Elise Russ.........................Chemistry
Hillsboro High School, Nashville
"Concrete Durability"

Gideon Torode.........................Physics
Hillsboro High School, Nashville
"Quantifying Perceivable Effects of Alterations in Trumpet Design"

Madalyn Dye.......................Chemical Engineering
Pope John Paul II High School, Hendersonville
"Development of an Inexpensive Device to Measure Lactic Acid Concentration"

Vanessa Ajualip, Anna Chen & Sana Fatah.........................Biology
School for Science and Math at Vanderbilt, Nashville
"Effects of Antibiotic Treatment on Nasonia vitripennis Sex Ratios and Birth Rates"

Helana Khalif, Parwan Ahmed Machningal, Milen Negasi & Kartik Rachakonda........Biology
School for Science and Math at Vanderbilt, Nashville
"Drug-induced Synergism and Acute Sterotypy in Planaria (Dugesia tigrina)"

Rionna Anderson & Sofia Tennent......Biology
School for Science and Math at Vanderbilt, Nashville
"The Effects of Population Density and Feeding Frequency on Growth and Resource Allocation in the Purple Sea Urchin, Strongylocentrotus purpuratus"

Sadaf Shahebrahimi......Environmental Science
Hillsboro High School, Nashville
"Identifying Microplastics Prevalence in High-End Bottled Water Using Nile Red Dye"

Grace Maddox.................Environmental Science
Cleveland High School, Cleveland
"Assessing Stream Health as it Pertains to Salamanders at Four Sites in Polk County, TN"

Lindsay Damon, Trent Jones, Garrett Scott, & Xiyan Zhu...............Computer Engineering
School for Science Math at Vanderbilt, Nashville
"Design and Prototype of an Educational Augmented Reality Scavenger Hunt for the Nashville Zoo"

Lydia Guertin.........................Physics
Fred Page High School, Franklin
"Dielectric Elastomer Actuators: Impact of Foam Tape Density on Flexibility and Feasibility of Future Prosthetics"

Lucy Funk & Eva Randolph.....................Biology
Christ Presbyterian Academy, Nashville
"The Effects of Various Concentrations of Liquid Nicotine on the Sinusoidal Movement of C. elegans"

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TENNESSEE
JUNIOR ACADEMY
OF SCIENCE

ANNUAL MEETING

Via Zoom!
Across Tennessee; from Memphis to Kingsport!

Friday, April 17th 2020

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JUDGES

Dr. M. Gore Ervin ............... Middle Tennessee State University
Dr. Dorothy Phillips American Chemical Soc, Director-at-Large
Dr. Paul Koehler .............. .....Los Alamos National Laboratory

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Papers to be Presented
Student's Name, Research Classification,
School, City, and Title of Paper

Aman Pokal, Elijah Tidwell, Jacob Phillips
& Maxwell Styler.................................Biology
Fred J. Page High School, Franklin
"Indole 3 Acetic Acid, Naphthalene, and Abscisic Acid
Effects on the Growth of the Cyanobacteria (Anabaena)"

Sidney Hinson and Scarlett Purdy............Biology
Christ Presbyterian Academy, Nashville
"The Effects of GMO Foods and Organic Foods on the
Mass, pH, and Reaction Time of Lumbricus terrestris"

Andrew Spencer, Genevieve Jean-Pierre &
Julian Killius.................................Biochemistry
School for Science and Math at Vanderbilt, Nashville
"Cellobiase Production by Fruiting Pleurotus Fungi
Cultivated in Varying Substrate Compositions"

Jennie Bulawa.................................Physics
Greeneville High School, Greeneville
"Construction and Analysis of a Directional Antenna"

Henry Kunath.................................Biology
Montgomery Bell Academy, Nashville
"Development of a "Parkinson's-like" Disease in
C. elegans Using Dextrose and a 6-OHDA Neurotoxin"

PROGRAM
Friday, April 17th, 2020

9:00 - 9:30 am .......... Logging-on to Zoom Meeting
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

Melanie Lick.................................Engineering
Sullivan South High School, Kingsport
"Designing and Building a Solar-powered
Mechanical Prosthetic Arm"

Kathryn Isabella Parks........................Botany
Chattanooga School for the Arts and Sciences
"The Effect of Available Phosphate in a Hydroponic
System on the Production of L-Ascorbic Acid in
Brassicaoleracea var. Acephala"

Talya Bulut.................................Science Education
Hillsboro High School, Nashville
"Teaching Students through STEAM Animation"

Brinly Gray.........................Environmental Management
Columbia Academy, Columbia
"How to Make Biodiesel more Widespread and Accessible"

Daniel Chizikov..........................Nutritional Physiology
White Station High School, Memphis
"The Effect of Different Dietary Fats on the Development of
Obesity-related Health Problems and Lipid Metabolism
Gene Expression in Drosophila"

Emma Fuller.................................Science Education
Hillsboro High School, Nashville
"Effects of Interactive Learning vs. Traditional
Learning on High School Physics Students"

Clayton Winder...........................Computer Science
Hillsboro High School, Nashville
"Creating a Markov-chain based Dungeons and
Dragons Module Generator"

Lunch Break - while
Socially Distanced!