



2019

Office of Biomedical Research Education and Training Presents:

Vanderbilt University Summer Science Academy Seventeenth Annual Research Symposium

Thursday August 1st, 2019

Schedule:

Morning Poster Session: 10:00 AM – 12:00 PM

Student Research Talks: 12:00 PM – 1:00 PM

Afternoon Poster Session: 1:30 PM – 3:30 PM

Student Research Talks: 3:30 PM – 4:30 PM

Award Ceremony: 4:30 PM – 5:00 PM

The Engineering and Science Building,
Vanderbilt University

The Vanderbilt University Summer Science Academy is pleased to present the seventeenth annual Summer Research Symposium.

Vanderbilt University has a longstanding tradition of training undergraduates in the Biomedical Sciences through summer research programs. In 2003, the Office of Biomedical Research Education & Training established the Vanderbilt Summer Science Academy to bring together all undergraduates conducting biomedical research across the university. Currently, there are twenty research programs participating in the academy. Together we host approximately 100 students each summer from institutions across the country.

This symposium serves to showcase the accomplishments and skills that each student obtained while working on their own independent research projects during their 9 weeks at Vanderbilt. The students present their research results in poster format for faculty mentors, fellow students and staff.

Thank you for attending!

Schedule:

Morning Poster Session

Set up: 9:30 AM – 10:00 AM

Presentation: 10:00 AM – 12:00 PM

Take down: 12:00 PM – 1:15 PM

Student Research Talks, 12:00 PM – 1:00 PM

Afternoon Poster Session

Set up: 1:15 PM – 1:30 PM

Presentation: 1:30 PM – 3:30 PM

Take down: 3:30 PM – 5:00 PM

Student Research Talks, 3:30 PM – 4:30 PM

Award Ceremony, 4:30 PM – 5:00 PM

Thursday, August 1st, 2019

Morning Poster Session 10:00 AM – 12:00 PM:

- BP-ENDURE – Blueprint Program for Enhancing Neuroscience Diversity through Undergraduate Research Education Experiences (Pg 7)
- Chemical Biology Research Experience for Undergraduates (Pg 7-8)
- Vanderbilt Summer Diabetes Research Program (Pg 8-9)
- Leadership Alliance (Pg 9-10)
- MCB – Molecular and Cellular Biology Summer Program (Pg 11)
- MSTP SRP – Medical Scientist Training Program Summer Research Program (Pg 12)
- VBISP – Vanderbilt Biomedical Informatics Summer Program (Pg 12-15)
- U-CRIP – Vanderbilt Undergraduate Clinical Research Internship Program (Pg 16-17)
- VUMC Pipeline (Pg 17-18)
- V-SURE – Vanderbilt-Sewanee Undergraduate Research Experience (Pg 19)

Afternoon Poster Session 1:30 PM – 3:30 PM

- AHA SURE – American Heart Association Supporting Undergraduate Research Experience (Pg 19)
- PAECER – Promoting Academic Excellence with Community Engagement and Research Multicultural Scholars (Pg 20-21)
- PRIDE – Vanderbilt University Medical Center Program for LGBTI Health (Pg 21)
- VB STTP – Vascular Biology Short Term Training Program for Minority Students (Pg 22-23)
- VI4 – Vanderbilt Institute of Infection, Immunology, and Inflammation (Pg 23-24)
- VICC-CURE – Vanderbilt-Ingram Cancer Center, Cancer Undergraduate Research Experience (Pg 24-25)
- VVC – Vanderbilt Vaccine Center (Pg 26)
- VINSE – Vanderbilt Institute of Nanscale Science and Engineering (Pg 28-30)
- Independent Students (Pg 26-28)
- Physics Research Experience for Undergraduates (Pg 30-31)
- Physics Summer Research Interns (Pg 32)

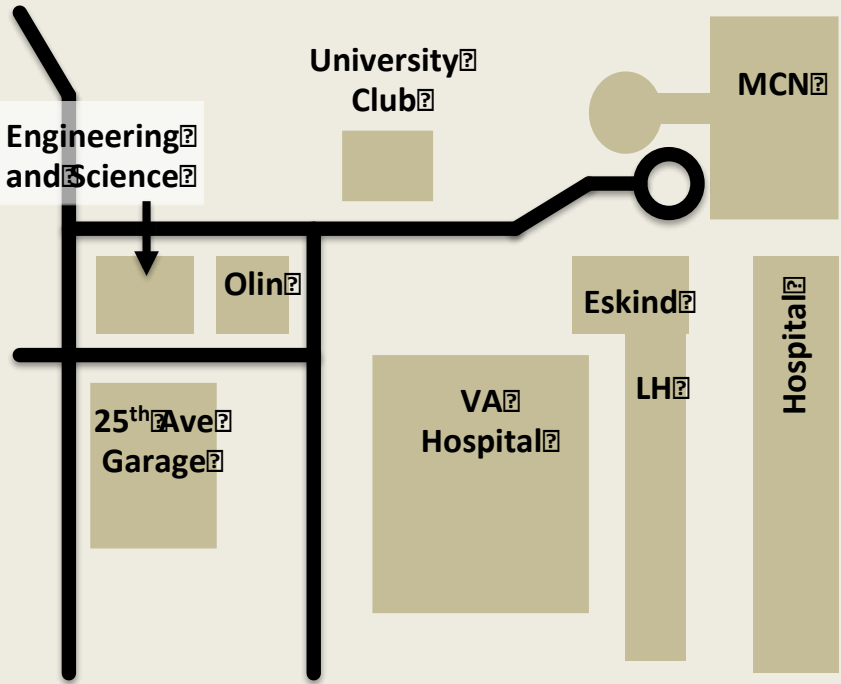
Student Research Talks & Award Ceremony 3:30 PM – 5:00 PM:

- Pg 6

Student Poster and Presentation Index:

- Pg 33

Symposium Location: The Engineering and Science Building



Presentation Titles

**** Indicates Oral Presentation**

*** Indicates Exceptional Abstract**

Selected by volunteer judges from the Vanderbilt research
community

Student Oral Presentations

12:00-1:00 Session

Edith King Amason (pg 19), V-SURE

Karyssa Clark (pg 22), VB-STTP

Hector Alejandro Haddock (pg 20), PAECER

Brionna Rose Tolbert and Yeongha Oh (pg 18), VUMC Pipeline

3:30-4:30 Session

Haleema Shamsuddin (pg 28), Independent

Jordan Stacy (pg 11), MCB

Isaiah Christopher Swann (pg 12), MSTP SRP

Hannah Tan (pg 15), VBISP

Casey Van Kaer (pg 24), VI4

**Oral Presenters marked by ** throughout
Other "Exceptional" Abstracts are marked by ***

Award Presentations

Poster Presentation Awards (6)

Oral Presentation Awards (2)

BP-ENDURE

Morning Poster Session (10:00-12:00)

Mia Yvonne Roberts (M-1)

Hunter College

“Vascular Contributions to Alzheimer's Disease”

Heidi Hamm, Ph.D. Department of Pharmacology

Joyce Woo (M-2) *

New York University

“Optimizing preprocessing pipelines for infant functional MRI data to examine associations between prenatal stress and infant neurodevelopment”

Kathryn Humphreys, Ph.D. Department of Human Development and Psychology

Chem-Bio REU

Morning Poster Session (10:00-12:00)

Nana Kwaku Antwi (M-3)

Cornell University

“Conformational Analysis of Alpha-Synuclein Core Using Two-Dimensional Infrared Spectroscopy”

Lars Plate, Ph.D. Department of Chemistry

Jasper Caige Emerton (M-4)

University of Tennessee Chattanooga

“Synthesis of D-Mannose”

Nathan Schley, Ph.D. Department of Chemistry

Margo Goldfarb (M-5)

Kenyon College

“Sensitivity of Mitochondrial Cytochrome P450s to Adrenodoxin Variation”

F. Peter Guengerich, Ph.D. Department of Biochemistry

Dominic Clifton-Lee Golding (M-6)

Pacific Lutheran University

“Absolute Configuration of 5-hydroxy-prostaglandins”

Claus Schneider, Ph.D. Department of Pharmacology

Kristen Huseman (M-7)

The University of Findlay

“The Role of the Oligomerization of Calprotectin in the Immune Response”

Walter Chazin, Ph.D. Department of Biochemistry

Chem-Bio REU

Morning Poster Session (10:00-12:00)

Mira Bella May (M-8) *

Pomona College

“The Mechanism of Arrestin Phosphate Sensing”

Vsevolod Gurevich, Ph.D. Department of Pharmacology

William Vincent Murphy (M-9)

Motlow State Community College

“Selective alkyl ether cleavage by cationic bis(phosphine)iridium complexes”

Nathan Schley, Ph.D. Department of Chemistry

Monica Pan (M-10)

Austin Peay State University

“Investigating the self-assembly of acetylated and nonacetylated KFEF-8 and FKFE-8 using 2D Infrared Spectroscopy and isotope labeling”

Lauren Buchanan, Ph.D. Department of Chemistry

Ruth Parsons (M-11) *

North Carolina State University

“Investigating C9YJB7 from *Clostridioides difficile* through Protein Crystallography”

Borden Lacy, Ph.D. Department of Pathology, Immunology, and Microbiology

Alexander Strasser (M-12) *

Davidson College

“Synthesis of Scrodentoid F”

Steve Townsend, Ph.D. Department of Chemistry

Diabetes

Morning Poster Session (10:00-12:00)

Layla Marie Ahmadi (M-13)

DePauw University

“Mass Cytometry Immune Profiling of T1D Patients”

Peggy Kendall, M.D. Department of Medicine

Olivia Bruno (M-14)

The University of Alabama

“Role of transgenerational epigenetic imprinting in mitochondrial unfolded protein response suppression induced by loss of hoe-1.”

Maulik Patel, Ph.D. Department of Biological Sciences

Diabetes

Morning Poster Session (10:00-12:00)

Juliann Burkett (M-15) *

The College of New Jersey

“Defining an age-dependent window for immune therapy in Type One Diabetes”

Daniel Moore, M.D., Ph.D. Department of Pediatrics

Abigail Nicole Horrar (M-16)

Wake Forest University

“Functional Characterization of SLC30A8 Splice Variants”

Richard O'Brien, Ph.D. Department of Molecular Physiology and
Biophysics

Leadership Alliance

Morning Poster Session (10:00-12:00)

Benjamin Akande (M-17)

The University of Texas at Dallas

“Investigating the effects of alpha-2 Adrenergic receptor agonism on CRF positive and negative cell populations in the bed nucleus of the stria terminalis”

Danny Winder, Ph.D. Department of Molecular Physiology and
Biophysics

Jacob Armand Brooks (M-18)

Howard University

“Blocking the Bone Destructive Phenotypes of Osteosarcomas through Gli2 Inhibition”

Julie Rhoades, Ph.D. Department of Medicine

Antonio Franco (M-19)

Heritage University

“Analyzing past sediment from the Brahmaputra river to understand if the river could offset sea level rise”

Steven Goodbred, Ph.D. Department of Earth and Environmental
Sciences

Sarah Leticia Graves (M-20)

Hanover College

“Support for Electoral Democracy in the Americas”

Noam Lupu, Ph.D. Department of Political Science

Leadership Alliance

Morning Poster Session (10:00-12:00)

Joshua David McDuffie (M-21)

North Carolina A&T State University

“Cultivating Community Resilience by including Social Vulnerability Considerations in Mitigation Decisions”

Hiba Baroud, Ph.D. Department of Earth and Environmental Sciences

Brielle Morton (M-22)

University of Maryland College Park

“Political Legitimacy in the Americas: A Comparative Study”

Noam Lupu, Ph.D. Department of Political Science

Meghan Briann Mouton (M-23)

Xavier University of Louisiana

“Non-apoptotic function of MCL-1 in neural progenitor cells”

Vivian Gama, Ph.D. Department of Cell and Developmental Biology

Timothy Lamont Nelson (M-24)

Rhodes College

“Histories of the Relationship between Nonprofits and Foundations during the Twentieth-Century in the United States”

Paul Kramer, Ph.D. Department of History

Nainoa Norman Ing (M-25)

Chaminade University of Honolulu

“Progress Towards the Total Synthesis of a Vaccine Adjuvant”

Steven Townsend, Ph.D. Department of Chemistry

Imani Lillian Ross (M-26)

Howard University

“Targeted Lipidomics to Study Alzheimer’s Disease”

Renã Robinson, Ph.D. Department of Chemistry

Edward Thaddeus Wiggins (M-28)

Xavier University of Louisiana

“How do Black engineering and computing doctoral students exhibit an equity ethic?”

Ebony O. McGee, Ph.D. Department of Education, Diversity and STEM Education, Department of Teaching and Learning

Morning Poster Session (10:00-12:00)

Oliver Robert Chalkley (M-29)

University of Iowa

“Examining the Role of the PAPS Transporter in the Biochemical Equilibrium of the Sulfation of Chondroitin”

John York, Ph.D. Department of Biochemistry

Laurie Niederbrach (M-30) *

Hillsdale College

“Role of α -crystallins in the Zebrafish Lens in Response to Oxidative Stress”

Hassane Mchaourab, Ph.D. Department of Molecular Physiology and Biophysics

Eryn Grace Sale (M-31) *

Purdue University

“Investigating Female-Specific Co-expression of PKC- δ , CRF, and CCK Receptors in BNST Cells Following Acute Stress in Mice”

Danny Winder, Ph.D. Department of Molecular Physiology and Biophysics

Shania Vel Sanchez (M-32) *

The University of New Mexico

“The RotaTeq vaccine elicits a broader neutralizing antibody response against contemporary rotavirus outer-capsid proteins than the Rotarix vaccine”

Kristen Ogden, Ph.D. Department of Pathology, Immunology, and Microbiology

Jordan Stacy **

Bellarmino University

“Exploring the DNA Catenation Activity of Topoisomerase IV”

Neil Osherooff, Ph.D. Department of Biochemistry

Sarah Zelle (M-34)

Iowa State University

“Characterization of ELAVL1 binding on viral and host RNA”

Manuel Ascano, Ph.D. Department of Biochemistry

MSTP SRP

Morning Poster Session (10:00-12:00)

Johnathan Bailey (M-35)

University of Alabama at Birmingham

“The Uptake and Handling of Iron in Alveolar Epithelial Cells”

Julie Bastarache, M.D. Department of Medicine

Kamiya Bridges (M-36)

Winston-Salem State University

“ Examination of Lung Injury in a New Model of Necrotizing Enterocolitis”
Kaylon Bruner-Tran, Ph.D. Department of Obstetrics and Gynecology

Maria Teresa Grimaldo (M-37) *

Texas A&M University

“Overcoming Cytotrophoblast-Mediated Immune Suppression of Macrophages in Response to Infection”

David Aronoff, M.D. Department of Medicine

Jakari Harris (M-38)

Hampton University

“The Role of Hypertensive Stretch on Endothelial PD-L1 Expression”

Meenakshi Madhur, M.D., Ph.D. Department of Molecular Physiology and Biophysics

Michelle Angelie Narvaez Ramos (M-39)

University of Puerto Rico at Mayagüez

“Necroptosis-provoked inflammation induces DNA damage in mouse models of Myelodysplastic syndrome”

Sandra Zinkel, M.D., Ph.D. Department of Medicine

Isaiah Christopher Swann (M-40) **

The University of Texas at Dallas

“Jedi-1 deficiency alters sensory neuron excitability through a non-cell autonomous mechanism.”

Bruce Carter, Ph.D. Department of Biochemistry

VBISP

Morning Poster Session (10:00-12:00)

Ashley Batugo (M-41)

University of Maryland, College Park

“Designing an Active Surveillance System for Cancer Outpatients to Identify Unexpected Clinical Deterioration”

Shilo Anders, Ph.D, MPH. and Daniel France, PhD, CRIS

Morning Poster Session (10:00-12:00)

Bryson Rondal Chavis (M-42) *

Clemson University

“Antimicrobial Stewardship in Acute Care Settings with User Center Design Feedback”

Michael Ward, MD, MBA, PhD Department of Emergency Medicine

Liliana Cortes (M-43)

RePublic High School

“Effective Productivity of Data Visualization Within Women’s Health App Features”

Kim Unertl, Ph.D. Department of Biomedical Informatics

Sikta Swarnav Das (M-44)

New Mexico State University

“Examining Patient Portal Message Thread Patterns and Their Impacts on Medication Discontinuation”

Zhijun Yin, Ph.D. Department of Biomedical Informatics

Mohamed Diaoune (M-45)

Nashville State Community College

“Small Area Estimation to Predict Vaccination Rates within Census Tracts”

Alex Cheng, Ph.D. Department of Biomedical Informatics

Merian Momtaz Ayoub Gabra (M-46)

Nashville State Community College

“Creation of Classifier to Identify Genes Related to Rare Diseases”

Tony Capra, Ph.D. Department of Biomedical Informatics

Michelle Gomez (M-47)

Fisk University

“Inclusive and Insightful Data Visualization: An Evaluation of Menstrual Tracking Apps”

Kim Unertl, Ph.D. Department of Biomedical Informatics

Kenny Goodrich (M-48)

University of Miami

“Sensi-filter: A filter for the sequestering of sensitive patient terms within VEVA”

Yaa Kumah-Crystal, M.D. Department of Biomedical Informatics

Peter Ju (M-49) *

University of Illinois at Urbana-Champaign

“Predicting Patient Discharge Disposition in Trauma Patients via Neural Networks”

You Chen, Ph.D. Department of Biomedical Informatics

Morning Poster Session (10:00-12:00)

Michael Samuel Kaltman (M-50) *

The Ohio State University

“Determining the Contribution of Patient Portal Messages to Structured Electronic Medical Records”

Zhijun Yin, Ph.D. Department of Biomedical Informatics

Akbar Khamidov (M-51)

Martin Luther King Jr Magnet High School

“Voice Enabled Tool for Medication Side Effect Identification”

Yaa Kumah-Crystal, MD, MPH, MS Department of Biomedical Informatics

Khamiyah Aboagyewa Kumah-Crystal (M-52)

RePublic High School

“Medical Calculator for Voice-Enabled Project”

Yaa Kumah-Crystal, M.D. Department of Biomedical Informatics

Nancy Liu (M-53)

Vanderbilt University

“Comparison of Citation Statistics from Biomedical Informatics Researcher Rankings”

Allison McCoy, Ph.D. Department of Biomedical Informatics

Jackson McNabb (M-54)

Duke University

“Artificial Intelligence in Clinical Decision Support Implementation: A Systematic Review on Clinical Performance”

Allison McCoy, Ph.D., M.S. Department of Biomedical Informatics

Amanda Jane Mover (M-55)

Middle Tennessee State University

“Comparing the Consistency of Menstruation Prediction across Multiple Mobile Applications”

Kim Unertl, Ph.D. Department of Biomedical Informatics

Khanhly Nguyen (M-56) *

University of Utah

“Automated Classification of Medical Claim Payment Rejection Rates Using Machine Learning”

Bradley Malin, Ph.D. Department of Biomedical Informatics

Niral Patel (M-57)

Nashville State Community College

“Automatic Sensing Documentation”

Daniel Fabbri, Ph.D. Department of Biomedical Informatics

Morning Poster Session (10:00-12:00)

Nicholas Patty (M-58)

Vanderbilt University

“Detecting Phenotype Topics in Stroke Patients via Non-Negative Matrix Factorization and Tensor Factorization on Electronic Health Records”

Wei-Qi Wei, M.D., Ph.D. Department of Biomedical Informatics

Ruke Sam-Ogaga (M-59)

Martin Luther King Magnet High School

“Women’s Health Apps Heuristics Review”

Kim Unertl, Ph.D., M.S. Department of Biomedical Informatics

Daniel Nicholas Simpson (M-60)

Nashville State Community College

“Enumeration of Vocal Commands to Aid in Voice Assistant Development with EnumTool”

Yaa Kumah-Crystal, MD, MPH, MS Department of Biomedical Informatics

Hannah Slater (M-61)

The University of Alabama

“Using Passive Surveillance Data from Cancer Patients to Predict Unplanned Treatment Events using Machine Learning”

Daniel; Shilo France; Anders, PhD, MPH; PhD Center for Research and Innovation in Systems Safety (CRISS)

Hannah Tan (M-62) **

Lehigh University

“Evaluating the Implementation of a Word Cloud Data Visualization of a Patient’s Medical Problems in the Electronic Health Record”

Yaa Kumah-Crystal, MD, MPH, MS Department of Biomedical Informatics

Abasi Diop Walker (M-63)

University of Tennessee-Chattanooga

“Drug-disease interactions listed on the allergy list”

Dara Mize, MD, MS Department of Medicine

Sarah Wan (M-64)

Vanderbilt University

“Artificial Intelligence Clinical Decision Support Systems: A Systematic Review on Patient Outcomes”

Allison Mccoy, Ph.D., M.S. Department of Biomedical Informatics

Morning Poster Session (10:00-12:00)

Christian Antonio Cepeda (M-65)

University of Notre Dame

“The role that analgesic prescriptions to women after childbirth plays in the opioid epidemic: a multipurpose survey of obstetric providers across the United States”

Sarah Osmundson, M.D. Department of Obstetrics and Gynecology

Alexis Edmonds (M-66)

Xavier University of Louisiana

“Predictive Variables Associated with the Heightened Risk of Reintubation Following Cardiac Surgery”

Rob Freundlich, MD, MS Department of Anesthesiology

Kylie Fletcher (M-67)

University of South Carolina

“Iron, a bioessential metal, influences metabolic pathway utilization in macrophages”

Alyssa Hasty, Ph.D. Department of Molecular Physiology and Biophysics

Allison Sijia Liu (M-68)

Pomona College

“Auditory-Visual Synchrony and Social Rhythmic Entrainment in Adults”

Miriam Lense, Ph.D. Department of Otolaryngology

Ethan Kase Maner (M-69)

Lipscomb University

“A Longitudinal Study of Nonparagangliomas within the Jugular Foramen”

James Netterville, M.D. Department of Otolaryngology

Anjali Ravee (M-70) *

Baylor University

“Sex-Specific Cardiac Function and Structure in Aging Mice”

Rolanda Lister, M.D. Department of Obstetrics and Gynecology

Derek Andrew Riffert (M-71)

Indiana University, Bloomington

“Evaluation of HPS4-Rab38 functional interactions on lamellar body targeting in mouse lung epithelial cells.”

Susan Guttentag, M.D. Department of Pediatrics

UCRIP

Morning Poster Session (10:00-12:00)

Kristina Michelle Seiber (M-72)

Lipscomb University

“Failed Surgical Primary Aldosteronism (PA) Cure in Patients with Diagnosed Aldosterone-Producing Adenomas (APAs) Results from Bilateral APA, APCC, or Hypertrophy Presence”

James Luther, M.D. Department of Clinical Pharmacology

Shelbi Sullivan (M-73)

Lipscomb University

“Accuracy of a Novel Histoplasmosis Enzyme Immunoassay to Evaluate Suspicious Lung Nodules: an Internal Validation”

Eric Grogan, M.D., M.P.H. Department of Thoracic Surgery

Joseph Zakaria (M-74)

University of Tennessee- Knoxville

“Changes in skeletal muscle strength associated with inhaled albuterol delivered with nebulized and metered-dose inhaler.”

Donald Arnold, MD, MPH Department of Pediatrics

Pipeline

Morning Poster Session (10:00-12:00)

Yasin Al-Hadid (M-75)

Morehouse College

“Artificial Intelligence as a solution to delay in diagnosis of laryngeal dystonia”

Maria Powell, M.D. Department of Otolaryngology

Abena Green (M-76)

Fisk University

“Cellular Responses to ESAT-6 Antigens in Sarcoidosis Cellular Responses to ESAT-6 Antigens in Sarcoidosis”

Wonder Drake, M.D. Department of Medicine

Allison Mae Harper (M-77)

Berea College

“Examining the Ex Vivo and In Vivo Efficacy of FDA-approved Drugs Repurposed for Tocolytic Use”

Jennifer Herington, Ph.D. Department of Pediatrics

Maria Alejandra Hernandez Diaz (M-78) *

Berea College

“One-carbon metabolism biomarkers and risk for Barrett’s Esophagus and Esophageal Adenocarcinoma”

Martha Shrubsole, Ph.D. Department of Epidemiology

Pipeline

Morning Poster Session (10:00-12:00)

Tahvis Jabari Magruder (M-79)

Morehouse College

“Role of RAGE Signaling in Bronchopulmonary Dysplasia”
John Benjamin, M.D., MPH Department of Pediatrics

Dominique Alyssa Mosley (M-80)

Spelman College

“The relationships between red and processed meat intakes, rectal tissue expression, and colorectal cancer-associated bacteria among individuals with a history of colorectal polyps”

Marth Shrubsole, Ph.D. Department of Epidemiology

Yeongha Oh and Brionna Rose Tolbert (M-81) **

Berea College and Fisk University

“HPV16 E6 antibody as early biomarker for HPV-OPC”

Krystle Kuhs, Ph.D., MPH Department of Epidemiology

Jose Perez (M-82)

Fisk University

“Single-Cell RNA-Sequencing of Experimental Pulmonary Fibrosis”

Jonathan Kropski, M.D. Department of Medicine

Hannah Price (M-83)

Spelman College

“Optimizing Resin-Enrichment Techniques to Enhance OxcyscPILOT for S-nitrosylation”

Rena Robinson, Ph.D. Department of Chemistry

Joseph Strawn (M-84)

Morehouse College

“Atypical Presentations of ARI”

Helen Talbot, M.D. Department of Medicine

Asja Woodard (M-86)

Spelman College

“Changes in HIV antiretroviral therapy and its recommendations from 2010 to 2019”

Timothy Sterling, M.D. Department of Medicine

V-SURE

Morning Poster Session (10:00-12:00)

Edith King Amason (M-87) **

Sewanee: The University of the South

“The Characterization of Metabolic Manifestations Resulting from Genetic Manipulation in ccRCC”

Kimryn Rathmell, M.D., Ph.D. Department of Medicine

Mesgana Dagnachew (M-88) *

Sewanee: The University of the South

“A Glucagon-like Peptide-1 Receptor Variant Alters Intracellular Signaling”

Kevin Niswender, M.D., Ph.D. Department of Medicine

Carl Failing (M-89)

Sewanee: The University of the South

“Enducing Genomic M1dG with Reactive Oxygen Species and Alcohol”

Larry Marnett, Ph.D. Department of Biochemistry

Virginia Farley (M-90)

Sewanee: The University of the South

“Immunological Responses to Alu5 dsRNA Modified Transcripts”

Tom Aune, Ph.D. Department of Rheumatology & Immunology

Emily Hunter Green (M-91)

Sewanee: The University of the South

“Role of Necroptosis in Bone Marrow Inflammation in Mouse Models of Myelodysplastic Syndromes”

Sandra Zinkel, M.D., Ph.D. Department of Medicine

AHA SURE

Afternoon Poster Session (1:30-3:30)

Jelicia Daily (A-1)

Miles College

“Patch clamping of Population Specific in the Cardiac Sodium Channel”

Dan Roden, M.D. Department of Medicine

Akiré Harris (A-2)

Tougaloo College

“Compound discovery for hERG Trafficking Modulators”

Bjorn Knollmann, M.D., Ph.D. Department of Clinical Pharmacology

Lyndon George Rolle (A-3)

Fisk University

“The Genetic Architecture of Peripheral Arterial Disease (PAD) Risk”

Quinn Wells, M.D. Department of Medicine

Afternoon Poster Session (1:30-3:30)

Jazmine Amelia Baylor (A-4)

Tougaloo College

“Effects of Shear Stress on Human Ductus Arteriosus Endothelial Cells”

Elaine Shelton, Ph.D. Department of Pediatrics

Jasmine Shataria Carter (A-5)

Claflin University

“Cardioprotection by Metformin in Diabetic Mouse Coronary Artery Endothelial Cells Exposed to Hypoxia/Reoxygenation”

Matthias Riess, M.D., Ph.D. Department of Anesthesiology

Emmanuel Eziakor (A-6)

Morehouse College

“Is Immune Checkpoint Inhibitor Induced Myocarditis Associated with Cardiac Hypertrophy in Mice Models and Humans”

Javid Moslehi, M.D. Department of Pharmacology

Robert Clark Gresham III (A-7)

Hampton University

“Development of novel therapeutic agents targeting inward rectifier potassium channels for treatment of hypertension”

Jerod Denton, Ph.D. Department of Anesthesiology

Hector Alejandro Haddock **

University of Puerto Rico, Rio Piedras Campus

“Effect of Common Atrial Fibrillation Risk Factors on Pitx2 Expression”

Katherine Murray, M.D. Department of Medicine

Merrick Harris (A-9)

Marshall University

“Exploring how modification of apolipoprotein AI in mouse macrophages affects the interaction of SR-BI and HDL in reverse cholesterol transport”

Macrae Linton, M.D. Department of Medicine

Dontrez Johnson, Jr (A-10)

Tennessee State University

“Hypertension and Heart Failure”

David Patrick, M.D., Ph.D. Department of Medicine

Kristen Joan Kelley (A-11)

Wesleyan College

“Which Nuclear Import Pathway is Required for Endotoxin-Induced Microbial Inflammation?”

Jacek Hawiger, M.D., Ph.D. Department of Medicine

PAECER

Afternoon Poster Session (1:30-3:30)

Jesus Adalberto Perez (A-12) *

University of Puerto Rico in Aguadilla

“Examination of TIE1 Functions in Flow-Mediated Lymphatic Valve Development in vitro”

Scott Baldwin, M.D. Department of Pediatrics

Briana Janeen Simpson (A-13)

Lincoln University of MO

“Leveraging electronic health records to assess factors contributing to health disparity in atherosclerosis between African Americans and European ancestry”

Nancy Cox, Ph.D. Department of Medicine

PRIDE

Afternoon Poster Session (1:30-3:30)

Angie Deng (A-14)

Johns Hopkins University

“LGBTQ Self-Reporting in Medical and Graduate Nursing Program Admissions”

Jesse Ehrenfeld, M.D., M.P.H. Department of Anesthesiology

Reid Meier Gamble (A-15)

Kansas City University of Medicine

“Comprehensive Trans-Geriatric Assessment (CTGA): An Inclusive Clinical Guideline for The Geriatric Transgender Patient in A Primary Care Setting”

Jesse Ehrenfeld, M.D., M.P.H. Department of Anesthesiology

Andrew Pregnal (A-16)

Virginia Tech

“Transgender Patients Healthcare Utilization in Oregon: 2010-2016”

Jesse Ehrenfeld, M.D., M.P.H. Department of Anesthesiology

Hanlyn Tyler (A-17)

University of North Texas

“Volunteer benefits of working with the Trans Buddy Program”

Jesse Ehrenfeld, M.D., M.P.H., FASA Department of Anesthesiology

Afternoon Poster Session (1:30-3:30)

Morgan Bond (A-18)

Norfolk State University

“The Role of MicroRNA21 in Pro-inflammatory Neutrophils”

Carlos Serezani, Ph.D. Department of Medicine

Sydney Lindsay Castellanos (A-19)

Indiana University, Bloomington

“Examination of the Role of PGE2 in Diabetic Skin Host Defense”

Carlos Henrique Serezani, Ph.D. Department of Medicine

Karyssa Clark **

Illinois Wesleyan University

“Regulation of Integrin Expression and Signaling by Gli2 in Tumor-Induced Bone Disease”

Julie Sterling, Ph.D. Department of Medicine

Noyna Francheska Fabre (A-21) *

Hunter College

“Iron Transport Proteins Differentiate Between Polarization States of Adipose Tissue Macrophages”

Alyssa Hasty, Ph.D. Department of Molecular Physiology and Biophysics

Angelica Marie Flores (A-22)

The University of Alabama

“Differences in Pain Between Alzheimer’s Disease and Vascular Dementia”

Ron Cowan, M.D., Ph.D. Department of Psychiatry and Behavioral Sciences

Rachel Brooke Mersfelder (A-23)

Vanderbilt University

“Lipopolysaccharide modification provides transient resistance to powerful antibiotic, Polymyxin B”

Maria Hadjifrangiskou, Ph.D. Department of Pathology, Immunology, and Microbiology

Toni-Mario Ojadi (A-24)

University of Notre Dame

“Weeksella Virosa Potentiates the Biofilm Growth of Uropathogenic E. coli.”

Jonathan Schmitz, M.D., Ph.D. and Maria Hadjifrangiskou Ph.D.

Department of Pathology, Immunology, and Microbiology

Julian Olutunde Oluwole (A-25)

Amherst College

“FcγRIIb Knockout on CD11c+ Cells Shows Atherosclerotic Variations in Male and Female Mice”

Amy Major, Ph.D. Department of Pathology, Immunology, and Microbiology

Afternoon Poster Session (1:30-3:30)

Antiana Richardson (A-26)

Washington University in St. Louis

“The Identification of Transcription Factor Regulating Interferon Expression”

John Karijolic, Ph.D. Department of Pathology, Immunology, and
Microbiology

Leah Rowe (A-27)

University of Arkansas at Pine Bluff

“Identification of isolevuglandin, a highly reactive lipid dicarbonyl, sites of
modification in human apolipoprotein A-I”

Sean Davies, Ph.D. Department of Medicine

Tia Kalise Shutes (A-28)

Middle Tennessee State University

“Identifying Novel Therapies for Breast Cancer Metastasis”

Deborah Lannigan, Ph.D. Department of Pathology, Immunology, and
Microbiology

Julia Dias Thomas (A-29) *

Vanderbilt University

“Intestinal Dysbiosis Links Western-style High-fat Diet, Inflammation, and
Atherosclerosis”

Mariana Byndloss, DVM, Ph.D. Department of Pathology, Immunology,
and Microbiology

Shamira S Turner (A-30)

State University at Old Westbury

“The Identification of HIV-1 Carboxyl Terminal gp41 Region Specific
Interactions with Gag proteins”

Chris Aiken, Ph.D. Department of Pathology, Immunology, and
Microbiology

Afternoon Poster Session (1:30-3:30)

Adnan Askari (A-31)

Yale University

“Plasmid-Based CRISPR/Cas9-Mediated Knockin of STAT3 Y640F Mutations in
Mature T Cells”

Mary Philip, M.D., Ph.D. Department of Medicine

Afternoon Poster Session (1:30-3:30)**Swati Baskiyar (A-32)**

Auburn University

“Integrating RNA Splicing Dynamics into Unsupervised Trajectory Inference Algorithms to Enhance Transcriptomic Modeling of Developmental Transitions”

Ken Lau, Ph.D. Department of Cell and Developmental Biology

Claire Gould (A-33)

University of Glasgow

“Determining which Gag cleavage sites are responsible for IP6 dissociation in HIV-1 maturation”

Chris Aiken, Ph.D. Department of Pathology, Immunology, and Microbiology

Grace Huang (A-34) *

Vanderbilt University

“Cnot6 Regulation of mRNA Stability and Function in CD4+ Effector T Cells”

Heather Pua, M.D., Ph.D. Department of Pathology, Immunology, and Microbiology

Casey Van Kaer (A-35) **

Northeastern University

“Engineering Innate Immune Activators to Enhance the Cancer Immunity Cycle”

John Wilson, Ph.D. Department of Chemical and Biomolecular Engineering

VICC-CURE**Afternoon Poster Session (1:30-3:30)****Vincent Buckman (A-36)**

Washington and Lee University

“Investigating the role of xCT (SLC7A11) in Enhancing Cancer Cell Survival”

Pierre Massion, M.D. Department of Allergy, Pulmonary and Critical Care

Antonio Davon Glenn (A-37)

Vanderbilt University

“TRAIL-Coated Leukocytes to Kill Circulating Tumor Cells in Blood from Prostate Cancer Patients”

Michael King, Ph.D. Department of Biomedical Engineering

VICC-CURE

Afternoon Poster Session (1:30-3:30)

Simone Cyann Lee (A-38) *

Cornell University

“The Role of Microbiota-Mediated Changes in Epithelial Function During Antibiotic-Associated Obesity”

Mariana Byndloss, DVM, Ph.D. Department of Pathology, Immunology, and Microbiology

Brian Keith Young (A-39)

Harvard University

“Immune Organoid Modeling of the Tumor Micro-Environment”

Young Kim, M.D., Ph.D. Department of Otolaryngology

VVC

Afternoon Poster Session (1:30-3:30)

Joseph Genualdi (A-40)

Vanderbilt University

“Isolation and Characterization of Human Monoclonal Antibodies to Yellow Fever Virus”

Jim Crowe, M.D. Department of Pediatrics

Istvan Zain Kovach (A-41)

Vanderbilt University

“Characterization of human monoclonal antibodies to New World Alphaviruses”

James Crowe, M.D. Department of Pediatrics

Apoorva Haresh Mehta (A-42) *

Clemson University

“Antibody-Dependent Blocking of Hantavirus Attachment to Receptor Protocadherin-1”

James Crowe, M.D. Department of Pediatrics

Stephen George Priest (A-43)

Sewanee: The University of the South

“Defining the major antigenic sites on the CCHFV glycoprotein landscape recognized by human monoclonal antibodies”

James Crowe, M.D. Department of Pediatrics

Juliana Qin (A-44)

Vanderbilt University

“Mapping Polyclonal Antibody Responses to HIV-1 Vaccine Candidates”

Ivelin Georgiev, Ph.D. Department of Pathology, Immunology, and Microbiology

Independent

Afternoon Poster Session (1:30-3:30)

Faten Alsomali (A-45)

Alfaisal University

“The Relationship of DAAM2 in the Progression of Diabetic Nephropathy”

Agnes Fogo, M.D. Department of Pathology, Immunology, and
Microbiology

Minna Kristin Apostolova (A-46) *

Vanderbilt University

“Assessing hepatocyte differentiation of liver ductal-derived organoids by gene
expression”

Mary Philip, M.D., Ph.D. Department of Hematology and Oncology

Juan Carlos Caravez (A-47)

California State University Chico

“Positive Allosteric Modulators of Metabotropic Glutamate Receptor 7”

Craig Lindsley, Ph.D. Department of Chemistry

Sara Conwell (A-48)

Vanderbilt University

“Quantitative Analysis of Putative SiRTA Sequences for De Novo Telomere
Addition”

Katherine Friedman, Ph.D. Department of Biological Sciences

Neha Reddy Dudipala (A-49)

Vanderbilt University

“Morphological Analysis of HIV-1 Uncoating in vitro”

Chris Aiken, Ph.D. Department of Pathology, Immunology, and
Microbiology

William Randol Hawkins (A-50)

Centre College

“The Ephrin Receptor, VAB-1, Promotes Dendrite Branching in *C. elegans*”

David Miller, Ph.D. Department of Cell and Developmental Biology

Gyeongmin Hwang (A-51)

Northern Virginia Community College

“Automation of the Filter-Aided sample Preparation (FASP) Method”

Renā Robinson, Ph.D. Department of Chemistry

Keanna Kristina Johnson (A-52)

Tennessee State University

“A Kinetic Model of Tumor-Induced Bone Disease”

Julie Sterling (Rhoades), Ph.D. Department of Medicine

Independent

Afternoon Poster Session (1:30-3:30)

Kevin Lazenby (A-53)

Vanderbilt University

“Generating Functional Astrocytes from Patient-Derived Induced Pluripotent Stem Cells to Model Tuberous Sclerosis Complex”

Kevin Ess, M.D., Ph.D. Department of Pediatrics

Meiling Melzer (A-54)

Vanderbilt University

“Elucidating the role of sFRP2 in modulating organ fibrosis”

Sarika Saraswati, Ph.D. Department of Pathology, Immunology, and Microbiology

Sydney Nelson (A-55)

Vanderbilt University

“An iPSC-derived neuronal model to investigate excitatory and inhibitory contributions to Tuberous Sclerosis Complex pathophysiology”

Kevin Ess, M.D., Ph.D. Department of Pediatrics

Kayla Ortiz (A-56)

Vanderbilt University

“Optimization of Purification and Crystallization of Staphylococcus aureus Methionine Sulfoxide Reductase Proteins”

Borden Lacy, Ph.D. Department of Pathology, Immunology, and Microbiology

Pallavi Pemmireddy (A-57)

Barnard College of Columbia University

“Beta-catenin activation in cardiac fibroblasts differentially affects cardiac wound healing in acute vs. chronic injury”

Sarika Saraswati, Ph.D. Department of Pathology, Immunology, and Microbiology

Megan Alexandra Phillips (A-58) *

Vanderbilt University

“The evolution of genes in the DNA mismatch repair (MMR) pathway across a fungal phylum”

Antonis Rokas, Ph.D. Department of Biological Sciences

Kianna Lasha Robinson (A-59)

Tennessee State University

“CAR T Cell Therapy Solid Epithelial Tumor Model”

Jeff Rathmell, Ph.D. Department of Pathology, Immunology, and Microbiology

Independent

Afternoon Poster Session (1:30-3:30)

Melissa Marie Rowe (A-60) *

Appalachian State University

“Effect of novel cave bacteria metabolites on polarization of human blood-derived macrophages”

Jonathan Irish, Ph.D. Department of Cell and Developmental Biology

Cherie Evelyn Saffold (A-61) *

The University of Tennessee at Martin

“The Role Autophagy in T-cell Development and Thymus Organization”

Luc Van Kaer, Ph.D. Department of Pathology, Immunology, and Microbiology

Narmeen Shaikh (A-62)

Alfaisal University, Riyadh

“Role of integrin $\beta 6$ in the sensitization of glomerular injury secondary to pre-existing tubular injury”

Agnes Fogo, M.D. Department of Pathology, Immunology, and Microbiology

Haleema Shamsuddin (A-63) **

Belmont University

“Investigating the Effects of Lithium Modulation on the Perineuronal Nets of Neuro-2A Cells”

John York, Ph.D. Department of Biochemistry

Anesha Walker (A-64)

Tennessee State University

“Evaluation of Neutrophil Infiltration in Irradiated Tissues”

Marjan Rafat, Ph.D. Department of Chemical and Biomolecular Engineering

Anna Yaschenko (A-65)

University of Maryland, Baltimore County

“Integrating acyl chain degrees of freedom in membrane protein-lipid interactions into Rosetta Software Suite”

Jens Meiler, Ph.D. Department of Chemistry

VINSE

Afternoon Poster Session (1:30-3:30)

Hayat Abdurahman (A-66)

Community College of Baltimore County

“Antifouling coatings on porous silicon biosensors”

Sharon Weiss, Ph.D. Department of Electrical Engineering and Computer Science

Afternoon Poster Session (1:30-3:30)

Matthew Castanon (A-67)

Kennesaw State University

“Gene Knockdown using short interfering RNA (siRNA) loaded Porous Silicon Nanoparticles (PSNPs)”

Craig Duvall, Ph.D. Department of Biomedical Engineering

Elyssa Ferguson (A-68)

University of Maryland, Baltimore County

“Exploring New Cathode Materials to Enable High Energy Density Magnesium Batteries”

Cary Pint, Ph.D. Department of Mechanical Engineering

Alyssa Livingood (A-69)

University of Kentucky

“Nondispersive Infrared Sensing of CO₂ using CdO Films”

Josh Caldwell, Ph.D. Department of Mechanical Engineering

Catherine Ludolph (A-70)

University of Texas, Austin

“Alternating confinement in collagen microtracks in vitro influences cancer cell migration”

Cynthia Reinhart-King, Ph.D. Department of Biomedical Engineering

Inaya Molina (A-71)

Hendrix College

“Polymerization of Aniline by Photosystem I Proteins”

Kane Jennings, Ph.D. Department of Chemical and Biomolecular Engineering

Nicholas Riley (A-72)

Arizona State University

“Fabrication of Multilayer Metasurfaces”

Jason Valentine, Ph.D. Department of Mechanical Engineering

Pamela Joy Tabaquin (A-73)

CUNY Queensborough Community College

“Entrapment of Photosystem I within a Polyaniline Matrix on Carbon Paper for Photocurrent Generation”

David Cliffel, Ph.D. Department of Chemistry

Ellis Thompson (A-74)

Vassar College

“How nanoscale substrate properties influence the growth of VO₂ single crystals”

Richard Haglund, Ph.D. Department of Physics and Astronomy

VINSE

Afternoon Poster Session (1:30-3:30)

Christina Trexler (A-75)

University of Arkansas, Fayetteville

“Synthesis and Characterization of Atomically Thin Materials”

Piran Kidambi, Ph.D. Department of Chemical and Biomolecular
Engineering

Quinton Victor (A-76)

University of Miami

“Portable Reusable Accurate Diagnostics with nanoAntennas for Biomarker
Screening”

Rizia Bardhan, Ph.D. Department of Chemical and Biomolecular
Engineering

Carlos Zuna Largo (A-77)

New York Institute of Technology

“Electrochemical Ammonia Synthesis Using Protonic Ceramic Cells with
BZCYYb4411 Electrolyte and Ag Electrocatalyst”

Kelsey Hatzell, Ph.D. Department of Mechanical Engineering

Megan Dernberger, Davis Fehrman, Hannah Hickman, Kate Johnson (A-78)

Vanderbilt University

“Advance Process Development Techniques for Micro and Nanoscale
Fabrication”

Alice Leach, Ph.D. Vanderbilt Institute of Nanoscale Science and
Engineering

Physics REU

Afternoon Poster Session (1:30-3:30)

Max Brodheim (A-79)

Hobart College

“ Masses and Radii of MML 48: A Pre-Main Sequence Eclipsing Binary”

Keivan Stassun, Ph.D. Department of Physics & Astronomy

Michael Grossbarth (A-80)

Stevens Institute of Technology

“Design and Fabrication of Wireless Clamp-On Bubble Flowmeter for
Quantification of Microfluidic Pump Performance”

Physics REU

Afternoon Poster Session (1:30-3:30)

Rabeya Hussaini (A-81)

Brandeis University

“Four Neutrino Analysis of Reactor Experiments at the Rovno Power Plant Station”

David Ernst, Ph.D. Department of Physics & Astronomy

Lauren Kasper (A-82)

Baldwin-Wallace University

“Search for Direct Stau Production in Proton-Proton Collisions at 13TeV with Vector Boson Fusion Topologies”

Alfredo Gurrola, Ph.D. Department of Physics & Astronomy

Charlie Marrder (A-83)

University of Notre Dame

“Hunting for the Fourth Neutrino by Simulating Anomalous Nuclear Reactor Experiments”

David Ernest, Ph.D. Department of Physics & Astronomy

Joseph Minnich (A-84)

American University

“Surface and Interface Energies of Pyrite-type Materials”

Sokrates Pantelides, Ph.D. Department of Physics & Astronomy

Sofia Panomitos (A-85)

University of North Carolina [Asheville]

“Simulating Relativistic Ar+Ar and p+Ar Collisions Using a Multiphase Transport Model”

Vicki Greene, Ph.D. Department of Physics & Astronomy

RileyAnne Sharpe (A-86)

Centre College

“Study of the Gas Electron Multiplier Detector”

Vicki Greene, Ph.D. Department of Physics & Astronomy

Amanda Wistuba (A-87)

Northwest Missouri State University

“Enhanced Second Harmonic Generation in Au-CuS Nanoparticle Systems”

Richard Haglund, Ph.D. Department of Physics & Astronomy

Physics SRI

Afternoon Poster Session (1:30-3:30)

Samantha Bianco (A-88)

Vanderbilt University

“TESS: The Search for New Worlds”

Keivan Stassun, Ph.D. Department of Physics & Astronomy

Peyton Brown (A-89)

Vanderbilt University

“TESS Follow-Up Analysis”

Keivan Stassun, Ph.D. Department of Physics & Astronomy

Nam Dau (A-90)

Vanderbilt University

“Developing a Data Visualization Portal for the NASA Exoplanet Archive”

Keivan Stassun, Ph.D. Department of Physics & Astronomy

Natalie Gottschlich (A-91)

Vanderbilt University

“Identifying Disk-Eclipsing Objects with TESS”

Keivan Stassun, Ph.D. Department of Physics & Astronomy

Sarah Healy (A-92)

Vanderbilt University

“Finding Young Eclipsing Binary Star Candidates”

Keivan Stassun, Ph.D. Department of Physics & Astronomy

Alyson Hughes (A-93)

Vanderbilt University

“Investigating Eclipsing Binary Star Systems within the Open Cluster Blanco 1”

Keivan Stassun, Ph.D. Department of Physics & Astronomy

Mary Jimenez (A-94)

George Mason University

“Blind Transit Survey of Tess Data for M Dwarf Systems”

Keivan Stassun, Ph.D. Department of Physics & Astronomy

Student Poster and Page Index

Posters starting with "M-" present at the Morning Poster Session: 10:00-12:00

Posters starting with "A-" present at the Afternoon Poster Session: 1:30-3:30

Oral Presenters marked by * throughout

Name	Poster	Pg	Name	Poster	Pg	Name	Poster	Pg
Abdurrahman, H	A-66	28	Green, EH	M-91	19	Pan, M	M-10	8
Ahmadi, LM	M-13	8	Gresham III, RC	A-7	20	Panomitos, S	A-85	31
Akande, B	M-17	9	Grimaldo, MT	M-37	12	Parsons, R	M-11	8
Al-Hadid, Y	M-75	17	Grossbarth, M	A-80	30	Patel, N	M-57	14
Alsomali, F	A-45	26	Haddock, HA	oral	20, 6	Patty, N	M-58	15
Amason, EK	M-87,oral	19,6	Harper, AM	M-77	17	Pemmirreddy, P	A-57	27
Antwi, NK	M-3	7	Harris, A	A-2	19	Perez, J	M-82	18
Apostolova, MK	A-46	26	Harris, J	M-38	12	Perez, JA	A-12	21
Askari, A	A-31	23	Harris, M	A-9	20	Phillips, MA	A-58	27
Bailey, J	M-35	12	Hawkins, WR	A-50	26	Pregnal, A	A-16	21
Baskiyar, S	A-32	24	Healy, S	A-92	32	Price, H	M-83	18
Batugo, A	M-41	12	Hernandez Diaz, MA	M-78	17	Priest, SG	A-43	25
Baylor, JA	A-4	20	Hickman, H	A-78	30	Qin, J	A-44	25
Bianco, S	A-88	32	Horrar, AN	M-16	9	Ravee, A	M-70	16
Bond, M	A-18	22	Huang, G	A-34	24	Richardson, A	A-26	23
Bridges, K	M-36	12	Hughes, A	A-93	32	Riffert, DA	M-71	16
Brodheim, M	A-79	30	Huseman, K	M-7	7	Riley, N	A-72	29
Brooks, JA	M-18	9	Hussaini, R	A-81	31	Roberts, MY	M-1	7
Brown, P	A-89	32	Hwang, G	A-51	26	Robinson, KL	A-59	27
Bruno, O	M-14	8	Jimenez, M	A-94	32	Rolle, LG	A-3	19
Buckman, V	A-36	24	Johnson, Jr, D	A-10	20	Ross, IL	M-26	10
Burkett, J	M-15	9	Johnson, K	A-78	30	Rowe, L	A-27	23
Caravez, JC	A-47	26	Johnson, KK	A-52	26	Rowe, MM	A-60	28
Carter, JS	A-5	20	Ju, P	M-49	13	Saffold, CE	A-61	28
Castanon, M	A-67	29	Kaltman, MS	M-50	14	Sale, EG	M-31	11
Castellanos, SL	A-19	22	Kasper, L	A-82	31	Sam-Ogaga, R	M-59	15
Cepeda, CA	M-65	16	Kelley, KJ	A-11	20	Sanchez, SV	M-32	11
Chalkley, OR	M-29	11	Khamidov, A	M-51	14	Seiber, KM	M-72	17
Chavis, BR	M-42	13	Kovach, IZ	A-41	25	Shaikh, N	A-62	28
Clark, K	oral	22,6	Kumah-Crystal, KA	M-52	14	Shamsuddin, H	A-63, oral	28,6
Conwell, S	A-48	26	Largo, CZ	A-77	30	Sharpe, R	A-86	31
Cortes, L	M-43	13	Lazenby, K	A-53	27	Shutes, TK	A-28	23
Dagnachew, M	M-88	19	Lee, SC	A-38	25	Simpson, BJ	A-13	21
Daily, J	A-1	19	Liu, AS	M-68	16	Simpson, DN	M-60	15
Das, SS	M-44	13	Liu, N	M-53	14	Slater, H	M-61	15
Dau, N	A-90	32	Livingood, A	A-69	29	Stacy, J	oral	11,6
Deng, A	A-14	21	Ludolph, C	A-70	29	Strasser, S	M-12	8
Dernberger, M	A-78	30	Magruder, TJ	M-79	18	Strawn, J	M-84	18
Diaoune, M	M-45	13	Maner, EK	M-69	16	Sullivan, S	M-73	17
Dudipala, NR	A-49	26	Marrder, C	A-83	31	Swann, IC	M-40,oral	12,6
Edmonds, A	M-66	16	May, MB	M-8	8	Tabaquin, PJ	A-73	29
Emerton, JC	M-4	7	McDuffie, JD	M-21	10	Tan, H	M-62,oral	15,6
Eziakor, E	A-6	20	McNabb, J	M-54	14	Thomas, JD	A-29	23
Fabre, NF	A-21	22	Mehta, AH	A-42	25	Thompson, E	A-74	29
Failing, C	M-89	19	Melzer, M	A-54	27	Tolbert, BR	M-81,oral	18,6
Farley, V	M-90	19	Mersfelder, RB	A-23	22	Trexler, C	A-75	30
Fehrman, D	A-78	30	Minnich, J	A-84	31	Turner, SS	A-30	23
Ferguson, E	A-68	29	Molina, I	A-71	29	Tyler, H	A-17	21
Fletcher, K	M-67	16	Morton, B	M-22	10	Van Kaer, C	A-35, oral	24,6
Flores, AM	A-22	22	Mosley, DA	M-80	18	Victor, Q	A-76	30
Franco, A	M-19	9	Mouton, MB	M-23	10	Walker, A	A-64	28
Gabra, MM	M-46	13	Mover, AJ	M-55	14	Walker, AD	M-63	15
Gamble, RM	A-15	21	Murphy, WV	M-9	8	Wan, S	M-64	15
Genualdi, J	A-40	25	Narvaez Ramos, MA	M-39	12	Wiggins, ET	M-28	10
Glenn, AD	A-37	24	Nelson, S	A-55	27	Wistuba, A	A-87	31
Goldfarb, M	M-5	7	Nelson, TL	M-24	10	Woo, J	M-2	7
Golding, DC	M-6	7	Nguyen, K	M-56	14	Woodard, A	M-86	18
Gomez, M	M-47	13	Niederbrach, L	M-30	11	Yaschenko, A	A-65	28
Goodrich, K	M-48	13	Norman Ing, N	M-25	10	Young, BK	A-39	25
Gottschlich, N	A-91	32	Oh, Y	M-81,oral	18,6	Zakaria, J	M-74	17
Gould, C	A-33	24	Ojadi, T	A-24	22	Zelle, S	M-34	11
Graves, SL	M-20	9	Oluwole, JO	A-25	22			
Green, A	M-76	17	Ortiz, K	A-56	27			

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The Vanderbilt University School of Medicine
Summer Science Academy Research Symposium is
supported by the following funding support

- **Vanderbilt Office of Biomedical Research Education and Training**
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- National Institute of Health:
 - NHLBI R25, Vascular Biology Short Term Training Program for Minority Students
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 - NIH funding to the Vanderbilt Vaccine Center
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