth of Glycine max

Richlands High School

Adult Sponsor: Tiffany Stillwell

2nd place – Plant Sciences

Virginia State Science and Engineering Fair Delegate

802 Y. Terence Lo

Green Tea Extract as an Environmentally-Friendly Bactericide Against Pseudomonas Syringae on Plants

Classical Conversations of Christiansburg

Adult Sponsor: Bingyu Zhao

1st place – Plant Sciences

Virginia State Science and Engineering Fair Delegate

Genius Olympiad Award

Ricoh Corporation for the Regional Ricoh Sustainable Development Award

Society for In Vitro Biology Award

Virginia Dental Award

803 John White

The Effect of Alternative Agricultural Methods on the Growth Rate of Various Species of Plants

Southwest Virginia Governor's School

Adult Sponsor: Rebecca Phillips

3rd place – Plant Sciences

American Red Cross, New River Chapter Award

U. S. Navy and Marine Corps Distinguished Achievement Award

JUNIOR DIVISION

ANIMAL SCIENCES

1101 Blake Hall

Milk Replacer for Calves

Home School

Adult Sponsor: Mark McCann

1st place – Animal Sciences

American Society of Mammalogists Award

Broadcom Masters Award

1102 Rosie Tomiak

M&M Survival Challenge

Scott Memorial Middle School

Adult Sponsor: April Schmidt

2nd place – Animal Sciences

American Society of Mammalogists Award

BEHAVIORAL AND SOCIAL SCIENCES

1202 Olivia Presley

The Heartbeat of Caffeine

Twin Valley High School

Adult Sponsor: Harold Wimmer

1st place – Behavioral and Social Sciences

CHEMISTRY

1301 Matthew Blankenship

Hand-Dyeing Wool with Kool-Aid

Tazewell Middle School

Adult Sponsor: Katherine Claytor

Honorable Mention – Chemistry

1303 Christopher Connelly

Sugar Cookies

Auburn Middle School

Adult Sponsor: Debbie Sharp

Honorable Mention – Chemistry

1304 Emma Cook

Got electrolytes? Do sports drinks really provide more electrolytes than natural juice?

Classical Conversations of Christiansburg

Adult Sponsor: Darrell Cook

2nd place – Chemistry

Broadcom Masters Award

U. S. Navy and Marine Corps Distinguished Achievement Award

1305 Christopher Harrison

How do leavening agents effect cream puffs?

St. John Neumann Academy

Adult Sponsor: Elizabeth Vanderhoof

Honorable Mention – Chemistry

1306 Katelyn Keen

What Are We Eating?: Determining the Iron Content in Cereal

Twin Valley High School

Adult Sponsor: Harold Wimmer

Honorable Mention – Chemistry

1308 Davis Mesmer

Corroding Cords

St. John Neumann Academy

Adult Sponsor: Elizabeth Vanderhoof

Honorable Mention – Chemistry

1311 Greta Slabach

Mission: Evaporation Control

Classical Conversations of Christiansburg

Adult Sponsor: Audra Slabach

3rd place – Chemistry

3rd place – American Chemistry Society, Northeastern Tennessee Section Award

1313 Audra White

Which Electrolyte Produces the Highest Rate of Hydrogen Production During Electrolysis?

Scott Memorial Middle School

Adult Sponsor: April Schmidt

1st place – Chemistry

Broadcom Masters Award

U. S. Navy and Marine Corps Distinguished Achievement Award

ENERGY AND TRANSPORTATION

1401 Trey Vance

Does Tire Pressure Effect Gas Mileage

Wallace Middle School

Adult Sponsor: Joey Vance

2nd place – Energy and Transportation

Mount Tabor Ruritan Award

1402 Conor Sparling

How to Improve a Truck's Aerodynamics

Richlands Middle School

Adult Sponsor: Kim Lawson

1st place – Energy and Transportation

Broadcom Masters Award

ENGINEERING: ELECTRICAL AND MECHANICAL

1501 Josh Daniels

Hovercraft Science

Richlands Middle School

Adult Sponsor: Kim Lawson

3rd place – Engineering: Electrical and Mechanical

1502 Celia East

Coccidiosis: Can You Ci Me?

Classical Conversations of Christiansburg

Adult Sponsor: Renee East

1st place – Engineering: Electrical and Mechanical

Broadcom Masters Award

1504 John Shewchuk

Modern Wizardry

St. John Neumann Academy

Adult Sponsor: Elizabeth Vanderhoof

2nd place – Engineering: Electrical and Mechanical

ENVIRONMENTAL MANAGEMENT / ENVIRONMENTAL SCIENCES

1601 Chris Conner

Solar Ovens

Wallace Middle School

Adult Sponsor: Brian Conner

3rd place – Environmental Management / Environmental Sciences

1602 Isabel Gilbert

Basic Water: pH Testing of a River, Creek and a Lake

Richlands Middle School

Adult Sponsor: Kim Lawson

Honorable Mention – Environmental Management / Environmental Sciences

1603 Emily Shelton

Calming the Stormwater

Classical Conversations of Christiansburg

Adult Sponsor: William Shelton

1st place – Environmental Management / Environmental Sciences

Broadcom Masters Award

Mount Tabor Ruritan Award

1604 Sarah Campbell

Leaf Litter and Water Chemistry

Riverview Elementary/Middle School

Adult Sponsor: Kay Ratliff

2nd place – Environmental Management / Environmental Sciences

Virginia Lakes and Watershed Award

1605 Abigail Thornberry

Ready, Set, Decompose!

Riverview Elementary/Middle School

Adult Sponsor: Kay Ratliff

Honorable Mention – Environmental Management / Environmental Sciences

MATHEMATICAL SCIENCES

1701 Kassie Sigmon

The Golden Ratio

Tazewell Middle School

Adult Sponsor: Katherine Claytor

2nd place – Mathematical Sciences

1702 Emma Currie

Are Appalachian Settlers on the Level?

Wallace Middle School

Adult Sponsor: Stephanie Currie

1st place – Mathematical Sciences

Broadcom Masters Award

MEDICINE AND HEALTH SCIENCES

1801 Dayna Lafferty

You're Killing Yourself One Puff at a Time

Tazewell Middle School

Adult Sponsor: Katherine Claytor

2nd place – Medicine and Health

1802 Sara Rinehardt

Is Energy Worth the Risk?

Richlands Middle School

Adult Sponsor: Kim Lawson

1st place – Medicine and Health

MICROBIOLOGY

1901 Alexis Bales

Bacteria: Canine vs. Human, Who Has the Worst Bacteria in Their Mouth?

Richlands Middle School

Adult Sponsor: Becky Bales

1st place – Microbiology

1902 Robert Coleman

Mold: A Study of Environments Promoting Growth

Richlands Middle School

Adult Sponsor: Kim Lawson

3rd place – Microbiology

1903 Breana Herald

The Fight Between Honey and Mold

Tazewell Middle School

Adult Sponsor: Katherine Claytor

2nd place – Microbiology

PHYSICS AND ASTRONOMY

2003 Sean Grande

Should the NFL Get Rid of the Extra Point?

Wallace Middle School

Adult Sponsor: Robert Grande

1st place – Physics and Astronomy

2004 Anna Haas

The Effect of Air Pressure on Model Rocket Altitude

Auburn Middle School

Adult Sponsor: Debbie Sharp

National Weather Service Award

2005 Cailin Hale

Magnetic Attraction: A Study of Gauss Rifles

Classical Conversations of Christiansburg

Adult Sponsor: Vicki Hale

Honorable Mention – Physics and Astronomy

2006 Hannah Little

“Marble Race”: Finding the Viscosity of Fluids

Richlands Middle School

Adult Sponsor: Kim Lawson

Honorable Mention – Physics and Astronomy

2011 Alex Tomiak

Simple Harmonic Motion in a Spring Mass System

Scott Memorial Middle School

Adult Sponsor: April Schmidt

2nd place – Physics and Astronomy

2012 Mason Wimmer

Are Store Brand Paper Towels Stronger Than Name Brand Paper Towels?

Tazewell Middle School

Adult Sponsor: Katherine Claytor

3rd place – Physics and Astronomy