

**Rachel Baker .....Biochemistry**

Camden Central High School, Camden  
"Biomass to Biofuels: Production Enzymes"

**Dana Stopinski & Tyler Roberts.....Environmental Science**

Central Magnet School, Murfreesboro  
"Stewart Creek Nutrient & Total Solids Suspended concentrations as Compared to EPA 303(d) Listing"

**Ojee Sharma & Katie Nichols.....Chemistry**

Central Magnet School, Murfreesboro  
"Compound Identification and Analysis of Bone Cement Fumes Used in Joint Replacement Surgeries"

**Isaiah Cox.....Astronomy**

Sullivan South High School, Kingsport  
"A Light Curve of Asteroid 1271 Isergina"

**Vinila Baljepally.....Mathematics**

Bearden High School, Knoxville  
"Novel Mathematical Model to Predict Repeated Ablation for Recurrent Atrial Fibrillation"

**Kaytlyn Jones.....Astronomy**

Sullivan South High School, Kingsport  
"The Secret of the Tail: Meteor Spectroscopy"

**Daniel Ferenchuk.....Environmental Science**

Cleveland High School, Cleveland  
"Insects as Bio-Indicators of Mouse Creek"

**Aaron Oates, Sabeen Rehman & Sanjana Senapati.....Biology**

School for Science and Math at Vanderbilt  
"Correlations Among Nematode Populations, Vegetative Abundance, and Microbial Biodiversity"

**Riley Holt.....Forensics**

Central Magnet School, Murfreesboro  
"The Effect of Perfume and Cologne on Insect Succession and the Rate of Decomposition"

**Cameron Stone, Carly Stouder & Meg Tomayko.....Environmental Science**

Siegel High School, Murfreesboro  
"The effects of Concentrated Canine Waste on Soil Quality in Middle Tennessee"

**Shelby Smith & Gabby Morocco .....Biology**

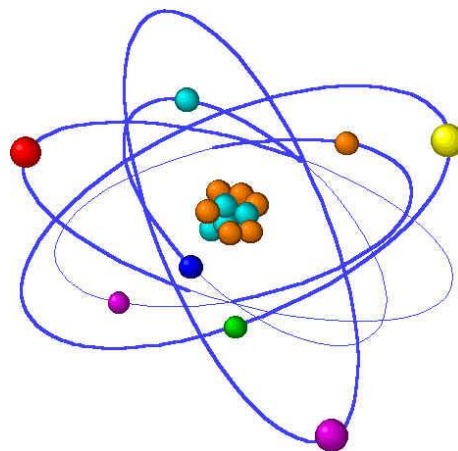
Central Magnet School, Murfreesboro  
"The Effects of Herbicides on Common Gut Bacteria"

**Tyler Agnew & Zijin Gao ...Environmental Science**

Siegel High School, Murfreesboro  
"The Effects of Sulfuric Acid Rain on Typical Lichens Species"

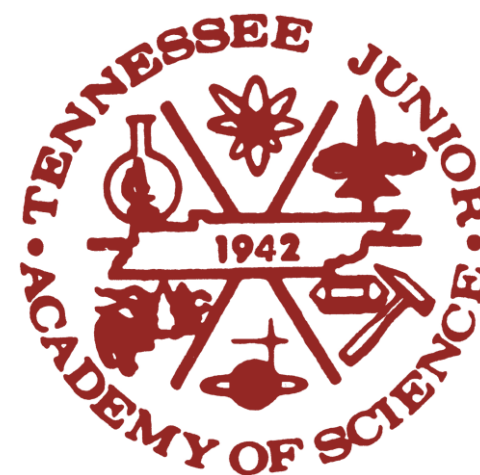
**Sydney Florian & Hayley Miller.....Environmental Science**

Central Magnet School, Murfreesboro  
"*Legionella pneumophila* in Local Human Constructed Water Systems"



# TENNESSEE JUNIOR ACADEMY OF SCIENCE

## ANNUAL MEETING



**BELMONT UNIVERSITY**  
Nashville, Tennessee

**FRIDAY, APRIL 15<sup>TH</sup>, 2016**

Sponsored by the  
**Tennessee Academy of Science**

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

JUDGES

- Dr. M. Gore Ervin .....Middle Tennessee State University
- Dr. Carmen C. Greenberg .....Murfreesboro, Tennessee
- Dr. Joel Harp.....Vanderbilt University

PROGRAM  
Friday, April 15<sup>th</sup>, 2016

- 9:00 - 9:30 am.....Registration
- 9:30 - 9:40 am.....Welcome
- 9:40 - 12 noon .....Paper Presentations
- 12:00 noon - 1:00 pm.....Lunch
- 1:00 pm - 4:00 pm.....Paper Presentations
- 4:00 pm.....Adjournment

TENNESSEE  
JUNIOR ACADEMY OF SCIENCE

Papers to be Presented

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

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**William L. Roussel**.....Chemistry

Hillsboro High School, Nashville  
"Characterizing the Backbone Dynamics and Hydration  
Structure of pMPC with Molecular Dynamics Simulation"

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**Nathaniel Tesfaye**.....Biology

Hillsboro High School, Nashville  
"The Effect of Substrate Stiffness on Mesangial Cells"

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**Vivian Li** .....Physics

Saint Andrew's Sewanee School, Sewanee  
"The Effect of Concentration of Detergent  
Solutions on the Refractive Index of Soap Films"

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**Xuanlin Li**.....Mathematics

The McCallie School, Chattanooga  
"Conjecture of Maximum Number of Minimum-Area  
Triangles Determined by n Lattice Points of which No  
Any Three are Collinear"

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**Alysa Evans**.....Biology

Baylor School, Chattanooga  
"Antibiotic Resistance in Natural Microbial  
Assemblages in the Tennessee River Downstream of a  
Sewage Treatment Plant"

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**Charmayne Bozeman**.....Sociology

Hillsboro High School, Nashville  
"The Difference Between Females and Males in  
Moral Development "

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**Meeah Rodriguez**.....Biology

Hillsboro High School, Nashville  
"What is the Relationship Between Contralateral Neuro-  
inflammation and Elevated Intraocular Pressure?"

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**Laine Brickey & Jessica Schucht**.....Astronomy

Sullivan South High School, Kingsport  
"An Additional Transit of KOI-2034"

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**Naureen Azeez, Duncan Broadie, Kenneth Liao &  
Vamsi Subraveti**.....Physics

School for Science and Math at Vanderbilt, Nashville  
"Analysis of RRAM Performance Under Extreme  
Temperature Conditions"

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**Anagha Ashokan, Sophia Chen, Divya Dayanidhi &  
Abigail Rafter**.....Biology

School for Science and Math at Vanderbilt, Nashville  
"Comparing  $\beta$ -Glucosidase Activity Levels in Tree&Soil Fungi"

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**Aaron Rice, Jacobie Kindle, Sahil Goklaney & Josh  
Graham**.....Botany

Kenwood High School, Clarksville  
"The Effects of Chemicals on Plant Seed  
Germination and Seeding Growth"

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**A. Ledeczki, K. Patel, A. Reside, R. Tennent &  
L. Yaseen** .....Earth Science

School for Science and Math at Vanderbilt, Nashville  
"A Comparative Analysis of the Development Trajectory of  
Mitigation Wetlands in the Piedmont Region"

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**T. Duncan, S. Figal, M. Foster & A. Matta**...Biology

School for Science and Math at Vanderbilt, Nashville  
"Characterization and Extraction Optimization of  
Magnetotactic Bacteria"

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