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**Sam Smith, Kyra Wilson & Christian Taylor.....**  
.....**Physics**

St. Andrew's-Sewanee School, Sewanee  
"Voltage Measured Relative to Angle of Solar Panel"

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**Valeria Garcia, Nhung Hoang & Susannah E. Price.....**  
.....**Technology**

School for Science & Math at Vanderbilt, Nashville  
"The Development of a Frog-Logging Android Application"

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**Rachel Baker.....**  
.....**Chemistry**

Camden High School, Camden  
"Biomass to Biofuels: An Economical Study"

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**Cooper Thome.....**  
.....**Microbiology**

Central Magnet High School, Murfreesboro  
"The Effect of River Proximity on the Microbial Phyllosphere of the Sycamore Tree, *Platanus occidentalis*"

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**Anna Ferenchuk.....**  
.....**Environmental**

Cleveland High School, Cleveland  
"The Process of Eutrophication and the Effects of Nuisance Algae Growth and Nutrient Enrichment"

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**Anjali Chandra.....**  
.....**Medicine & Health**

Girl's Preparatory School, Chattanooga  
"Garlic Derivatives as a Novel Therapy for Pancreatic Cancer"

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**Forrest Richardson.....**  
.....**Biology**

Hillsboro High School, Nashville  
"Evaluation of Primers for Microbial Source Tracking of Deer and Bovine in Middle Tennessee"

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**Efrain Salazar & Able**

**Shi.....**  
.....**Physics**

School for Science & Math at Vanderbilt, Nashville  
"Determining Soil Electrical Conductivity Using Electromagnetic Induction on an Autonomous Robot"

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**Morgan Bowling & Rachel Nichols.....**  
.....**Environmental Science**

Siegel High School, Murfreesboro  
"Anthrogenic Effects on the Water Quality of the Stones River in Murfreesboro, Tennessee"

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**Emma Kingsbury.....**  
.....**Chemistry**

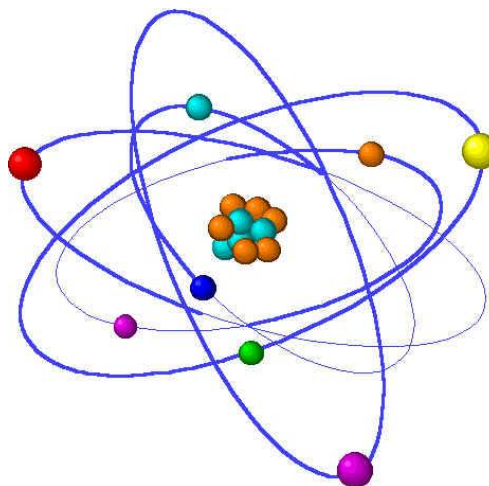
Hillsboro High School, Nashville  
"Sequencing of *sIL-6R $\alpha$*  to Identify a Potential Cleavage Site for *sIL-6R $\alpha$*  Trans-Signaling in Glaucoma"

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**Dheeraj Namburu, Arturas Malinauskas, Gray Tettleton & Daniel Mehus.....**  
.....**Environmental Engineering**

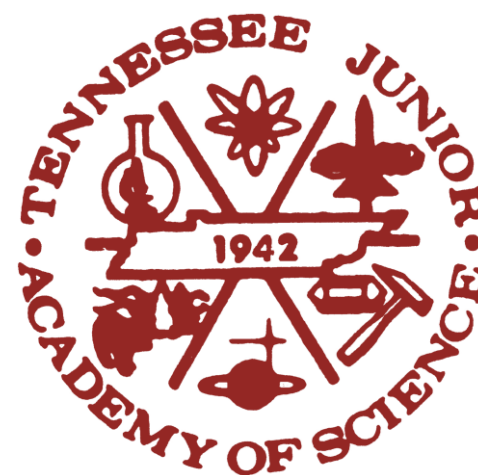
School for Science & Math at Vanderbilt, Nashville  
"Measuring Wetland Health with Geochemical Data Loggers"

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# TENNESSEE JUNIOR ACADEMY OF SCIENCE

## ANNUAL MEETING



**BELMONT UNIVERSITY**  
**Nashville, Tennessee**

**FRIDAY, APRIL 25<sup>TH</sup>, 2014**

Sponsored by the  
**Tennessee Academy of Science**

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*Tennessee Academy of Science Journal  
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Gary Henson..... East Tennessee State University  
Timothy McDowell..... East Tennessee State University

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- C. Steven Murphree.....Belmont University

JUDGES

- Joel Harp.....Vanderbilt University  
Preston J. MacDougall.....Middle Tennessee State University  
E. Lewis Myles.....Tennessee State University

PROGRAM

Friday, April 25<sup>th</sup>, 2014

- 9:00-9:30a.m.....Registration  
9:30-9:40a.m.....Welcome  
9:40-11:30a.m.....Paper Presentations  
11:35-noon.....Special Presentations  
12:00-1:00p.m.....Lunch  
1:00-4:00p.m.....Paper Presentations  
4:00p.m.....Adjournment

TENNESSEE  
JUNIOR ACADEMY OF SCIENCE

Papers to be Presented

Student's Name, School, City, and Title of Paper

**Lillith Bulawa & Grace Gass**.....**Environmental Management**

Greeneville High School, Greeneville  
"Efficacy of Simulated Martian and Lunar Regolith as a Shield"

**Faris Wasim**.....**Zoology**

Montgomery Bell Academy, Nashville  
"Low Levels of Caffeine Protect the Brain Following Stroke"

**Alex Jolly, Catherine English, Jacob Hill & Yae Eun Yang**.....**Microbiology**

School for Science and Math at Vanderbilt, Nashville  
"Characterizing Unknown Microbial Species and Analyzing Microbial Stability in Cave Water Environments"

**Kayla Jenkins** .....**Astronomy**

Sullivan South High School, Kingsport  
"The Age and Distance of the Open Cluster NGC 2126"

**Vijaya Dasari**.....**Behavioral Psychology**

White Station High School, Memphis  
"Testing the Bayesian Model of Hypothesis Evaluation"

**Susanna Edwards**.....**Zoology**

Pope John Paul II High School, Hendersonville  
"The Influence of Hue, Lightness, and Saturation on Ant's Foraging Behavior"

**Chardia Csizmadia & Abigail Schilling**.....

.....**Chemistry**

Northwest High School, Clarksville  
"Redox Reactions of Iron in the Body"

**Samuel Rafter & Camron Shirkhodaie**.....

.....**Biochemistry**

School for Science and Math at Vanderbilt, Nashville  
"Testing the Enzymatic Capacity of  $\beta$ -glucosidase"

**Aubrey Baxter & Carleigh Wilson**.....

.....**Microbiology**

Northwest High School, Clarksville  
"Determination of Protein Molecular Weight"

**Heidi Barringer**.....**Environmental**

Cleveland High School, Cleveland  
"A Comparison of Water Parameters, Vegetation, and Macroinvertebrates of a Stream Before, After, and As Passes Through Waterville Golf Course"

**Caroline Dodd, Julia Sculley & Christina Webb**.....**Environmental Science**

Siegel High School, Murfreesboro  
"Macroinvertebrates as Indicators of Anthropogenic Effects on Water Quality"

**Emily McRen**.....**Zoology**

Pope John Paul II High School, Hendersonville  
"Microorganism Presence in the Decomposition of Flesh"