<table>
<thead>
<tr>
<th>Name</th>
<th>Subject</th>
<th>School</th>
<th>Title</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sara McKay</td>
<td>Anatomy and Physiology</td>
<td>Cleveland High School, Cleveland</td>
<td>&quot;Investigation of Further Application of Dolphin, <em>Delphinus</em>, Thunniform Swimming Style onto Human Underwater Dolphin Kick&quot;</td>
</tr>
<tr>
<td>Sam DeCoster</td>
<td>Computer Science</td>
<td>Montgomery Bell Academy, Nashville</td>
<td>&quot;Optimizing Robotic Movement with Genetic Algorithms&quot;</td>
</tr>
<tr>
<td>Bridget Orr</td>
<td>Chemistry</td>
<td>Pope John Paul II High School, Hendersonville</td>
<td>&quot;Artificial Saliva's Ability to Buffer NaOH&quot;</td>
</tr>
<tr>
<td>Kevin Cheng</td>
<td>Biology</td>
<td>University School of Jackson, Jackson</td>
<td>&quot;Combinations of Phloroglucinol, Kaempferol, 3,5-Dimethoxyphenol, and 1,3,5-Trimethoxybenzene as Novel Treatment for Non-Hodgkin Lymphoma&quot;</td>
</tr>
<tr>
<td>Madalyn Dye</td>
<td>Biology</td>
<td>Pope John Paul II High School, Hendersonville</td>
<td>&quot;Determination of Lactic Acid Concentration Using Absorbance in Iron(III) Chloride Solution&quot;</td>
</tr>
<tr>
<td>Joseph Watson</td>
<td>Ecology</td>
<td>Cleveland High School, Cleveland</td>
<td>&quot;Soil Organism Biodiversity Near a Human-Altered Stream Ecosystem&quot;</td>
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<tr>
<td>Nethmi Hewavithana</td>
<td>Biology</td>
<td>Hillsboro High School, Nashville</td>
<td>&quot;Determine How the Leaf Cells Change with Leaf Development&quot;</td>
</tr>
<tr>
<td>Vy Le</td>
<td>Biology</td>
<td>Hillsboro High School, Nashville</td>
<td>&quot;Evaluating the Behavioral and Reproductive Effects of Imidacloprid on <em>C. elegans</em>&quot;</td>
</tr>
<tr>
<td>Anthony Potchernikov</td>
<td>Molecular Biology</td>
<td>Hillsboro High School, Nashville</td>
<td>&quot;Developing a Fluorescence-Based Model to Investigate Trimer Protein Interactions&quot;</td>
</tr>
<tr>
<td>Raegan Van Wirt, Alexa Nolan, Madeleine Enos &amp; Jacob Reed</td>
<td>Biology</td>
<td>Fred J. Page High School, Franklin</td>
<td>&quot;Changes in the Proteomes of Cold Sensitive and Heat Sensitive <em>Schizosaccharomyces pombe</em> Mutants After Placed Under Environmental Stresses&quot;</td>
</tr>
<tr>
<td>Lucia Berkey, Hannah Hitchcock &amp; Anissa Jayathilake</td>
<td>Ecology</td>
<td>School for Science and Math at Vanderbilt, Nashville</td>
<td>&quot;Seasonal Variation in the Invertebrate Community of Richland Creek&quot;</td>
</tr>
<tr>
<td>Isabella Parks</td>
<td>Botany</td>
<td>Chattanooga School for the Arts and Sciences</td>
<td>&quot;The Genetic Variation of Flowers&quot;</td>
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</table>

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**TENNESSEE JUNIOR ACADEMY OF SCIENCE**

**ANNUAL MEETING**

**BELMONT UNIVERSITY**

Nashville, Tennessee

**Friday, April 26th 2019**

Sponsored by the

Tennessee Academy of Science
TENNESSEE ACADEMY OF SCIENCE

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LOCAL ARRANGEMENTS

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

JUDGES

Dr. M. Gore Ervin..........................Middle Tennessee State University

Dr. Joel Harp..........................Vanderbilt University

Dr. Albert Arul..........................Vanderbilt University

PROGRAM

Friday, April 26th, 2019

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

Aman Gupta Pokal....................Biology
Fred J. Page High School, Franklin
"Light and Carbon Dioxide Affecting the Growth and Bioluminescence of Pyrocystis fusiformis"

Nicholas Hinson........................Biology
Christ Presbyterian Academy, Nashville
"The Effects of Varying Caffeine Concentrations on the Mass and pH of Lumbricus terrestris"

Dzifa Dumenyo, Andrew Pelham, Alyxis Smith & Katherine Wright................Engineering
School for Science and Math at Vanderbilt, Nashville
"Design and Prototype of a Hybrid Barrel-Panel Solar Oven for Implementation in Kenya"

Zachary Nelson..................Engineering
Montgomery Bell Academy, Nashville
"3D-Printed Prosthetics in High Load-Bearing Circumstances"

Felix Bean, Gabriella Ess, Jason Hoang & Neeraj Namburu................Astronomy
School for Science and Math at Vanderbilt, Nashville
"Implication of Possible Orphan Flares Through Flaring States in the OIR Ranges of Fermi-Bright Blazars"

Rebecca Firth & Aidan Henopp........Astronomy
Sullivan South High School, Kingsport
"A Search for Exoplanets in NGC 2355"

John Lazenby..................Environmental Engineering
Chattanooga School for the Arts and Sciences
"Calculating the pH of Streams Damaged by Acid Mine Drainage for Extended Periods of Time"

Dawit Girma, Aakash Sivakumar & Lucas Yarnes..............Engineering
School for Science and Math at Vanderbilt, Nashville
"Construction of an Automated Brine Shrimp Hatchery"

Katerina Johnson..............Environmental Management
Sullivan South High School, Kingsport
"Terraforming Mars"

Srikrishna Dasari..................Climatology
White Station High School, Memphis
"Using Foraminifera Shell Analysis to Correct Climate Reconstruction Methods"

Andrew Campbell, Joshua Floyd & Logan Rash......................Chemistry
Greenfield High School, Greenfield
"Testing for Correlation Between Disease Diagnosis Rates and Heavy Metal Concentrations in Tap Water Sources from Weakley County"

Samaya Baljepally..................Mathematics
Bearden High School, Knoxville
"Mathematical Model to Predict Mortality from Early Onset Pneumonia in Acute Myocardial Infarction"

Lunch Break!