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**Ryan Dunaway, Jackson Ferrell, Rob Edwards, & Nathan Beeten.....Environmental Science**

School for Science and Math at Vanderbilt, Nashville

"Remote Sensing of Carbon Dioxide in the Lower Atmosphere"

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**Petra Byl & Diana Neculcea.....Microbiology**

Hume-Fogg High School, Nashville

"Natural Antibiotic Resistance in Cave Stream Bacterial Communities"

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**Victoria Dolan & Jordan Lee.....Zoology**

Pope John Paul II High School, Hendersonville

"The Effects of Lithium Chloride on the Feeding Habits of the Elimia Snail"

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**Taylor Cook..... Botany**

Northwest High School, Clarksville

"The Good and Bad Effects of Fertilizer on Sunflowers"

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**Lachlan Hassman & Eliza Gooding.....Physics**

St. Andrew's-Sewanee School, Sewanee

"The Effects of Angle of Attack on the Lift Created by an Airfoil"

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**Kathryn Pickrell & John Crenshaw..... Zoology**

Hume-Fogg High School, Nashville

"Water Turbidity Has No Effect on Pheromone Communications in Aquatic Flatworms"

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**Regan Givens.....Engineering**

Pope John Paul II High School, Hendersonville

"The Effects of Varying Glucose Concentrations on Cellular Glycolytic Rates"

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**Jansen Gibson, Thomas Metke, Sabrina Brewer & Cristian Vera.....Environmental Science**

School for Science and Math at Vanderbilt, Nashville

"The Long-Term Effects of Airport Runoff on Urban Stream Quality and Habitability in Nashville, Tennessee"

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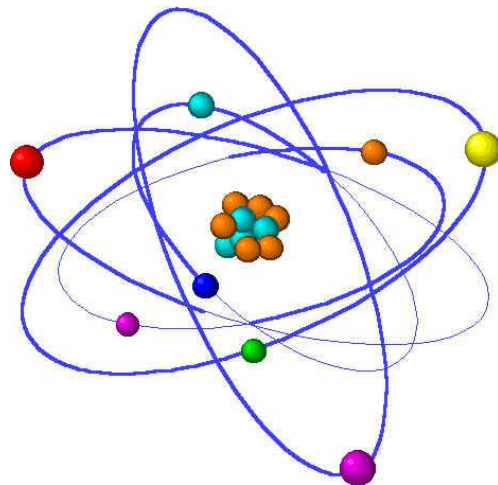
**Katherine Watson & Skyler Cochrane**

.....Chemistry

School for Science and Math at Vanderbilt, Nashville

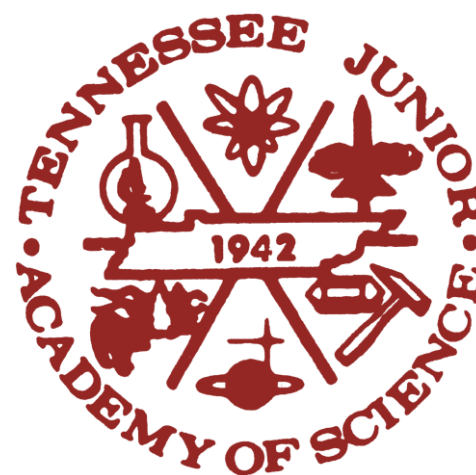
"Testing the Effectiveness of Luminol in the Dating of Skeletal Remains"

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# TENNESSEE JUNIOR ACADEMY OF SCIENCE

## ANNUAL MEETING



## BELMONT UNIVERSITY

Nashville, Tennessee

FRIDAY, APRIL 19<sup>TH</sup>, 2013

Sponsored by the  
**Tennessee Academy of Science**

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# TENNESSEE ACADEMY OF SCIENCE

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Walter's State Community College*

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Chi-Che Tai.....East Tennessee State University  
Gary Henson..... East Tennessee State University  
Timothy McDowell..... East Tennessee State University

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

### JUDGES

- James English.....Lipscomb University  
M. Gore Ervin.....Middle Tennessee State University  
Preston J. MacDougall.....Middle Tennessee State University  
Paul E. Koehler.....Oak Ridge National Laboratory  
E. Lewis Myles.....Tennessee State University

## PROGRAM

Friday, April 19<sup>th</sup>, 2013

- 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

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**Darby Schumacher**.....**Environmental Management**  
Baylor School, Chattanooga  
"A Filter Today Keeps Pollutants Away: A Study of  
Nanofiber Based Stormwater Filtration"

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**Rachel Baker**.....**Environmental Management**  
Camden Central High School, Camden  
"Biomass to Biofuels: New Sources to Make Ethanol in the  
Place of Corn"

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**Jada Hampton**.....**Chemistry**  
Cleveland High School, Cleveland  
"The Effects of High Chlorine on the Five Senses before  
and After Physical Activity"

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**Elizabeth Li, Michelle Lu, Oge Onuh, & Shu Zhang**  
.....**Cell Biology**  
School for Science and Math at Vanderbilt, Nashville  
"The Role of the Mannose Receptor and Toll-like Receptor  
2 in TNF $\alpha$  and IL-6 Production"

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**Qiaozhi Guo, Tiannan Zhou, Jennifer Peek,  
& Michael Kessler**.....**Biology**  
School for Science and Math at Vanderbilt,  
Nashville  
"Genetic and Functional Characterization of  $\beta$ -  
glucosidase in Fungal Species under Assorted  
Conditions"

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**Benjamin D. Firth**.....**Astronomy**  
Sullivan South High School, Kingsport  
"A Possible Confirmation of a Planet Orbiting Star  
K015475431"

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**Zheer Ahmed**.....**Microbiology**  
Martin Luther King Academic Magnet High  
School, Nashville  
"Biodegradation of Quaternary Ammonia  
Compounds by Biofilm and Free-Living Bacteria"

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**Reeta Bandyopadhyay, Angelica Coleman,  
Young-Hun Kim, & Brennan Steele**.....  
.....**Computer Science**  
School for Science and Math at Vanderbilt,  
Nashville  
"Determining Plant Species by Use of an Android  
Application"

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**Sam Hedge**.....**Environmental Management**  
Camden Central High School, Camden  
"Water Quality in Selected Watersheds in Benton  
County, Tennessee"

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**Megan Gerstner & Katie Swaringen**.....**Botany**  
Pope John Paul II High School, Hendersonville  
"Allelopathic Effects of the *Juglans nigra* (black  
walnut) on the Pea Plant"

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**Chloe Kilpatrick & Emily McRen**..... **Forensics**  
Pope John Paul II High School, Hendersonville  
"The Effects of Temperature on Insect Activity  
during Flesh Decomposition"

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