JSHS
JUNIOR SCIENCE AND HUMANITIES SYMPOSIUM

57TH ANNUAL JUNIOR SCIENCE & HUMANITIES SYMPOSIUM

TENNESSEE REGIONAL

MARCH • 10-11 • 2022
<table>
<thead>
<tr>
<th>Time</th>
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<tbody>
<tr>
<td>8:00 - 9:00 AM</td>
<td>BREAKFAST AND REGISTRATION</td>
<td>STUDENT UNION, BALLROOM B</td>
</tr>
<tr>
<td>9:00 - 9:30 AM</td>
<td>OPENING REMARKS</td>
<td>STUDENT UNION, BALLROOM A</td>
</tr>
<tr>
<td></td>
<td>PRESENTATION OF COLORS: UT ARMY COLOR GUARD</td>
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<tr>
<td></td>
<td>WELCOME FROM DR. MICHAEL SIMPSON</td>
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<tr>
<td>9:30 - 11:30 AM</td>
<td>ORAL PRESENTATIONS 1</td>
<td>BALLROOM A</td>
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<tr>
<td>11:30 - 11:40 AM</td>
<td>BREAK</td>
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<tr>
<td>11:40 - 12:40 PM</td>
<td>ORAL PRESENTATIONS 2</td>
<td>BALLROOM A</td>
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<tr>
<td>12:45 - 1:45 PM</td>
<td>LUNCH</td>
<td>BALLROOM B</td>
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<td>ISABEL BOYD, UNIVERSITY OF TENNESSEE</td>
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<tr>
<td>1:45 - 3:45 PM</td>
<td>ORAL PRESENTATIONS 3</td>
<td>BALLROOM A</td>
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<tr>
<td>3:45 - 4:00 PM</td>
<td>BREAK</td>
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<tr>
<td>4:00 - 5:00 PM</td>
<td>ORAL PRESENTATIONS 4</td>
<td>BALLROOM A</td>
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<tr>
<td>5:00 - 6:00 PM</td>
<td>DINNER</td>
<td>BALLROOM B</td>
</tr>
<tr>
<td>6:00 - 7:00 PM</td>
<td>TRIVIA GAMES</td>
<td>BALLROOM B</td>
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</tbody>
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## PROGRAM AND AGENDA

**FRIDAY, MARCH • 11• 2022**

**ALL TIMES EST**

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<tr>
<th>Event</th>
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<tr>
<td><strong>BREAKFAST</strong></td>
<td>8:30 - 9:30 AM</td>
<td>BALLROOM B</td>
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<tr>
<td><strong>POSTER PRESENTATIONS</strong></td>
<td>9:30 - 11:30 AM</td>
<td>BALLROOM A</td>
</tr>
<tr>
<td><strong>LUNCH</strong></td>
<td>11:30 - 1:00 PM</td>
<td>BALLROOM B, ALAINA WASHINGTON, HASLAM SCHOLAR</td>
</tr>
<tr>
<td><strong>HERBERT COLLEGE OF AGRICULTURE CAMPUS TOUR</strong></td>
<td>1:00 - 3:00 PM</td>
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<tr>
<td><strong>UNIVERSITY OF TENNESSEE DEPARTMENTAL SPEAKERS</strong></td>
<td>3:00 - 4:00 PM</td>
<td>BALLROOM A</td>
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<tr>
<td><strong>UNIVERSITY OF TENNESSEE BROWSE SESSIONS</strong></td>
<td>4:00 - 5:00 PM</td>
<td>BALLROOM B</td>
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<tr>
<td><strong>DINNER</strong></td>
<td>5:00 - 6:30 PM</td>
<td>BALLROOM B</td>
</tr>
<tr>
<td><strong>TJSHS AWARDS CEREMONY</strong></td>
<td>6:30 - 7:30 PM</td>
<td>BALLROOM A, KEYNOTE SPEAKER, DR. MICHAEL SIMPSON</td>
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</tbody>
</table>
Dr. Michael Simpson is Director of Education and Workforce (E & W) in the Office of Naval Research (ONR). The mission of ONR’s E & W is to ensure access to workers with needed diverse and agile STEM competencies, where and when needed, using approaches with measurable positive benefits. Connected with Dr. Simpson’s direction of ONR’s E&W are several complementary components including Laboratory Workforce Initiatives (e.g., internships including the Science and Engineering Apprenticeship Program and Naval Research Enterprise Internship Program, Naval STEM Coordination activities; ONR STEM initiatives (e.g., ONR STEM grants); participation in the National Defense Science and Engineering Graduate Fellowship); participation in the DoD Science, Mathematics, and Research for Transformation scholarship-for-service program, and all the vital Naval STEM Stakeholders performing DON STEM in their research and everyday communities. Dr. Simpson coordinates Naval STEM efforts with other components of the Department of Defense (including in the tri-Service Junior Science and Humanities Symposium), other entities of the Federal Government and other governments, and with members of the private, nonprofit, and academic sectors.

Dr. Simpson previously chaired the STEM Council of Computer Sciences Corporation (CSC), a company then of 98,000 people in 70 countries. Michael focused corporate and customer attention to the workforce and community benefits and responsibilities of corporate commitments to STEM outreach, education, and worker development through global webinars, in-person sessions, presentations at conferences (including the first US News STEM Solutions conference). Partnerships and networking were essential components and activities. Dr. Simpson functionally linked STEM and diversity workforce development and results by coordinating with CSC’s Diversity Council and Science Fellows Program.

DoD’s Mentor-Protégé Program pairs a mentor (a Federal prime contractor) to help a protégé company thrive. Dr. Simpson worked with several protégé STEM-based small-businesses that benefited DoD, the companies and workers, and society.

Dr. Simpson taught 59 sessions of upper-division/graduate level Science Policy courses as an adjunct professor at the Washington Center. He also maintained direct connection with grass-roots STEM by leading several science fair events in the National Capital area.

Michael’s media, communications, and crisis management experience trace back to his first radio series on energy issues in the SF Bay Area, capabilities used to help guide the Public Affairs offices of the Defense Threat Reduction Agency and of the US Air Force, and that contribute to enhance Naval and ONR STEM communications.

Michael for 25 years advised members and staff of the US Congress about STEM policy as a leader in the US Congressional Research Service, leading both the Life Sciences and Biomedical Policy sections; his STEM policy work on Capitol Hill began in 1981 when he was selected as the American Association for the Advancement of Science/CRS Science Fellow for that year.

Michael’s interdisciplinary expertise that he brings to Education & Workforce/ONR STEM leadership is suggested by his earned Doctor of Environmental Sciences and Engineering degree from UCLA, Master of Science in Energy and Resources from UC Berkeley, Master of Science in Biological Sciences from USF, and Artis Baccalaureate in Biological Sciences from UC Berkeley.
STUDENT PRESENTATIONS
ORAL
THURSDAY, MARCH • 10 • 2022
ALL TIMES EST

Oral Session 1 9:30-11:30 AM

9:30 Patton Duvall, Columbia Central High School
Medicine & Health/Behavioral Sciences
Snakes and Ladders: Climbing Beyond Fear

9:50 Clara Bunnell, Central Magnet School
Medicine & Health/Behavioral Sciences
Accuracy of Personality Perception Based on Physical Appearance

10:10 Rebecca Klukowski, Central Magnet School
Medicine & Health/Behavioral Sciences
Examining the Effects of Opera Music on Emotions

10:30 Kallie Latham, Cleveland High School
Medicine & Health/Behavioral Sciences
Usage of Data of The Greenway as it Relates to The Development of Cleveland, Tennessee

10:50 Madison Cline, Columbia Central High School
Medicine & Health/Behavioral Sciences
The Effect of Nicotine on the Heartrate and Burrowing Rate of Lumbriculus variegatus

11:10 Eyrin Kim, Farragut High School
Medicine & Health/Behavioral Sciences
Planning Equitable Accessibility to Dialysis Care: A Case Study of Hurricane Ida

Break 11:30-11:40 PM

Oral Session 2 11:40-12:00 PM

11:40 Shiv Mehta, Ravenwood High School
Medicine & Health/Behavioral Sciences
Affiliation of Psychological factors and Instant Gratification in Promoting Physician Practice Guideline Adherence

12:00 Sidney Ozcan, Oak Ridge High School
Mathematics & Computer Science
Neutron Image Reconstruction Algorithms: Parameter Optimization

12:20 Nicholas Zolnierczuk, Oak Ridge High School
Mathematics & Computer Science
Application of Multi-Class Neural Networks in Metal Additive Manufacturing
StUDENT PRESENTATIONS

ORAL

THURSDAY, MARCH • 10 • 2022
ALL TIMES EST

Oral Session 3  1:45-3:30 PM

1:45 Varun Bussa, Ravenwood High School
Mathematics & Computer Science
An Analysis of Various Machine Learning Models: A Stock Market Application

2:05 Adelaide Dale, Columbia Central High School
Life Sciences
The Efficacy of Colloidal Silver

2:25 Benjamin Yang, McCallie School
Life Sciences
Inflammatory Impact of Microplastics on Human Lung Cells

2:45 Ella Brown, Columbia Central High School
Environmental Science
Pyrocystis Fusiformis vs. the Circadian Rhythm: How does light exposure effect the bioluminescence of Pyrosystis fusiformis?

3:05 Mya Nguyen, Columbia Central High School
Environmental Science
Are plants grown with aquaponic systems or soil more sustainable in terms of yield size and use of ecological resources?

3:25 Ridhima Singh, Farragut High School
Environmental Science
Exploring the Spatial Relationship between Demographic Indicators and the Built Environment of a City

Break

Oral Session 4  3:45-4:00 PM

4:00 Taylor Queen, McMinn County High School
Environmental Science
Saving Our Oceans from their Silent Killer

4:20 Love Patel, McMinn County High School
Environmental Science
Carbon Capture

4:40 Abhirup Chanda, University School
Environmental Science
Red Clover (Trifolium Pratense) Seedling Responses in Microgravity Simulated by Clinotat-Plant Research in Space
STUDENT PRESENTATIONS POSTER

FRIDAY, MARCH • 11 • 2022
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9:30-11:30 AM

Elliana Nath, Central Magnet School
Medicine & Health Behavioral Sciences
Medical Marijuana to Alleviate Symptoms of PTSD

Emilee Ponnwitz, Columbia Central High School
Medicine & Health / Behavioral Sciences
Is High School Math Used Later in Life?

Robert Vogt, Oak Ridge High School
Mathematics & Computer Science
Electrohydrodynamics of Charged Viscous Droplets

Rijul Tandon, Ravenwood High School
Chemistry
In silico study of antifungal Phytochemicals against Covid-19 Associated Mucormycosis
## Participating Schools

<table>
<thead>
<tr>
<th>School</th>
<th>Teacher/ Sponsor</th>
<th>City</th>
<th>County</th>
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<tbody>
<tr>
<td>Central Magnet School</td>
<td>Louis Cowart</td>
<td>Murfreesboro</td>
<td>Rutherford</td>
</tr>
<tr>
<td>Cleveland High School</td>
<td>Dr. Bille Long</td>
<td>Cleveland</td>
<td>Bradley</td>
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<tr>
<td>Columbia Central High School</td>
<td>Emily Stafford</td>
<td>Columbia</td>
<td>Maury</td>
</tr>
<tr>
<td>Farragut High School</td>
<td>Nick Reynolds</td>
<td>Knoxville</td>
<td>Knox</td>
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<tr>
<td>McCallie School</td>
<td>Ashley Posey</td>
<td>Chattanooga</td>
<td>Hamilton</td>
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<tr>
<td>McMinn County High School</td>
<td>Brandi Bridwell &amp; Chelsea Montgomery</td>
<td>Athens</td>
<td>McMinn County</td>
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<tr>
<td>Oak Ridge High School</td>
<td>Deanna Pickel &amp; Jessica Williams</td>
<td>Oak Ridge</td>
<td>Anderson</td>
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<tr>
<td>Ravenwood High School</td>
<td>Elizabeth Askins</td>
<td>Brentwood</td>
<td>Williamson</td>
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<tr>
<td>University School</td>
<td>Dr. Arpita Nandi</td>
<td>Johnson City</td>
<td>Washington</td>
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<tr>
<td>Signal Mountain Middle High School</td>
<td>Lorri Whitney</td>
<td>Signal Mountain</td>
<td>Hamilton</td>
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<tr>
<td>Tellico Plains High School</td>
<td>Mitchel Witt</td>
<td>Tellico Plains</td>
<td>Monroe</td>
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Isabel Boyd is a sophomore studying biomedical engineering at the University of Tennessee, Knoxville. She is a member of the Chancellor’s honors program, the Society of Women Engineers, the Provost’s Student Advisory Council, and is the President of the social and professional STEM sorority Alpha Omega Epsilon.

Her research includes a self-led project about utilizing women-focused outreach efforts to bridge the gender gap across STEM fields as well as helping a team investigate how instructor supportiveness affects students’ anxiety levels in introductory biology courses.

Alaina Washington is a sophomore Haslam Scholar from Chattanooga, TN. She is majoring in honors industrial engineering with a minor in reliability and maintainability engineering at the University of Tennessee. During high school, she completed her Girl Scout Gold Award project, where she advocated for scoliosis awareness in underrepresented communities. Alaina also served as the president of her school's Science Olympiad team, where they attended regional and state competitions.

Currently, she is the logistics chair for Tomorrow's Engineers Today, an engineering outreach event for K-12 girls. She also serves as one of the first four Women in Engineering Ambassadors for the Tickle College of Engineering, where she focuses on the recruitment and retention of female engineers. Alaina finds joy in volunteering within her communities, empowering the future of women engineers, and challenging others to become the best versions of themselves.
Dr. Vasileios Maroulas is a Professor of Mathematics and the Director of AI and Data Science at the National Institute for Mathematical and Biological Synthesis (NIMBioS) at the University of Tennessee Knoxville (UTK). He also holds adjunct appointments at the Business Analytics and Statistics at the Haslam College of Business, and the Bredesen Center's Data Science Engineering at UTK.

He is an Elected Member of the International Statistical Institute, an Editor-in-Chief of AIMS Foundations of Data Science, and an Associate Editor of Springer Statistics and Computing. He served as a Senior Research Fellow at the US Army Research Lab during 2019-2021.

Following his PhD graduation from the Statistics Department at the University of North Carolina at Chapel Hill in 2008, he continued as a Lockheed Martin Postdoctoral Fellow at the Institute for Mathematics and its Applications (IMA) at the University of Minnesota for two years until he joined UTK in 2010. Maroulas was also a Mathematical Sciences Leverhulme Trust Fellow at the University of Bath, UK during 2013-2014.

His research interests span from computational statistics and machine learning to applied probability and computational topology and geometry with applications in data analysis and quantum computing.

His methods have found applications in chemistry, neuroscience, materials science, and biology. His work has been funded by several federal agencies, including AFOSR, ARO, DOE, and NSF; by national labs and private foundations, including ARL, ORNL, the Simons Foundation, and the Leverhulme Trust in the UK; as well as by industry, including Eastman, and Thor Industries.
Dr. Stephanie Drumheller-Horton is a vertebrate paleontologist in the Department of Earth and Planetary Sciences at the University of Tennessee. She received her PhD in geoscience from the University of Iowa. Her research centers on the evolution and behavior of crocodilians and their fossil relatives.

Amanda Lovelace
University of Tennessee
Academic Advisor for the Department of Nuclear Engineering

The Nuclear Engineering Department, at the University of Tennessee-Knoxville, was founded in 1957 - making it the first in the United States. We offer both the traditional track (power, utility, clean energy, etc.) and the radiological track (medical and health physics) of the curriculum. Students can choose to pursue a related minor to increase their knowledge, expertise, and employability.

Minor options include Nuclear Safety, Nuclear Decommissioning & Environmental Management, Reliability & Maintainability Engineering, Concepts of Cybersecurity, or others. Students will have the opportunity to participate in undergraduate research on campus with a faculty member or off campus in a national laboratory setting. Students can also gain valuable experience through internships and co-ops with regional and national companies. In the Fall 2021 semester, the NE Department moved into a new $129 million engineering building with new laboratories. The NE Department is consistently top-ranked, and the Tickle College of Engineering is continually improving in the national rankings.
Industrial Engineering is a diverse discipline where specialized knowledge and skill in mathematics, business, and the sciences combine with engineering analysis and design to solve problems. The Industrial and Systems Engineering Department at UTK has a vision to be known for strong student preparation, pioneering research in systems analytics and operational excellence, and deep engagement with government, private, and non-profit partners.

The Tickle College of Engineering is a hub for research, education, development, and scientific excellence at the University of Tennessee. Founded in 1838, the college now boasts an undergraduate enrollment of well more than 4,600 students across its seven departments. Our alumni come from all 50 states and 80 countries, and include leaders of industry, professional athletes, and nine NASA astronauts.

Beginning in the fall of 2022, environmental engineering will be an undergraduate degree option, joining aerospace engineering, biomedical engineering, chemical engineering, civil engineering, computer engineering, computer science, electrical engineering, industrial engineering, materials science and engineering, mechanical engineering, and nuclear engineering, as well as biosystems engineering, which is run in conjunction with the Herbert College of Agriculture.

Kevin Berg
University of Tennessee
Associate Director of Freshmen Admissions
The University of Tennessee, Knoxville
Get information on how to make Rocky Top your college home!
Dr. Kandace Hollenbach

University of Tennessee
Department of Anthropology and the McClung Museum

Associate Professor; Associate Curator of Paleoethnobotany, McClung Museum of Natural History and Culture

Dr. Kandace Hollenbach’s research is in archaeology; paleoethnobotany; early and historic foodways of peoples of the eastern United States; gender and identity among hunting-gathering peoples; use of landscape and settlement/mobility strategies of hunting-gathering and horticultural peoples; shift from foraging to food production.

Education
- Ph.D. 2005, University of North Carolina - Chapel Hill. Dissertation: Gathering in the Late Paleoindian and Early Archaic Periods in the Middle Tennessee River Valley, Northwest Alabama
- B.A. 1998, Washington University, St. Louis (summa cum laude)

Professional Service
President Elect, Tennessee Council for Professional Archaeology, 2018-2019
Treasurer, Southeastern Archaeological Conference, 2013-2016
Board Member, Tennessee Council for Professional Archaeology, 2013-2015

Awards and Recognitions
C.B. Moore Award for Excellence in Southeastern Archaeology by a Young Scholar, Southeastern Archaeological Conference, 2012
Army ROTC is an educational program designed to provide the college student an opportunity to earn an army commission as a second lieutenant while completing the university requirements for a bachelor’s degree. The program provides leadership training that will develop the skills and attitudes vital to the professional army officer. Upon successful completion of the program and graduation from the university, ROTC cadets are commissioned as second lieutenants and enter either the active Army, Army Reserve, or Army National Guard component.

The military program at the University of Tennessee, Knoxville, pre-dates that of any other state university in the country, having been introduced in 1844. In that year, Professor Albert Miller Lea, a United States Military Academy graduate, organized an infantry company. With the outbreak of the Mexican War, the entire company, as well as thousands of other Tennesseans, volunteered for service in the war. Thus, Tennessee became known as the Volunteer State.

When the University of Tennessee, Knoxville, reopened after the Civil War, a system of military discipline was adapted. A code of military regulations was drawn up and a copy was provided to each student when he matriculated. The entire institution was placed under regular United States Military Academy discipline. The student body was organized into a battalion of cadets, which consisted of four companies fully staffed, armed, and equipped under the command of the commandant and his staff of cadet officers. UT Knoxville remained as a military garrison for a period of six years, until 1877. Military Science continued to be taught, since the university was a Land Grant Institution and the 1862 Act of Congress required instruction in military science.
The MDF is the Department of Energy’s flagship additive manufacturing center, and his research there included thermo-mechanical modeling of large-scale polymer composite AM and in situ thermal monitoring of metal powder bed systems.

Prior to moving to Tennessee, Brett was a Postdoctoral Research Fellow in the Lewis Group in the School of Engineering and Applied Sciences and the Wyss Institute for Biologically Inspired Engineering at Harvard University, where he developed materials and techniques to 3D print short fiber-reinforced epoxy resins to enable bio-inspired, lightweight polymer composites with controlled fiber orientation. Brett received his Ph.D. in Materials from the University of California, Santa Barbara, and his B.S. in Mechanical Engineering from the University of Kentucky.

Current research activities include the development and study of thermoset feedstock materials for AM of lightweight composites, foams, and cellular structures; study of the effects the 3D printing process on properties of composites with anisotropic filler materials; and novel printing techniques to control microstructure and mesostructure in printed composites and cellular materials.
Wilfred Post, PhD Retired Research Scientist

Dr. Wilfred M. Post retired in 2013 as a senior scientist in the ORNL Environmental Sciences Division, a staff member of ORNL’s Climate Change Science Institute (CCSI), and an adjunct professor of Ecology and Evolutionary Biology at the University of Tennessee, Knoxville.

He is a recognized expert on soil carbon dynamics nutrient relationships between soil and vegetation, and the impact of species recomposition on ecosystem processes. He has developed approaches to representing the impact of land-use change and climate change in terrestrial biogeochemistry models. He has more than 100 peer reviewed open literature publications and co-authored two books. Post has a Ph.D. in Ecology from the University of Tennessee, Knoxville, and an M.S. in Botany and a B.S. in Mathematics from the University of Wisconsin, Madison.
Dr. Doris D'Souza, is a Professor of Food Microbiology and Food Virology Sections in the Department of Food Science at the University of Tennessee, Institute of Agriculture.

Her research program includes developing rapid and sensitive molecular methods for foodborne bacterial and viral pathogen detection, tracking and understanding their transmission and persistence; novel and natural control and intervention strategies to enhance food safety and for industrial applications, and genomic approaches to understand and determine modulation of the gut microbiota by bioactives.

Dr. D'Souza earned her B.S. in Microbiology/Biochemistry from St. Xavier’s College, University of Mumbai, India and her Ph.D. in Food Science & Technology (Microbiology) from The University of Georgia, Athens, Georgia. Before joining the University of Tennessee in 2006, Dr. D'Souza was a Postdoctoral Research Associate in the Department of Food Science, North Carolina State University, Raleigh, North Carolina.
JUNIOR SCIENCE AND HUMANITIES SYMPOSIUM, TENNESSEE REGIONAL ADMINISTRATIVE STAFF

Susan Troop
Assistant Director, Pre-College Programs
Pre-College Research Excellence Programs
Office of Undergraduate Admissions
The University of Tennessee, Knoxville

Trixie Stengle
Coordinator, Pre-College Programs
Pre-College Research Excellence Programs
Office of Undergraduate Admissions
The University of Tennessee, Knoxville

Heather McQueary
Associate, Pre-College Programs
Pre-College Research Excellence Programs
Office of Undergraduate Admissions
The University of Tennessee, Knoxville
TENNESSEE SPONSORS AND SUPPORTERS

The Junior Science and Humanities Symposium, Tennessee Regional, is hosted by the University of Tennessee, Knoxville, and is administered through the Pre-College Research Excellence Programs in the Office of Undergraduate Admissions, Division of Enrollment Management. Judges are provided by the University of Tennessee, Knoxville and the Oak Ridge National Laboratory.

NATIONAL SPONSORS

The Junior Science and Humanities Symposium, Tennessee Regional, (JSHS-TN) is jointly sponsored by the research offices of the United States Departments of the Army, Navy, and Air Force in cooperation with leading research universities throughout the nation. The Department of Defense generously provides funding for the National Symposium and the JSHS-TN scholarships. The JSHS-TN program is administered nationally through the National Science Teaching Association.

FINANCIAL SUPPORT

The Junior Science and Humanities Symposium, Tennessee Regional, is provided by a grant from the National Science Teaching Association. The University of Tennessee Pre-College Research Excellence Programs, Office of Undergraduate Admissions, Division of Enrollment Management provides supplementary support.
THE SCIENTIFIC AND EDUCATIONAL PROGRAM

All students will participate in interactive activities to enrich their JSHS experience and to engage with DoD researchers, laboratories, and related STEM organizations and professionals. Unique opportunities for JSHS students include:

- The Student Research Presentations, the highlight of the National JSHS, feature the STEM achievements of outstanding students representing the U.S., Puerto Rico, and the DoD Dependent schools of Europe and the Pacific.
- DoD STEM Experiences allow students and teachers to engage with DoD’s world-class STEM professionals and provide exposure to the Department’s cutting-edge research and technologies.
- Banquet and Awards Ceremony recognizes all participants and announces scholarships awarded to students in each competition category of the oral session categories of the National JSHS competition.

THE COMPETITION

All regional symposia student finalists are invited to present their research at the National JSHS. The top two regional delegates will present their research in the oral session to compete for military-sponsored undergraduate, tuition scholarships. All other regional delegates will present their research in the poster session to compete for cash awards. Sessions will be organized by categories that are selected by the students during the registration process.

THE 60TH NATIONAL JUNIOR SCIENCE & HUMANITIES SYMPOSIUM
U.S. ARMY, NAVY, AND AIR FORCE SPONSORED

APRIL 20 - 23, 2022

The 60th National JSHS will be held April 20-23, 2022, as in person symposium. The National JSHS brings together 245 high school students who qualify by submitting and presenting original scientific research papers in regional symposia held at universities nationwide. Approximately 130 high school teachers, mentors, university faculty, ranking military guests and others also attend and join in encouraging the future generation of scientists and engineers and celebrating student achievement in the sciences.

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IN PARTNERSHIP WITH

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ADMINISTERED BY

The University of Tennessee is an EEO/AA/Title VI/Title IX/Section 504/ADA/ADEA institution in the provision of its education and employment programs and services. All qualified applicants will receive equal consideration for employment and admission without regard to race, color, national origin, religion, sex, pregnancy, marital status, sexual orientation, gender identity, age, physical or mental disability, genetic information, veteran status, and parental status.