

MICHIGAN
JSHS
JUNIOR SCIENCE AND
HUMANITIES SYMPOSIUM



**59th Annual Michigan Regional
Junior Science and Humanities Symposium
Program**



WAYNE STATE
College of Education

February 24, 2023

59th Annual Michigan Regional
JUNIOR SCIENCE AND HUMANITIES SYMPOSIUM

Friday, February 24th, 2023

HOSTED BY

WAYNE STATE UNIVERSITY
College of Education

IN COOPERATION WITH

U.S. Army Development Command (DEVCOM)
Ground Vehicle Systems Center (GVSC)
Warren, MI
&
Administrated by
National Science Teachers Association (NSTA), Arlington, VA

The Junior Science and Humanities Symposium (JSHS)
is a Department of Defense sponsored STEM program
(U.S. Office of the Secretary of Defense and the U.S. Departments of the Army, Navy, and Air Force)



Share on Social Media throughout the day
@ Go_JSJS @go_jshs @JSHSSTEM #JSJS

OBJECTIVES OF THE JUNIOR SCIENCE AND HUMANITIES SYMPOSIUM PROGRAM

1. *To promote research and experimentation in the sciences, mathematics and engineering at the high school level.*
2. *To recognize the significance of research in human affairs and the importance of humane and ethical principles in the applications of research results.*
3. *To search out talented youth and talented teachers; recognize their accomplishments at symposia and encourage their continued interest and participation in the sciences, mathematics, and engineering.*
4. *To expand the horizons of research-oriented students by exposing them to opportunities in the academic, industrial, and governmental communities.*
5. *To increase the number of future adults capable of conducting research and development.*

In order to accomplish these objectives, we enlist the active participation of our local communities in improving the education of our children.

PUBLISHING OPPORTUNITIES

Students who submitted a paper for presentation at this year's JSHS are encouraged to submit their paper for publication. Students planning to submit their paper for publication should first consult with their research mentor(s) and anyone else who collaborated in their research.

Before submitting a paper for publication, check the journal's website and closely follow instructions under *Submission*.

- ***The Journal of Emerging Investigators*** -- a no-fee, open access journal for middle and high school science students.

https://www.emerginginvestigators.org/?gclid=CjwKCAjwzt6LBhBeEiwAbPGOgcyj7OHlvcB3ARGXZqR6CBfaYThlm5DZcePM2z60apV45A03BP5PUhoCzmqQA_vD_BwE

ADMINISTRATION OF JSHS

Dr. Sandra Yarema, Regional Director and Coordinator of JSHS
Associate Professor, Clinical,
College of Education, Wayne State University

JSHS 2023 ADVISORY BOARD

Dr. Matthew Allen

Professor & Chair
Department of Chemistry,
College of Liberal Arts & Sciences
Wayne State University

Mr. Gregory Chappelle

Michigan DoD STEM Coordinator &
HBCU/MI Liaison Officer,
U.S. Army DEVCOM-GVSC

Dr. Helen Durand

Assistant Professor,
Department of Chemical Engineering & Materials
Science, College of Engineering
Wayne State University

Dr. Patricia Hanlan

Detroit Country Day Schools

Dr. Megan McCullen

Director, Gordon L. Grosscup Museum of
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Wayne State University

Ms. Deirdre Nelson

Doctoral Candidate
College of Education
Wayne State University

Dr. Karur Padmanabhan

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Wayne State University

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College of Engineering
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College of Education
Wayne State University

Theresa Ramirez-Zipser

STEM Engagement Coordinator
Academic College Enrichment Services
Wayne State University

Mr. Brandon Schroeder

Michigan Sea Grant Extension Educator
Michigan State University

Ms. Saundra Sumner

Teacher Education
College of Education
Wayne State University

Dr. Jennell White

School of Medicine
Wayne State University



Welcome

**from the JSHS Director
Dr. Sandra Yarema**

Dear Students, Teachers, Parents and Colleagues,

It is my great privilege to welcome you to the 59th annual Michigan Regional Junior Science and Humanities Symposium (JSHS). One again, a group of very talented young men and women from schools across southern Michigan will present their research, in-person, on WSU's campus. I'd like to thank the student's teachers and mentors for the guidance they provided throughout the research process and their families for the support that such activities entail.

An event such as this one cannot be accomplished by one person alone and I would like to express my gratitude to those who help make this event possible each year: the members of the Advisory Board, judges, speakers and support from the College of Education at Wayne State University. Special thanks to Ms. Deirdre Nelson for her help in the planning and running of the symposium, and a special mention of the JSHS partnerships with the Biomedical Career Advancement Program, (BCAP), through the WSU School of Medicine, the COE Upward Bound Program, and the Center for Great Lakes Literacy (CGLL), Michigan Sea Grant Extension. We are extremely grateful for the continued support of volunteers from the U.S. Army Development Command (DEVCOM) Ground Vehicle Systems Center (GVSC).

I would like to give you a brief history of the JSHS, which was established in 1958 by the U.S. Army Research Office. The Office of Naval Research joined in funding of the symposium in 1995, followed by the U.S. Air Force in 1997. In 2023, the JSHS has become a Department of Defense sponsored STEM program (U.S. Office of the Secretary of Defense and the U.S. Departments of the Army, Navy, and Air Force). All facets of the program were previously administered by the Academy of Applied Sciences in coordination with the AEOP, until 2017, when the National Science Teaching Association (NSTA) assumed administration of all the funds and organizing for the National Symposium.

The primary aim of the JSHS is to promote research among high school students. Every year, more than 2,000 students and their teachers participate in forty-nine regional symposia held across the country and in Puerto Rico and the Department of Defense schools in Europe and the Pacific. Students presenting at the regional symposia have the opportunity to receive significant awards in the form of scholarships, payable to the University of their Choice. The first, second and third ranked finalists at each of the regional symposia receive \$2000, \$1500, and \$1000 respectively. The top five finalists from each region are invited to attend the National JSHS, where they again present their research and have the opportunity to receive additional awards. The three finalists in each of the categories at the National JSHS receive \$12,000.00, \$8,000.00 and \$4,000.00 respectively in scholarships. For additional information about the JSHS please visit: www.go.wayne.edu/jsh-symposium and www.jshs.org

Thank you for participating in this year's symposium. I hope your experience is memorable.

Dr. Sandra Yarema, Regional Director, SE MI JSHS

Welcome from the Dean



Dr. Boris Baltes
Interim Dean, College of Education;
Senior Associate Provost for Faculty Affairs &
Associate Vice President of Academic Personnel
Wayne State University

Dr. Boris Baltes is Senior Associate Provost for Faculty Affairs and Associate Vice President of Academic Personnel and is responsible for matters involving faculty and academic staff including overseeing recruitment, appointment, development, academic labor relations, as well as the promotion and tenure process. He also oversees all university type 1 centers as well as the office of teaching and learning. He serves as senior advisor to the provost on all academic matters and represents the provost in all academic matters as requested and is currently serving as interim dean of the College of Education.

Dr. Baltes received his MBA from the University of Wisconsin in 1992 and his PhD in Industrial Organizational Psychology from Northern Illinois University in 1998. He joined the Department of Psychology at Wayne State University that year. Before joining the Provost's office, he served as Chair of the Department of Psychology.

His major research interests include examining biases in performance appraisal, age and workplace issues as well as work-family conflict/balance. His work, including over 170 publications, chapters and presentations, has appeared in many journals including the Journal of Applied Psychology, Organizational Behavior and Human Decision Processes, Journal of Management, and the Journal of Organizational Behavior. He is a guest editor for the Journal of Organizational Behavior and is on the editorial board of various journals. He is also a fellow of the Society for Industrial/Organizational Psychology (a division of the American Psychological Association)

Dr. Baltes will provide the opening remarks at the symposium.

Words From Our Sponsors



Major General Darren L. Werner
Tank-automotive & Armaments Command



Maj. Gen. Darren L. Werner assumed the duties as the Commanding General, U.S. Army Tank-automotive and Armaments Command, Army Materiel Command on June 12, 2020. The command employs thousands of people worldwide and oversees a \$30 billion budget annually. In addition to the command staff at the headquarters located at the Detroit Arsenal, Maj. Gen. Werner oversees activities at the Integrated Logistics Support Center, four depots, two arsenals, the Army's ground equipment supply chain, life cycle management, and sustainment efforts affecting active-duty Army units around the world.

His previous General Officer assignments include Commanding General, 13th Expeditionary Sustainment Command, Fort Hood, Texas, and Director, Strategic Logistics Integration (G-4/5/7), Office of the Deputy Chief of Staff, G-4, United States Army, Washington, D.C.

Maj. Gen. Werner's brigade command was as the Commander, 16th Sustainment Brigade, 21st Theater Sustainment Command, in Germany and OPERATION ENDURING FREEDOM, Afghanistan. His battalion command was as the Commander, 4th Forward Support Battalion, 1st Brigade Combat Team, 4th Infantry Division, Fort Hood, Texas and OPERATION IRAQI FREEDOM, Iraq.

Maj. Gen. Werner was commissioned as a 2nd Lieutenant through the Army Reserve Officer Training Corps at Central Michigan University in 1988 and graduated with a Bachelor of Science degree in biology in 1989. He also holds a master's degree in human resources from Webster University, Missouri, and a master's degree in National Security and Strategic Studies, U.S. Naval War College, Newport, Rhode Island.

During his career he has served overseas in Germany, Jordan, Afghanistan, Iraq, and Korea. His decorations and badges include Legion of Merit (with four bronze oak leaf clusters), Bronze Star Medal (with one bronze oak leaf cluster), Defense Meritorious Service Medal, Meritorious Service Medal (with one silver oak leaf cluster and one bronze oak leaf cluster), Army Commendation Medal (with one bronze oak leaf cluster), Army Achievement Medal (with one bronze oak leaf cluster), Parachutist Badge, and Army Staff Identification Badge.

Maj. Gen. Werner will discuss career opportunities, resources, and the importance of STEM research during the Luncheon.

Keynote Address



Dr. Donna Kashian

**Professor & Director of Environmental Sciences
Department of Biological Sciences
Wayne State University**

**Visiting Scientist: (NOAA)
National Oceanic and Atmospheric Administration
Great Lakes Environmental Research Laboratory**

Dr. Kashian is the director of the Environmental Science program at Wayne State University and professor in Biological Sciences. She received her PhD at the University of Wisconsin. She also serves as one of the two United State representative for the International Joint Commission's science advisory board.

Her work has focused on water quality issues. Specifically, the role of disturbance, including invasive species and contaminants, on aquatic communities. She is a strong proponent of interdisciplinary collaborations incorporating science, policy, sociology, and professionals in addressing complex environmental issues.

Furthermore, centered in a largely urban center, Detroit, MI., her research group approaches some of their science through the lens of environmental justice, as often there is a disproportionate exposure of minority groups to environmental pollutants. She has developed new methods and tools, both physical and mathematical, to improve water quality monitoring. Her research has been implemented into monitoring programs, and community-based educational programs to better inform the public of environmental health threats.

Dr. Kashian will provide the Keynote address during the dinner banquet:

Swimming upstream: Untangling Physiology, Biology, and Management of Aquatic Invasive Species

Campus Tour

Regional JSHS participants will visit select labs in the A. Paul Schaap Chemistry Building & Lecture Hall, Chemistry Department, in the College of Liberal Arts & Sciences.



The Department of Chemistry at Wayne State University is dedicated to research, education, and outreach efforts that benefit Detroit, the State of Michigan and the world. We are committed to educating a diverse undergraduate and graduate student body, advancing chemical knowledge and positively impacting society.

We actively promote a safe and ethical environment that is equitable and inclusive, so that students, staff and faculty may thrive and advance personally and professionally, within Wayne State University and beyond.

<https://clas.wayne.edu/chemistry>

Undergraduate Research at Wayne State University



The Office of Undergraduate Research – Undergraduate Research Opportunities Program (UROP) at Wayne State University provides funds to undergraduate students from disciplines across the university – hard sciences, social sciences, performing arts and humanities – to participate in undergraduate research. Undergraduate research puts theory into practice as students work on projects and are mentored by full-time faculty who are leaders in their field. The funds help cover students’ research activities as well as travel expenses to present their research at local, regional and national conferences.

<https://urop.wayne.edu/>

Interlude with Music

Ian & His Jazz Quartet



The Peer Poster Session will be accompanied by the musical stylings of Ian & his Jazz Quartet. Ian's Jazz Quartet is made up of four current music students, majoring in music performance and composition at Wayne State University.

PROGRAM

Friday, February 24, 2023

8:30 a.m. - 9:00 a.m. *CHECK-IN, NETWORKING, & TECHNOLOGY TESTING*
College of Education Elevator Lobby

- Continental Breakfast Buffet in Lower Level Hallway
- Technology Testing in assigned session rooms

9:00 a.m. - 10:00 a.m. *OPENING SESSION*
(Room 10/30 Lower level)

PRESIDING:

Dr. Sandra Yarema Regional Director - Michigan JSHS
Associate Professor, Clinical,
Science Teacher Education
College of Education
Wayne State University

WELCOME/OVERVIEW OF WAYNE STATE UNIVERSITY:

Dr. Boris Baltes
Interim Dean
College of Education, Wayne State University

ORIENTATION:

Dr. Sandra Yarema
JSHS Regional Director and Coordinator

10:00 a.m. – 12:00 p.m. *PRESENTATION OF STUDENT PAPERS*
College of Education

STUDENT PRESENTATIONS

BREAKOUT ROOM I : 253 Education (2nd floor)

MODERATOR:

Dr. Hilary Marusak
Psychiatry, School of Medicine
Wayne State University

STUDENT PRESENTERS:

Medha Aekka

How Does Autism Affect Mental and Physical Health in Youth?

Triniti Beavers

The Impact of Nutrition on Teenage Mental Health

Pooja Kapoor

Inhibiting Viral Pathogens with Synthetic mRNA Encoding STING Protein

Lauren Kim

*Climate Change: The Effect of Increasing Temperature on *Caenorhabditis elegans**

Tushar Thoppae

How does anxiety affect physical and mental wellness?

Carrington Wash

Nutrition & Health Disparities: A Study of How the Most Vulnerable are Affected

JUDGES:

Hannah Adams: Wayne State University

Dr. Jeanne Barcelona: Wayne State University

Sophie Hanna: Wayne State University

Paula Kane: Wayne State University

STUDENT PRESENTATIONS

BREAKOUT ROOM II: 255 Education (2nd floor)

MODERATOR:

Deirdre Nelson
Doctoral Candidate, STEM Education
Wayne State University

STUDENT PRESENTERS:

Muhammad Arshad

Covid-19 Trends at Hospitals And Its Correlation With Emergence Of Variants

Judy Bai

Predicting Candidate Biomarkers for COVID-19 Associated with Leukemia in Children

Syona Gupta

Assessing Healthcare Workers' Knowledge Regarding Vaccines

Zharia Hunter

Comparison of Prevalence of Prepandemic and COVID-19 Pandemic Influenza Rates

Nabeeha Jalali

Analyzing the Gut Microbiome through Stool Studies of Patients with COVID-19

Rishi Narendra Kumar

Assessing the COVID-19 Outbreak and Prevention Measures in City of Detroit Skilled Nursing Facilities

JUDGES:

David Daniszewski: U.S. Army DEVCOM GVSC

Ritoban Datta: Wayne State University

Mohsen Dianat: U.S. Army DEVCOM GVSC

Tarence Jenkins: U.S. Army DEVCOM GVSC

Raymond Womack: U.S. Army DEVCOM GVSC (ret)

STUDENT PRESENTATIONS

BREAKOUT ROOM III: 179 Education (main level)

MODERATOR:

Dr. Helen Durand
Assistant Professor, Chemical Engineering
College of Engineering
Wayne State University

STUDENT PRESENTERS:

Devarshi Dalal

Use of Deep Learning for Developing Optimal Wrist X-Rays

Vikram Goddla

Autonomous Navigation of Medical Microbots with Deep Reinforcement Learning

Julia Huang

Robust U-Net and Transformer-based Architectures for Automatic Segmentation of Head and Neck Primary Tumor and Lymph Nodes in PET and CT scans Towards Healthcare Applications

Mikul Saravanan

Low-Cost 6-Axis Robot Arm with A Dynamic Soft Gripper

Anirudh Venkat

Exfiltrating Data from An Air-Gapped Computer System

Sonnet Xu

Optimized Thermoelectric Air Conditioning with Integrated Heatsinks

JUDGES:

Kamaljit Chahal: U.S. Army DEVCOM GVSC

Pedro Marrero: U.S. Army DEVCOM GVSC

Dominic Messina: Wayne State University

Kip Nieman: Wayne State University

Henrique Oyama: Wayne State University

STUDENT PRESENTATIONS

BREAKOUT ROOM IV: 357 Education (3rd floor)

MODERATOR:

Vijay George
Mechanical Engineer
U.S. Army DEVCOM GVSC

STUDENT PRESENTERS:

Austin Feng

Single-Cell RNASeq Analysis Reveals IRG1/ACOD1 expression in the Tumor MicroEnvironment

Rohit Mahesh

The Role of Vasoconstriction and Dysregulated Ion Channels in the Protection and Growth of Glioblastoma Multiforme Tumors

Nivedita Medum

Investigation of Protein Paucimannosylation in Liver Cancer

Fiona Samson

MNRR1 Inhibition, a Potential Therapeutic Avenue for Breast Cancer

Reem Siddiqui

Stylists Saving Lives: A program to educate hairstylists in the early detection of skin cancers.

JUDGES:

Robert Effinger: Chief of Staff, U.S. Army DEVCOM GVSC

Nicholas Ferruzzi: U.S. Army DEVCOM GVSC

Charles Sylvester: U.S. Army DEVCOM GVSC

Ryan Wood: U.S. Army DEVCOM GVSC

STUDENT PRESENTATIONS

BREAKOUT ROOM V: Room 250 Education (2nd floor)

MODERATOR:

Brandon Schroeder
Environmental Science Educator
Michigan Sea Grant Extension, MSU

STUDENT PRESENTERS:

Mariajose Galarza-Ramirez

One-Carbon Metabolism in Diabetic Retinopathy

Mounika Katta

Importance of Specific Vaginal Bacteria in Predicting the Clinical Outcome of Oral Metronidazole Treatment of Recurrent Bacterial Vaginosis

Nitya Mahesh

Impact Of Air Pollution On Pediatric Health: Outcomes Related to Respiratory, Skin and Neurological Syndromes in the Detroit region

Veda Mantena

The Effect of Bond Strength on the Energy Difference of Molecular Orbitals

Dhruvi Pattabhi

The Severity of Blood Brain Barrier Dysfunction in Penetrating Compared to Concussive Traumatic Brain Injury

JUDGES:

Dr. Douglas Halleaux: U.S. Army DEVCOM GVSC

Danielle Nelson: U.S. Army DEVCOM GVSC

Angela Scapini: Michigan Sea Grant Extension, MSU

Christopher Scott: U.S. Army DEVCOM GVSC

Nouran Yonis: Wayne State University

STUDENT PRESENTATIONS

BREAKOUT ROOM VI : Room 10/30 Education (lower level)

MODERATOR:

Gregory Chappelle
STEM Coordinator/ STEM Educator
Physicist/ Chemist/ Electrical Engineer
U.S. Army DEVCOM GVSC

STUDENT PRESENTERS:

Yash Bingi

Using Machine Learning to Classify Human Fetal Health and Analyze Feature Importance

Michelle Hua

3D Acoustic Simulation and Optimization Algorithms for Transcranial Focused Ultrasound Delivered with Stereotactic Robotics

Vineet Saravanan

Novel Clickbait Spoiling Algorithm using Natural Language Processing

Prakash Shekhar

Developing an Improved Parallel Gibbs Sampling Algorithm for DNA Motif Findi

Grace Zhang

Audio-Visual Navigation: Re-Evaluation of SoundSpaces's Baseline Model

JUDGES:

David Brown: U.S. Army DEVCOM GVSC

Andrew Kosinski: U.S. Army DEVCOM GVSC

Dr. Ashis Mukhopadhyay: Wayne State University

Richard Pineau: Wayne State University

Albert Schumacher: U.S. Army DEVCOM GVSC (ret)

STUDENT PRESENTATIONS

POSTER SESSION (1:30 – 3:00 pm)
Room 10 Education, (lower level)

MODERATOR:

Mr. Brandon Schroeder
Environmental Science Educator
Michigan Sea Grant Extension
Michigan State University

STUDENT PRESENTERS:

Rishi Chowdhury

Combining Spectrums for Ideal Plant Growth

Omari Ishmael

Aerospace Engineering: Use of Aerial Drone Technology to Monitor Air Quality in Urban Communities

Joshua Miller

Improving Object Detection in Autonomous Vehicles

Dana Odums

Future Forest: Analyzing Allelopathy in Maple Trees

Aanya Shah

The Effect of Varying Region of Interest (ROI) size on BMD, BMC, and TBS Values via DXA Analysis

Bryson Taylor

Tap Watch: Analyzing the Difference in Total Dissolved Solids Across Tributaries Within Great Lakes to Better Understand Human Impact on Drinkable Water Quality

Kevin Yang

Predicting the Genetic Factors Involved in Nicotine Dependence Susceptibility

Kayla Young

Sustainable Packaging: Analyzing the Landfill Avoidance Benefits of Recyclable and Biodegradable Tape and Packing Materials Used in Online Retail Product Packaging

JUDGES:

Gregory Chappelle: U.S. Army DEVCOM GVSC

Richard Pineau: Wayne State University

Angela Scapini: Michigan Sea Grant Extension, MSU

12:00 p.m. – 1:30 p.m. *LUNCH BANQUET*
Room 10/30 (Lower Level)

PRESIDING: **Dr. Sandra Yarema**
College of Education

SPEAKER: **Major General Darren L. Werner**
U.S. Army Tank-automotive & Armaments Command

*TOPIC: Words from Our Sponsors: Career Opportunities, Resources,
& the Importance of STEM Research*

ANNOUNCEMENT OF 6 FINALIST STUDENT PAPERS

- The top 5 regional finalists and an alternate will be selected to advance to National JSHS

1:30 – 2:30 p.m. *CAMPUS TOURS*

- Select Chemistry Labs located in *A. Paul SCHAAP Chemistry Building & Lecture Hall*
- *Wayne State University Book Store*

1:30 – 3:00 p.m. *POSTER SESSION*
Room 10/30 (Lower level)

- Poster Interviews

2:30 p.m. - 3:30 p.m. *JAZZ INTERLUDE & PEER POSTER SESSION*
Room 10/30 (lower level)

- Refreshments
- Jazz Interlude

3:30 p.m. – 5:30 p.m. *FINAL JUDGING*

Room 10/30 (lower level)

- Determine National JSHS Finalist Ranking & Alternate

MODERATOR:

Dr. Karur Padmanabhan

Physics Department
Wayne State University

STUDENT PRESENTERS:

The 6 finalists from each category/session will present again, to establish rank order for participation in the National JSHS, April 12- 15, 2023, Virginia Beach, VA

JUDGES: (Deliberation in room 179 after presentations)

Gregory Chappelle: STEM Coordinator, Educator & Engineer, U.S. Army DEVCOM GVSC

David Daniszewski: Computer Scientist, U.S. Army DEVCOM GVSC

Vijay George: Mechanical Engineer, U.S. Army DEVCOM GVSC

5:30 – 7:00 p.m. *DINNER BANQUET & AWARDS CEREMONY*
Room 10/30 (Lower level)

KEYNOTE SPEAKER:

Dr. Donna Kashian

Professor & Director of Environmental Sciences Department of Biological Sciences
Wayne State University
Visiting Scientist: National Oceanic and Atmospheric Administration (NOAA)
Great Lakes Environmental Research Laboratory

TOPIC:

Swimming upstream: Untangling Physiology, Biology, and Management of Aquatic Invasive Species

AWARDS: **Presentation of Student Speaker Finalist Awards & Regional Poster Prizes**
Dr. Sandra Yarema, Director

**Congratulations to the regional speaker finalists who will
advance to the National JSHS, hosted by the Naval Research
Center, Virginia Beach, VA, April 12– 15, 2023**

CONCLUSION- 59th Annual SE MI Regional JSHS

- * Finalists will receive an email from the National JSHS requesting confirmation of attendance at National JSHS, along with travel & scholarship information. Awardees must reply within THREE DAYS to confirm participation.**
- **Poster Awards will be distributed at the end of the awards ceremony.**

STUDENT RESEARCH PAPER PRESENTERS

Name	School	City
Medha Aekka	Plymouth High School	Canton
Muhammad Arshad	Salem High School	Canton
Judy Bai	Green Hills School	Ann Arbor
Trinity Beavers	Stevenson High School	Livonia
Yash Bingi	Salem High School	Canton
Devarshi Dalal	Troy High School	Troy
Austin Feng	Cranbrook Upper School	West Bloomfield
Mariajose Galarza-Ramirez	Cass Technical High School	Detroit
Vikram Goddla	Detroit Country Day School	Beverly Hills
Syona Gupta	Northville High School	Northville
Michelle Hua	Cranbrook Upper School	West Bloomfield
Julia Huang	Northville High School	Northville
Zharia Hunter	Cass Technical High School	Detroit
Nabeeha Jalali	Salem High School	Canton
Pooja Kapoor	Northville High School	Northville
Mounika Katta	Northville High School	Northville
Lauren Kim	Detroit Country Day School	Beverly Hills
Nitya Mahesh	Salem High School	Canton
Rohit Mahesh	Salem High School	Canton
Veda Mantena	Detroit Country Day School	Beverly Hills
Nivedita Medum	Novi High School	Novi
Rishi Narendra Kumar	Northville High School	Northville
Dhruti Pattabhi	Canton High School	Canton
Fiona Samson	Troy High School	Troy
Mikul Saravanan	Cranbrook Upper School	West Bloomfield
Vineet Saravanan	Cranbrook Upper School	West Bloomfield
Prakash Shekhar	KAMSC	Kalamazoo
Reem Siddiqui	Cranbrook Upper School	West Bloomfield
Tushar Thoppae	Washtenaw International H.S.	Ypsilanti Twp
Anirudh Venkat	Huron High School	Ann Arbor
Carrington Wash	Mercy High School	Farmington Hills
Sonnet Xu	Troy High School	Troy
Grace Zhang	Cranbrook Upper School	West Bloomfield

STUDENT POSTER PARTICIPANTS

Name	School	City
Rishi Chowdhury	Northville High School	Northville
Omari Ishmael	Davis Aerospace Tech. H.S. @ Golightly	Detroit
Dana Odums	The School at Marygrove	Detroit
Aanya Shah	Troy High School	Troy
Bryson Taylor	The School at Marygrove	Detroit
Kevin Yang	Cranbrook Upper School	West Bloomfield
Kayla Young	Renaissance High School	Detroit

**TEACHER/SUPERVISOR/ADMINISTRATIVE
PARTICIPANTS**

Name	School	City
Rebecca Brewer	Troy High School	Troy
Faith Briggs	Biomedical Career Advancement Program-BCAP	Detroit
Andrew Collins	Huron High School	Ann Arbor
Janice Depper	Canton High School	Canton
Charles Dershimer	Green Hills School	Ann Arbor
Kim Garber	Northville High School	Northville
Dr. Patricia Hanlan	Detroit Country Day School	Beverly Hills
Hal Heard	Plymouth, Canton, Salem High Schools	Canton
Dwight Jones	Detroit Public Schools Community District	Detroit
Ms. Rebecca Joyce	Kalamazoo Area Math & Science Center	Kalamazoo
William Kinney	Northville High School	Northville
Stephanie Kokoszka	Cranbrook -Kingswood Upper School	West Bloomfield
Dr. John Lockhart	University Prep Science & Math High School	Detroit
Marcia Lizzio	Salem High School	Canton
John Magoulick	Plymouth High School	Canton
Sara McGavin	Mercy High School	Farmington Hills
James O'Hagan	Stevenson High School	Livonia
Nicole Stawasz	Novi High School	Novi
Alyson Thompson	Washtenaw High School	Ypsilanti Twp
Dr. Jennell White	BCAP (WSU)	Detroit
Keith Young	Ekotek Labs	Detroit

Judges

Hannah Adams

Institute of Gerontology
Wayne State University

Dr. Jeanne Barcelona

Community Health
Kinesiology, Health & Sport Studies
Wayne State University

David Brown

Computer Scientist
U.S. Army DEVCOM GVSC
DoD Personnel

Kamaljit Chahal

Electrical Engineer
U.S. Army DEVCOM GVSC
DoD Personnel

Gregory Chappelle

DoD STEM Coordinator/STEM
Educator/Physicist/Chemist/
Electrical Engineer
U.S. Army DEVCOM GVSC
DoD Personnel

David Daniszewski

Computer Scientist
U.S. Army DEVCOM GVSC
DoD Personnel

Ritoban Datta

Physics/Astronomy
Wayne State University

Mohsen Dianat

Cybersecurity/Technology
U.S. Army DEVCOM GVSC
DoD Personnel

Dr. Helen Durand

Chemical Engineering
Wayne State University

Robert Effinger

Aviation Science/Engineering
Chief of Staff
U.S. Army DEVCOM GVSC
DoD Personnel

Nicholas Ferruzzi

Computer Scientist
U.S. Army DEVCOM GVSC
DoD Personnel

Vijay George

Mechanical Engineer
U.S. Army DEVCOM GVSC
DoD Personnel

Dr. Douglas Halleaux

Weather Scientist
U.S. Army DEVCOM GVSC
DoD Personnel

Sophie Hanna

Institute of Gerontology
Wayne State University

Tarence Jenkins

Computer Scientist
U.S. Army DEVCOM GVSC
DoD Personnel

Paula Kane

Kinesiology, Health & Sport Studies
Wayne State University

Andrew Kosinski

Mechanical Engineering/Robotics
U.S. Army DEVCOM GVSC
DoD Personnel

Pedro Marrero

Mechanical Engineering
U.S. Army DEVCOM GVSC
DoD Personnel

Dr. Hilary Marusak

Psychiatry, School of Medicine
Wayne State University

Dominic Messina

Chemical Engineering
Wayne State University

Danielle Nelson

Computer Science
U.S. Army DEVCOM GVSC
DoD Personnel

Dr. Ashis Mukhopadhyay

Physics/Astronomy
Wayne State University

Kip Nieman

Chemical Engineering
Wayne State University

Henrique Oyama

Chemical Engineering
Wayne State University

Dr. Karur Padmanabhan

Physics Department
Wayne State University

Richard Pineau

Mathematics
Wayne State University

Angela Scapini

Environmental Science Educator
Michigan Sea Grant Extension
Michigan State University

Brandon Schroeder

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*Create and Advance Knowledge, Prepare a Diverse Student Body to Thrive, and Positively
Impact Local and Global Communities*