



# Virginia State University

9<sup>th</sup> Annual

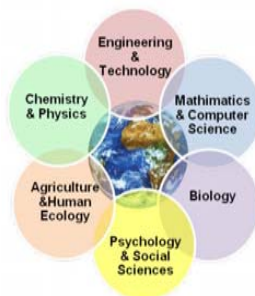
Undergraduate Research Conference

## PROGRAM

March 27, 2015

*Coordinated by*

Undergraduate Research Office  
College of Engineering and Technology  
College of Natural and Health Sciences



National Science Foundation  
HBCU Undergraduate Program



NSF  
WHBR-LSAMP

The VSU Annual Undergraduate Research Conference is a gathering of students, faculty, and administrators from VSU and other institutions.

The conference is held annually each spring and includes oral and poster presentations by undergraduate students about their research in science, technology, engineering, agriculture and mathematics (STEAM), education, and health disparities. The conference is co-sponsored by the National Science Foundation (NSF) HBCU-UP Program and the NSF Louise Stokes Alliance for Minority Participation Program (LS-AMP). VSU recognizes the importance of research and encourages STEAM students to participate in research while earning their degree.

*Participating Institutions  
for the  
VSU 9<sup>th</sup> Annual Undergraduate Research Conference*

Bowie State University  
College of William and Mary  
Howard university  
Hampton University  
Norfolk State University  
Virginia State University

**MORNING**

**OPENING SESSION  
Engineering Bldg—Auditorium**

8:00 – 9:00 Registration - Engineering Bldg, Room 119

9:00 – 9:15 Introduction - Dr. Ali Ansari  
Welcome - Dr. W. Weldon Hill  
Remarks - Dr. Keith Williamson  
Ms. Patrice Randall

9:20 - 12:00 **Oral Presentations - Engineering Bldg**  
*Oral Presentations will be in the Engineering Bldg.  
Rooms: 119, 302, 313*

12:00 - 1:30 **Plenary Session - Jones Dining Hall, 2nd Floor**  
*(Pre-registered participants only)*  
*Remarks: Dr. Pamela Hammond*  
*Introduction of speaker: Mr. Freddie Jones*



**Guest Speaker: Ms. Grindly Johnson**

Ms. Grindly Johnson  
Deputy Secretary of Transportation  
Commonwealth of Virginia

Ms. Johnson previously served as the Chief of Administration at the Virginia Department of Transportation, where she directed the divisions of Civil Rights, Communications, Human Resources, Administrative Services, Learning Center, and Safety and Performance Management for the third largest transportation agency in the nation. She spearheaded the development of the commonwealth's first Business Opportunity and Workforce Development Center – one of only 15 in the nation – to provide disadvantaged business enterprise firms the tools needed to compete for federal-aided contracts.

Ms. Johnson previously served as the agency's Chief of Equal Business and Employee Opportunity, as well as in a number of private-sector positions as an accountant, financial analyst and community relations consultant. She holds a Bachelor's of Science Degree in Accounting from Norfolk State University and has received many community awards and recognitions, including the Community Star for Girls Inc., the fellow for the Sorenson Institute of Political Leadership, and the fellow for the American Swiss Young Leaders.

2:00 - 4:00 **Poster Presentations - Foster Hall, Room 200**  
**Session I: 2:00 - 3:00**  
**Session II: 3:00 - 4:00**

## ORAL PRESENTATIONS

MORNING	GROUP I	Engineering Bldg – Room 119
9:20 – 9:40		PINEMAP undergraduate Fellowship: Education Aim <i>Ahnaia White, Virginia State University</i>
9:40 – 10:00		The Effect of Organic vs. Conventional Management on the Marketable Yield and Berry Quality in Virginia High-Tunnel Strawberry Production <i>Malcolm Galloway, Virginia State University</i>
10:00 – 10:20		Using Seedling Transplants for Faster Establishment of Native Warm-Season Forage Grasses <i>Christos Galanopoulos, Virginia State University</i>
10:20 – 10:40		Agonistic Displays in the "Non-displaying" Slevin's Bunchgrass Lizard, <i>Sceloporus slevini</i> <i>Victoria Brunson, Virginia State University</i>
10:40 – 11:00		Microglia: A Possible Therapeutic Target for Alzheimer's Disease <i>Kelley Buttler, Howard University</i>
11:00 - 11:20		The Effects of Picolinic Acid on LPS- induced Neuroinflammation <i>Amissa Sei, Hampton University</i>
11:20 - 11:40		Tough Love: Tadpole Deposition Behavior in <i>Ameerega trivittata</i> , the Three-striped Poison-Arrow Frog <i>Victoria Klimkowski, Virginia State University</i>

<b>MORNING</b>	<b>GROUP II</b>	<b>Engineering Bldg – Room 313</b>
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- 9:20 – 9:40 Optimization of an Undergraduate Sol-Gel experiment that Explores the Interface between Materials and Transition Metal Chemistry  
*Nicholas Pfab, R. Stiltoner & M. Thompson, Virginia State University*
- 9:40 – 10:00 Preparation and FTIR Characterization of Starch Nanocrystals  
*Effina Jackson, Virginia State University*
- 10:00 – 10:20 Age vs. the Frequency of Dental Visits  
*Mathew Brown, Virginia State University*
- 10:20 – 10:40 Determining the Impact of Infection from Improper Burial Procedures during the Current Ebola Outbreak  
*Miranda Haviland, A. Reeder & T. Gunawansa, Norfolk State University*
- 10:40 – 11:00 Long Term Behavior of Three Species in a Food Chain Model  
*Imani Wood, Virginia State University*
- 11:00 - 11:20 The Role of Subchondral Bone in the Progression of Load-Induced Osteoarthritis  
*Kendra Jones, Howard University*
- 11:20 - 11:40 Integrating ArcGIS and Erdas Imaging in Addressing Security Concerns of Small and Medium-Sized Airports in Virginia  
*Jamie Owen, T. Ogunniyi, D. Whitehead & L. Robinson, Virginia State University*
- 11:40 - 12:00 The Sun-Mow  
*Evan Dirksen, T. Skipper & A. Wheeler, Virginia State University*

<b>MORNING</b>	<b>GROUP III</b>	<b>Engineering Bldg—Room 302</b>
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- 9:20 – 9:40 Autonomous Robotic Design  
*David Johnson & L. Albuquerque, Virginia State University*
- 9:40 – 10:00 Flight Vision: Turbulence Detection  
*Brandon Megna & H. Byrd, Virginia State University*
- 10:00 – 10:20 Infrared Security System  
*Aditya Nepali, M. Marcus & C. Crawford, Virginia State University*
- 10:20 – 10:40 Magnetic Levitation Automation  
*Kaaba White & K. Washington, Virginia State University*
- 10:40 – 11:00 Protection Against Gun Violence  
*Candice Brown, N. Broadnax & A. King, Virginia State University*
- 11:00 - 11:20 Signal Processing with Universal Software Radio Peripheral  
*Brandon Harrington, Virginia State University*
- 11:20 - 11:40 Treasure Application Protection System (TAPS)  
*Britton Bean, M. Bryant & N. Jefferson, Virginia State University*

## POSTER PRESENTATIONS SESSION I

<b>Poster #</b>	<b>AFTERNOON - FOSTER HALL - ROOM 200</b> <b><u>2:00 - 3:00</u></b>
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- 1 Antibiotic Resistant Bacteria in Agricultural Soils: Quantities of Antibiotic Resistance Genes in Soils Impacted by Dairy Manure Inputs  
*Crystal Smitherman, Hampton University*
- 2 Monitoring of Water Quality at Watersheds in Virginia and Mapping the Sites with ArcGIS  
*Mina Williams, Virginia State University*
- 3 Cell Adhesion Molecules and Oocyte Development  
*Joshua Burton, Hampton University*
- 4 Cytotoxicity in Mammalian Cell Culture Treated with Antibiotic Nocathiacin  
*Shalanda Grier, Hampton University*
- 5 Does Turbidity and Temperature have an Effect on the Reproduction of E. Coli?  
*Anqunett Tolliver & J. Coleman, Virginia State University*
- 6 Evaluation of Phenolic-linked Bioactive Functionality of Juneberry and Winter-Hardy Grape for Type 2 Diabetes and Hypertension Management  
*Stephanie Dunton, Virginia State University*
- 7 Goat Genome  
*Rowan Allen, Virginia State University*
- 8 Hyperglycemia Associated with Protease Inhibitors in an Urban HIV-Infected Minority Patient Population  
*Kirsten Lassiter & G. Roache', Virginia State University*
- 9 Identification of Virulence Factors in Vibrio Species Isolates from the 2009 Bermuda Fish Die-off  
*Jordan Bluford, Norfolk State University*
- 10 Identifying the presence of Plasmodium Species in Ethiopian Anopheles Mosquitoes  
*Ennessa Curry, Howard University*
- 11 Immature Neuron Population in the Amygdala of Cognitively Declining Monkeys: an Alzheimer's Study  
*Honoree' Brewton, Howard University*

- Poster #      Session I: *FOSTER HALL - ROOM 200; 2:00 - 3:00***
- 12      Light and Temperature's Effect on Macro-Invertebrates Population Along the Appomattox James River  
*Thorn Raton, D. Mosley & M. Turner, Virginia State University*
- 13      Prevalence of Salmonella on Chicken  
*Cineya Thomas, T. Harold & K. Starr, Virginia State University*
- 14      Antimicrobial Activity of Silver-Silica-Doped Titania Nanocomposite Thin Films Prepared by Sol-Gel Approach  
*Brianna Griffin, Virginia State University*
- 15      Fabrication of Titania-based Nanocomposites with Potential Antimicrobial Properties  
*Kathryn Day & L. Duckett, Virginia State University*
- 16      3D Printing of Wheel Holders – Thermomechanical Design  
*Chris Norfleet, A. Clark & N. Carrington, Virginia State University*
- 17      Deformation Behavior of Fibers  
*James Finnie & J. Perry, Virginia State University*
- 18      Digital Design Manufacturing and Process Monitoring for Impeller Fabrication  
*Marthony Hobgood, Virginia State University*
- 19      Effects of Preheating on the Friction Stir Welding Process  
*Andwele Grant & D. Chavis, Virginia State University*
- 20      Examination of the Relationship between Effective Dose and Risk of Exposure Induced Death due to Space Radiation  
*Roslyn Jones, Virginia State University*
- 21      Extent of Dopant Activation after Microwave and Rapid Thermal Anneals Using Similar Heating Profiles  
*Taliya Gunawansa, Norfolk State University*
- 22      Quantifying the Performance of Spatial and Temporal Early Warning Signals of Disease Elimination  
*Dominic Gray, Norfolk State University*



- Poster #**     ***Session I: FOSTER HALL - ROOM 200; 2:00 - 3:00***
- 23     Effects of Parent-Child Communication on Substance Use in African American Youth  
*Lexus Lang, X. Walker & C. Denslinger, Virginia State University*
- 24     History of Parental Drug Use and the Likelihood of Crack/Cocaine use in a Baltimore City Sample of Drug Users  
*Bria Clark & G. Blanden, Virginia State University*
- 25     Perceived Classroom Structures and the Effects on Students' Mental, Physical, and Social Behavior  
*Micheale Marcus, Virginia State University*
- 26     The Ability of Eating Habits to Predict Cardiovascular Reactivity to Stress  
*Shakira Miles, Virginia State University*
- 27     Biomedical and Genetic Characterization of Antimicrobial Activity Produced by *Pseudomonas* sp. GM24  
Rebecca Castro, Hampton University

## POSTER PRESENTATIONS SESSION II

<b>Poster #</b>	<b>AFTERNOON - FOSTER HALL - ROOM 200</b> <b><u>3:00 - 4:00</u></b>
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- 1 Overview of Water Quality Trends and Presence of E. coli in Virginia Rivers  
*Adrienne Harden, Virginia State University*
- 2 Water Quality Monitoring at Lake Chesdin, Appomattox River, and City Point in Hopewell  
*Latia Jackson, Virginia State University*
- 3 Reduction of Immature Neurons in the Amygdala of Pediatric SIV-Infection  
*Amanda Holmes, Howard University*
- 4 Salmonella Isolation with the Use of Poultry Products  
*Aliya Abramson, Virginia State University*
- 5 Sequence and Genome Mapping of Domestic Goat (*Capra hircus*)  
*Jessica Lyons, N. Vaan & C. Vivas, Virginia State University*
- 6 Sexual Selection vs. Sexual Preference  
*Kayla Street, Virginia State University*
- 7 Testosterone as a Mediator of Variation in Basal Metabolic Rate and Activity in Relation to Reproductive Condition and Photoperiod in White-footed Mice (*Peromyscus leucopus*)  
*Stephanie McDonnel, College of William and Mary*
- 8 The Impact of Fluoridated Water Pollution on the Development of Pre-metamorphic *Rana catesbeiana*  
*Jennifer Bailey & R. Hopkins, Norfolk State University*
- 9 The Impact of the Environmental Pollutants Perfluorooctane Sulfonate (PFOS) and Sodium Fluoride on Aquatic Organisms  
*Herbert Smith & D. Dubose, Norfolk State University*
- 10 The Prevalence of Salmonella on Raw Chicken Skin  
*Angelique Davis & T. France, Virginia State University*
- 11 The Prevalence of Salmonella on Chicken from Different Processors  
*Madison Cook & B. Darrisaw, Virginia State University*

<b>Poster #</b>	<b>Session II: FOSTER HALL - ROOM 200; <u>3:00 - 4:00</u></b>
12	Uncovering PKC $\alpha$ 's Role in Alzheimer's Disease <i>Kevin White, Howard University</i>
13	Ligand and Symmetry Effects on Magnetic Susceptibility: Comparison of High Spin Distorted Tetrahedral Complexes <i>Lakisa Duckett, Virginia State University</i>
14	Vibrational Spectroscopy - Effect of Fatty Acids and Polyphenols in Coconut Oil on Cell Cultures <i>Niesha Paul, F. Baro &amp; B. Redd, Virginia State University</i>
15	New Methods Of Surface Measurement <i>Danielle Bryan &amp; R. Ballard, Virginia State University</i>
16	The Quadcopter Lift Forces <i>Kelvin Parker, W. Dildy &amp; A. Baras, Virginia State University</i>
17	VSU Formula SAE Racecar <i>Raymond Crowder, III, Virginia State University</i>
18	Analyzing The Linear Relationship Between Tenacity, Denier, and Modulus <i>Sharniece Vaughan, Virginia State University</i>
19	Lorenz Model & Its Application <i>Ebony Albritton, Virginia State University</i>
20	The Ability of Perceived Stress and Math Anxiety to Predict Cardiovascular Reactivity to a Math Test <i>Montel Williams, Virginia State University</i>
21	The Association between Depression, Mindfulness, and Alcohol Use in VSU students: A Preliminary Study <i>Bridget Blackshear &amp; G. Blanden, Virginia State University</i>
22	The Correlation of African American Male's Well Being, Depression, and Substance Use Behaviors between Family Communication <i>Lowell Octave, K. Oto &amp; B. Wallace, Virginia State University</i>

- 23 The Effects of Gender on Depression and Math Anxiety  
*Persephone Rogers, Virginia State University*
- 24 The Relationship between Spirituality and Depression in African American College Students  
*Julisha Batieste, Virginia State University*
- 25 Self-Efficacy Study on Generation Innovations Computer Camp  
*Alexia Crumpton, Bowie State University*
- 26 Securing Big Data  
*Sean Gray, Bowie State University*

**HBCU Undergraduate Program (HBCU UP) and Washington Baltimore Hampton Roads-Louis Stokes Alliance for Minority Participation (WBHR-LSAMP)**

**Specific Objectives**

- ◆ Building enduring relationships with other major research institutions, state and federal research agencies and industry.
- ◆ Interest students in and prepare them well for STEM graduate study
- ◆ Institutionalize research experiences for undergraduates, along with GRE tutorials, state-of-the-art STEM seminars, and other assistance
- ◆ Create pathways to a STEM baccalaureate for students at community colleges

**Acknowledgements**

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NSF LSAMP-WBHR Alliance Program

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who contributed their time and effort to this conference**