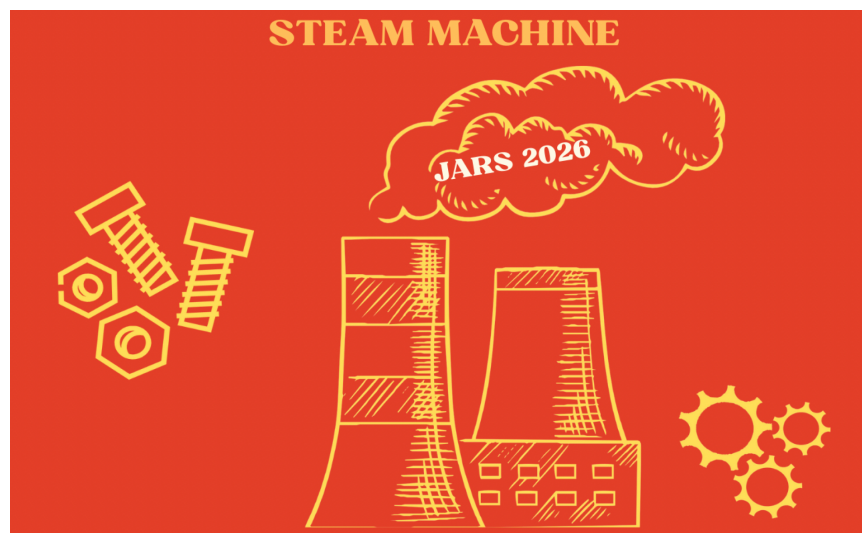




# Joint Annual Research Symposium 2026 (JARS 2026)

Friday, April 24, 2026  
Auditorium and Ballroom, Tompkins Hall



## Agenda

### Friday – April 24, 2026

7:30 a.m. – 8:00 a.m.	JARS Registration Check-in.....	Auditorium, Tompkins Hall
8:00 a.m. – 8:30 a.m.	Opening Ceremony.....	Auditorium, Tompkins Hall
	Welcome.....	Dr. Fan Wu Director Tuskegee University Office of Undergraduate Research
	Opening Remark.....	Dr. Thierno Thiam Provost and Senior Vice President for Academic Affairs Office of the Provost Tuskegee University

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8:30 a.m. – 9:00 a.m. Invited Talk.....Auditorium, Tompkins Hall  
**A Review of Groundwater Quality in Black Belt Counties Versus Upstate New York**  
Sanchez Rolle, Ph.D.  
Assistant Director  
Office of Graduate Access & Retention  
University of Colorado Boulder

9:00 a.m. – 9:30 a.m. JARS Judges Orientation.....Meeting Room B, Tompkins Hall  
Dr. Shecoya White  
Department of Agricultural and Environmental Sciences  
Tuskegee University

9:30 a.m. – 10:45 a.m. Concurrent Grad. Oral Presentation Session 1.....Auditorium  
Tompkins Hall  
Session Chair: Dr. Wordh Hasan

- 📌 **Screening of Lettuce Cultivars and Energy Use Efficiency Using the Nutrient Film Technique in Controlled Environment Greenhouse**  
Bulbul Ahmed, Agricultural and Resource Economics.
- 📌 **Would Cassava Have a Good Production Chance in Alabama as a Tropical Non-Native Crop to Augment Imports into the US in These Times of High Tarrifs?**  
Daniel Sena Ahiabor, Integrative Biosciences.
- 📌 **Exploring the Relationship Between Meteorological Variables and PM2.5 Concentrations Across Cities in the United States**  
Santosh Sapkota, Integrative Biosciences.
- 📌 **Knowledge and Awareness of Cervical Cancer, Human Papillomavirus (HPV), and HPV Vaccines among Women Living in Macon County: A Qualitative Risk Assessment**  
Milahni Wilkerson, Veterinary Science.

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9:30 a.m. – 10:45 a.m. Concurrent Grad. Oral Presentation Session 2... ..Meeting Room A  
Tompkins Hall

Session Chair: Dr. Mohammad Rahman

- 📌 **High-Throughput Screening of MAX Phase Exfoliation Energies Using Foundational Atomistic Models**  
Md Aminul Islam, Materials Science and Engineering.
- 📌 **Low Velocity Impact and Mechanical Analysis of 3D Printed Carbon Fiber Reinforced Polyether-Ether Ketone (CF-PEEK)**  
Eric Montgomery, Materials Science and Engineering.
- 📌 **Resilience of Cloud-Controlled Cyber-Physical Systems Under Sensor Drift and Replay Attacks Using a Reinforcement Learning-Based Cartpole Testbed**  
Imran Jahid Khan, Information Systems and Computer Security.
- 📌 **Turning Milk into Nanomaterials: Ag/Mn-Doped Carbon Dots via a Green Synthesis Route**  
Safiqul Islam, Chemistry.

9:30 a.m. – 12:00 p.m. Undergraduate Poster Session.....Ballroom, Tompkins Hall

10:45 a.m. – 11:00 a.m. Break

11:00 a.m. – 12:15 p.m. Concurrent Grad. Oral Presentation Session 3.....Auditorium  
Tompkins Hall

Session Chair: Dr. Wordh Hasan

- 📌 **Evaluating the Antimicrobial Efficacy and Associated Properties of Selected Essential Oils: Hemp, Basil, and Lemongrass in PHBV Polymers**  
Shannon Willis, Plant and Soil Sciences.
- 📌 **Influence of Impact and Compression Forces on Raw-Product Quality and Shelf Life of Horticultural Produce**  
Gabriella McPherson, Plant and Soil Sciences.
- 📌 **Growth analysis of sweet potatoes varieties and their associated Enzyme activities**  
Kei-shamie McAlmont, Plant and Soil Sciences.
- 📌 **Quality Assessment of Goat Jerky: Investigating the Impact of Muscle Source on Physicochemical and Microbial Properties**  
Elise Broadnax-Jackson, Animal Science.

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11:00 a.m. – 12:15 p.m. Concurrent Grad. Oral Presentation Session 4.....Meeting Room A  
Tompkins Hall

Session Chair: Dr. Mohammad Rahman

- 📌 **Low-cost Humidity Manipulation for Chick Production for Small Farmers**  
Nicolette Sims, Animal Science.
- 📌 **Comparison of pH in Conventional and Plant-Based Meats**  
Madison Lott, Animal Science.
- 📌 **Avian Influenza H5N1 and Its Impact on the Life Science Section**  
Gabrielle Griffiths, Animal Science.
- 📌 **Consumer-Driven Sensory Evaluation of Goat Meat and its Culinary Application in the Tuskegee, Alabama Region**  
MaKai Cody, Animal Science.

12:15 p.m. – 1:30 p.m. Lunch (On Your Own)

1:30 p.m. – 2:45 p.m. Concurrent U.G. Oral Presentation Session 5.....Auditorium  
Tompkins Hall

Session Chair: Dr. Kushagra Kushagra

- 📌 **Evaluating the optical and electronic properties of the VBCB defect in wurtzite boron nitride as potential SPEs and spin qubits from first principles.**  
Brandon McClain, Chemical Engineering.
- 📌 **Plasma-treated biochar incorporated PVDF thin films for energy harvesting applications**  
Taylor Coleman, Chemical Engineering.
- 📌 **A First-Principles Study into The Spin-Qubit Capabilities of Neutral Defects in Bulk Diamond Structures**  
Jamari Parker, Chemical Engineering.
- 📌 **Theoretical Design of Single-Photon Emitters and Spin Qubits in Defective Bulk and Bilayer BeS**  
Tara Smith, Chemistry.

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1:30 p.m. – 2:45 p.m. Concurrent U.G. Oral Presentation Session 6..... Meeting Room A  
Tompkins Hall

Session Chair: Dr. Baiyun Chen

 **From Observation to Operation: An Analysis of Small Animal Surgery and Diagnostic Protocols**


Janiya Spring, Animal Poultry and Veterinary Science.

 **Noise and habitat structure's influence on variations in bird diversity across urban to rural forested sites**

Asia McLendon, Animal Science.

 **The Effects of Silicon on Bolting and Tip-burn To Hydroponically Grown Lettuce Under High Temperatures**

Victoria Pettway, Plant Science and Natural Resources.

 **Microbial Community Structure Variation Across Geographic Region: A Comparative Study of Sub-Arctic and Southeastern U.S. Lakes**

Leah Saunders, Environmental Science.

1:30 p.m. – 4:00 p.m. Graduate Poster Session..... Ballroom, Tompkins Hall

2:30 p.m. – 3:00 p.m. Break

3:00 p.m. – 4:00 p.m. U.G. Oral Presentation Session 7.....Auditorium  
Tompkins Hall

Session Chair: Dr. Kushagra Kushagra

 **Mutation of CDH9 in Autism & Neuronal Overgrowth**

Jimilia Harris, Psychology.

 **The Giant and the Framework: Nigeria, Agenda 2063, and the Unfinished Business of African Development**

Chioma Okoro, Economics.

 **BASK: A Sustainable Approach to Adaptive Furniture Design**

Sandifer Sandifer, Autumn Dickerson, Architecture.

4:00 p.m. – 4:30 p.m. Closing Remark.....Dr. Timothy Turner  
Vice President for Research, Sponsored Programs and Innovation

Tuskegee University



**List of Poster Sessions Participants:**

**9:30 a.m. – 12:00 p.m. Undergraduate Poster Session.....Ballroom, Tompkins Hall**

- U1) Plasma-Assisted Surface Functionalization of Carbon Fiber for Enhanced Mechanical Performance in Nylon 6 Composites**  
Camelia Ingram, Aerospace Engineering.
- U2) The XFormer- A Transforming UAS Concept**  
Donaldson Reuben, Gregory Nelson, Laila Alexis, Kennedy Miller, Akilah Allen, Aerospace Engineering.
- U3) The Effect of Specimen Thickness on the Fracture Morphology and Toughness of 3D-Printed Polymers**  
Emaree Griffin, Aerospace Engineering.
- U4) HPV Presentation Matters: Results of a Six-week Intervention Program Targeting High School and Collegiate Students**  
Adiah McMeo, Austin Stokes, Agribusiness.
- U5) BASK: A Sustainable Approach to Adaptive Furniture Design**  
Sandifer Sandifer, Autumn Dickerson, Architecture.
- U6) Scientific Approaches to Historic Structure Conservation at Tuskegee University**  
Kiana Wilcher, Architecture.
- U7) Optical Analysis of Historic Paint Samples**  
Jayden Woullard, Architecture and Mathematics.
- U8) Dissecting Thermodynamics of Trp Binding to ThaL and Related Flavin Dependent Halogenases**  
Akaylin Echols, Biology.
- U9) Exploring the Link Between Food Insecurity and Coronary Artery Disease Using NHANES Data**  
Nilajah Buchanan, Biology.
- U10) Extracellular Matrix-Derived Chemokines Mediate Smoking-Associated Coronary Atherosclerosis**  
Joi Axem, Biology
- U11) The bio activity and chemical characterization a novel fungus, Hydnoportia Maricela (TULF-1)**  
Madelyn Stovall, Biology.



- U12) From Endosymbiosis to Disease: Mitochondrial Evolution and LON1-Mediated Dysfunction in Chronic Kidney Disease**  
Kiersten Perkins, Biology.
- U13) Development and evaluation of a moisture-wicking prosthetic liner for improved comfort and accessibility in rural populations**  
Nina Johnson, Chemical Engineering.
- U14) Groundwater Level Prediction with Quantum-Enhanced LSTM**  
Micah Gillett, Computer Science.
- U15) Groundwater Level Prediction with Deep Learning**  
Torrean Mozley, Computer Science.
- U16) Integrating AI Powered Robotic Systems For Precision Agriculture And Environmental Monitoring**  
Cameron Jones, Computer Science.
- U17) Classical CNN Vs Quantum CNN Prediction of Botted Internet Traffic**  
Darren Hall, Computer Science.
- U18) Deep Learning Application to Smart Manufacturing**  
Austin Gibson, Computer Engineering.
- U19) The Alignment of a Slime Mold K-5 Module with Southeastern States' Scientific and ESA 4DEE Framework Standards**  
Carmen Woods, General Science Education and Biology.
- U20) An Experimental Study of Moisture Transfer in Perforated Silicone Prosthetic Liners**  
Jesus Gonzalez, Materials Science and Engineering.
- U21) Low temperature plasma treatment to improve adhesion in glass fiber reinforced polypropylene composite.**  
Paishynce Prude, Mechanical Engineering.
- U22) Critical Infrastructure Protection**  
Baron Hendricks, Mechanical Engineering.
- U23) Online and Real-Time 3D Printer Monitoring Using Mtconnect Data Integration Towards Printing Error Diagnostics**  
Diara Lawrence, Mechanical Engineering.
- U24) A scoping Review of the Impact of Nurse-Led Education and Multidisciplinary Care on ICU Admissions in Repeat Cesarean Pregnancies**  
Ogunleye Christianah, Nursing.

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**U25) A scoping Review of the Impact of Nurse-Led Education and Multidisciplinary Care on ICU Admissions in Repeat Cesarean Pregnancies**

Kailah Boyer, Nursing.

**U26) Optical Excitations and Proposed Spin Polarization Cycle in Bulk Hexagonal Boron Nitride Semiconductor for Spin-Qubit Applications**

Tara Smith, Physics.

**U27) What Can Be Learned While Examining the Peripartum Period of Pregnancy to Prevent and Intervene Maternal Death in the Postpartum Stage**

Takiyah Green, Psychology.

**U28) Leveraging Quantum Machine Learning for Household**

Latrell Thompson, Computer Science.

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1:30 p.m. – 4:00 p.m. Graduate Poster Session.....Ballroom, Tompkins Hall

- G1) Development of a reliable detection tool for Haemonchus contortus**  
Mariline Hilaire, Integrative Biosciences.
- G2) TULF-10 Zones of Inhibition**  
Celaya Murray, Integrative Biosciences.
- G3) Beyond Implementation: Analyzing the Scarcity of Student Outcome Data in HBCU CURE Publication**  
Auriela Beverly, Integrative Biosciences.
- G4) The Impact of NFE2L2/NRF2 Missense Mutations in Type 2 Diabetes**  
Kinuthia Kabugi, Integrative Biosciences.
- G5) Understanding Role of Transcription Factor KAISO in Prostate Cancer**  
Shahjalal Chowdhury, Integrative Biosciences.
- G6) Extraction and Characterization of Nanocellulose from Hemp Hurd, Softwood and Hardwood Pulp**  
Samuel Vincent, Integrative Biosciences.
- G7) Characterization of PLA/ Cellulose/ Essential Oil Thin Films for Food Packaging Applications**  
Erin-Nicole Scott, Materials Science and Engineering.
- G8) From ‘Zombiemats’ to Ownership: A Field-Based Model for Converting Southern Micro-Businesses into Employee-Owned Enterprises in the Black Belt Region.**  
Terron Ferguson, Integrative Public Policy and Development.
- G9) AI-Enabled Micro-Enterprises: A Framework for Decentralized Maternal Healthcare and Resource Accessibility in Rural Deserts**  
Deshaun Green, Public Health.
- G10) Marine Derived Antimicrobials in Biodegradable Packaging**  
Elijah Randall, Veterinary Sciences.
- G11) Evaluating the Antimicrobial Efficacy and Associated Properties of Selected Essential oils: Hemp, Basil, & Lemongrass in PHBV polymer**  
Shannon Willis, Plant and Soil Sciences.
- G12) Biopesticide-Based Suppression of Meloidogyne incognita Juveniles in Vitro: Implications for Sustainable Plant Parasitic Nematode Management.**  
Vestine Abera, Plant and Soil Sciences.



- G13) Geographic Food Deserts as Cardiovascular Risk Drivers Mapping the Pathway from Food Insecurity to Maternal Cardiovascular Disease in Pregnant Women across Alabama’s Black Belt Region**  
Drexton Andrews, Occupational Therapy.
- G14) Expression of KISS1 and KISS1R in Prostate, Ovarian, and Breast Cancer: Implications for Tumor Progression**  
Michael Adedeji, Biology.
- G15) Reliability Analysis of Bismuth Doped Solder Joints in Package on Package and Ball Grid Array Electronic Packages**  
Saad Been Mosharof, Mechanical Engineering.
- G16) The Effect of Specimen Thickness and Infill Density on the Fracture Morphology and Fracture Toughness of 3D-Printed Polymers**  
Landry Samuels, Mechanical Engineering.
- G17) Fracture Toughness Analysis of Ceramic Matrix Composites with Simulated Defects**  
Eric Johnson, Mechanical Engineering.
- G18) Hardness Mapping and Failure Analysis of Flash-butt Welded Rail**  
Al-Rajean Allie, Mechanical Engineering.
- G19) Synthesis, Characterization and Application of High Entropy Alloys under Additive Manufacturing**  
Jesus Gonzalez, Materials Science and Engineering.
- G20) Antimicrobial properties of Hemp Biochar infused polymer Poly-3-hydroxybutyrate-co-3-hydroxyvalerate**  
Jesus Gonzalez, Materials Science and Engineering.
- G21) The impact of Occupational therapy interventions Targeting daily health habits influence postpartum outcomes**  
Jayla Callahan, Materials Science and Engineering.
- G22) A Comparative Study of Classical and Quantum Reinforcement Learning in the CartPole Environment**  
Maliha Hossain, Information Systems and Computer Security.
- G23) The Impact of Breastfeeding on Infants Born with Low Birth Weight in Alabama: Quantitative Risk Assessment**  
Kennede Perry, Public Health.



**G24) A Scoping Review of Maternal Cardiovascular Disease Interventions in the Southern U.S.**

Johnpaul Kagulire, Public Health.

**G25) Process Fingerprinting for Real-Time Monitoring in Smart Manufacturing Applications**

Gregory Omoruyi, Electrical and Computer Engineering.

**G26) Antimicrobial Properties of Hemp Biochar infused Polymer Poly-3-hydroxybutyrate-co-3-hydroxyvalerate**

Alaina Howell, Materials Science and Engineering.

**G27) Quantifying dietary tracking fatigue: A dual-pass LLM analysis of cognitive load and the Stage-Based Model of Personal Informatics**

Onive Zebal, Information Systems and Computer Security.

**G28) Phase-Endolysins for Controlling *Listeria monocytogenes* for Enhancing Food Safety**

Reema Gurung, Biology.

**G29) Microbial Evaluation of Salmonella-Inoculated Fresh Meat Utilizing Advanced Imaging Technologies**

Keshauna Davis, Animal Science.



**JARS 2026 Organizing Committee:**

**Dr. Chastity Bradford**  
**Dr. Olga Bolden-Tiller**  
**Dr. Deloris Alexander**  
**Dr. Vijaya Rangari**  
**Dr. Melissa Reeves**  
**Dr. Michael Henderson**  
**Dr. Abhinav Yadav**  
**Dr. Shecoya White**  
**Dr. Mohammad Rahman**  
**Dr. Baiyun Chen**  
**Dr. Kushagra Kushagra**  
**Dr. Wordh UI Hasan**  
**Dr. Fan Wu**