

VANDERBILT SUMMER SCIENCE ACADEMY

VS SA

16th Annual Student Research Symposium

THURSDAY, 2ND OF AUGUST 2018
The Engineering and Science Building

SPONSORED BY THE BRET OFFICE

The Vanderbilt University Summer Science Academy is pleased to present the fifteenth 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:

Poster Session One

Set up: 9:30 AM – 10:00 AM

Presentation: 10:00 AM – 12:00 PM

Take down: 12:00 PM – 1:15 PM

Research Seminar & Lunch, 12:00 PM – 1:00 PM

Dr. Rachel Crouch, Assistant Professor of Pharmaceutical Sciences, Lipscomb University

Choosing a Career as a Pharmacist or Pharmacologist: What's the Difference?

Poster Session Two

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 and Award Ceremony, 3:30 PM – 5:00 PM

Thursday, August 2nd, 2018

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

- Beckman Scholars (Pg 7)
- BP-ENDURE – Blueprint Program for Enhancing Neuroscience Diversity through Undergraduate Research Education Experiences (Pg 7)
- Chemical Biology Research Experience for Undergraduates (Pg 7-9)
- Vanderbilt Summer Diabetes Research Program (Pg 9)
- Leadership Alliance (Pg 9-10)
- MCB – Molecular and Cellular Biology Summer Program (Pg 11-12)
- SURIBMI – Vanderbilt Summer Research Internship Program in Biomedical Informatics (Pg 12-14)
- SURIBMI HS – Vanderbilt Summer Research Internship Program in Biomedical Informatics for High School Students (Pg 15)
- U-CRIP – Vanderbilt Undergraduate Clinical Research Internship Program (Pg 15-17)
- V-SURE – Vanderbilt-Sewanee Undergraduate Research Experience (Pg 19)
- VPNGV – Vanderbilt Program in Next Generation Vaccines (Pg 22)

Poster Session Two 1:30 PM – 3:30 PM

- MSTP-SRP – Medical Scientist Training Program Summer Research Program (Pg 10-11)
- Vascular Biology – Short Term Training Program for Minority Students (Pg 17-18)
- VNSRP – Vanderbilt Neuroscience Summer Program (Pg 19-20)
- VI4 – Vanderbilt Institute of Infection, Immunology, and Inflammation (Pg 20-21)
- VICC-CURE – Vanderbilt-Ingram Cancer Center, Cancer Undergraduate Research Experience (Pg 21)
- VINSE- Vanderbilt Institute of Nanoscale Science and Engineering (Pg 22-23)
- VPNGV – Vanderbilt Program in Next Generation Vaccines (Pg 23-24)
- VVC – Vanderbilt Vaccine Center (Pg 24)
- Independent Students (Pg 24-25)
- Physics REU (Pg 26-27)
- Physics Summer Research Interns (Pg 27)

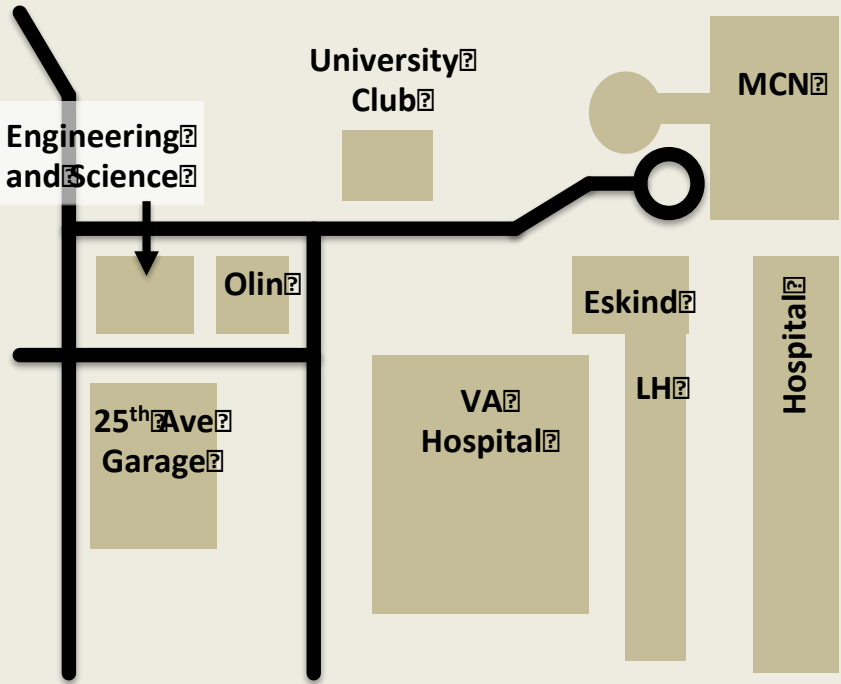
Student Research Talks & Award Ceremony 3:30 PM – 5:00 PM:

- Pg 6

Student Poster and Presentation Index:

- Pg 28

Symposium Location: The Engineering and Science Building



Presentation Titles

Student Oral Presentations

Student Speakers (3:30-4:30)

Amanda Blythe, MCB

The University of Missouri - Columbia

“Understanding the role of the choroid plexus in neural stem cell maintenance and tumor biology”

Rebecca Ihrie, Ph.D. Department of Cell and Developmental Biology

Jerod Crockett, U-CRIP

Lipscomb University

“Integrating Biomarkers into the Diagnosis of Indeterminate Pulmonary Nodules”

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

Kara Michelle Donovan, Independent

Clemson University

“The Effect of a High Fat Diet on Fracture Toughness of Bone in Mice with and without Type 2 Diabetes”

Jeffrey Nyman, Ph.D. Department of Orthopedic Surgery & Rehabilitation

Sean Rowan Halloran, V-SURE

Sewanee: University of the South

“The Functional Importance of Reovirus $\sigma 1$ Attachment Protein Conformational Mobility”

Kristen Ogden, Ph.D. Department of Pediatrics

Allison M Harper, U-CRIP

Berea College

“Placental Transfer and Metabolism of FDA-approved Drugs Repurposed for Novel Tocolytic Use”

Jennifer Herington, Ph.D. Department of Pediatrics

Award Presentations

Poster Presentation Awards (6)

Oral Presentation Awards (2)

Student Posters by Program

Beckman Scholars

Poster Session One 10:00AM–12:00PM

Joseph Carter Powers (M-1)

Vanderbilt University

“The Effects of Temperature and Aging on Immune Gene Expression in *Anopheles gambiae*”

Julián Hillyer, Ph.D. Department of Biological Sciences

BP-ENDURE

Poster Session One 10:00AM–12:00PM

Rufina Kamaletdinova (M-2)

CUNY Hunter College

“Cocaine-induced conditioned place preference in depression-like phenotype mice”

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

Ariel Elizabeth Nieves (M-3)

CUNY Hunter College

“N-Methyl-D-Aspartate Receptor Dependent Consequences of a High Fat Diet on Depressive-Like Behavior”

Brad Grueter, PhD Department of Anesthesiology

Fabienne Tavernier (M-4)

CUNY Hunter College

“Simultaneity Speech Judgement Analysis”

Carissa Cascio, Ph.D Department of Psychiatry

Chem-Bio REU

Poster Session One 10:00AM–12:00PM

Donovan Brown (M-5)

Pennsylvania State University

“Purification and crystallization of the *Staphylococcus aureus* heme-regulating proteins HemA and HssR”

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

Chem-Bio REU

Poster Session One 10:00AM–12:00PM

Andy Jacques Dorfeuille (M-13)

Morehouse College

“Redox Deficient Variant in Human Primase and Its Role in DNA Replication”

Walter Chazin, Ph.D. Department of Biochemistry

Anna Lauko (M-6)

Carleton College

“Dynamics of cell death induction via complex II assembly in TNF-receptor signaling pathway”

Carlos Lopez, Ph.D. Department of Biochemistry

Kathleen McClanahan (M-8)

University of Arkansas Fayetteville

“Mechanistic studies of dichloroisovernicinic acid biosynthesis in the everninomicin pathway”

Brian Bachmann, Ph.D. Department of Chemistry

Kristina Pieterston (M-9)

Vanderbilt University

“A Novel Device Design for Detection of Malaria in Cases of Low Parasite Density”

David Wright, Ph.D. Department of Chemistry

Nicolas Adrian Robalin (M-10)

University of Notre Dame

“Total Synthesis of Aurachin C”

Gary Sulikowski, Ph. D. Department of Chemistry

Jonathan Emmanuel Lee-Rodriguez (M-7)

University of Puerto Rico, Aguadilla

“Analyzing the Chemistry and Structure of a non-natural N4-amino-2'-deoxycytidine-Abasic site Interstrand Crosslink in duplex DNA”

Michael Stone, Ph.D. Department of Chemistry

Caroline Rose Stanton (M-11)

University of North Carolina at Chapel Hill

“Structural Analysis of Potential Therapeutic Target Proteins from *Clostridium difficile*”

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

Chem-Bio REU

Poster Session One 10:00AM–12:00PM

Morgan Michelle Vanderwall (M-12)

Whitworth University

“Characterization of Reversible Cholecystokinin Octapeptide Amyloid Assemblies as a Function of pH using 2D IR Spectroscopy”

Lauren Buchanan, Ph.D. Department of Chemistry

Diabetes

Poster Session One 10:00AM–12:00PM

Karly Marie Kroeten (M-57)

University of Minnesota

“The Effect of In Utero High Fat Diet Exposure on Pancreatic Islet Vascularization and β -Cell Proliferation in Non-Human Primate Offspring”

Maureen Gannon, Ph. D Department of Medicine

Elise Marie Rizzi (M-58)

Smith College

“Mass Cytometry Immune Profiling of T1D Patients”

Peggy Kendall, M.D. Department of Medicine

Leadership Alliance

Poster Session One 10:00AM–12:00PM

Grant Bennett (M-14)

Morehouse College

“Black Academic Leaders Matter: Black Ph.D. Black Engineering and Computing Leadership in Higher Education”

Ebony McGee, Ph.D. Department of Education of Diversity and Urban Schooling

Leadership Alliance

Poster Session One 10:00AM-12:00PM

Karen Osei-Boamah (M-16)

Xavier University of Louisiana

“Synthetic Transcription Factors to Alter DNA Methyltransferase Expression Levels”

David Sweatt, Ph.D. Department of Pharmacology

Theodore David Melder (M-15)

Xavier University of Louisiana

“Optimization of Diethylation for Enhancing cPILOT Workflow”

Renā Robinson, Ph.D. Department of Chemistry

Ariella Saslafsky (M-17)

University of Central Florida

“Stochastic vs Deterministic Modeling: Does It Matter Which You Choose?”

Carlos Lopez, Ph.D. Department of Biochemistry

Alexis Wilson (M-18)

Cornell University

“Examining the Relationship Between Sediment Grain Size and Toxic Arsenic Levels in the Ganges-Brahmaputra Delta in Bangladesh”

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

MSTP SRP

Poster Session Two 1:30PM-3:30PM

Nora J. Gilliam (A-11)

Indiana University - Purdue University Indianapolis

“Genomic sequence analysis to assess *Helicobacter pylori* genetic adaptation in response to gastric inflammation”

Timothy Cover, MD Department of Medicine

MSTP SRP

Poster Session Two 1:30PM-3:30PM

Aliana Janae Lawrence (A-12)

Spelman College

“Defining the association between lifestyle factors and colorectal cancer risk in the Southern Community Cohort Study”

Shaneda Warren Andersen, Ph.D. Department of Medicine

Jack Robbins (A-13)

Florida State University

“Cell death and non-genetic drug resistance in BRAF mutated melanoma”

Vito Quaranta, M.D. Department of Biochemistry

Isaiah C Swann (A-14)

The University of Texas at Dallas

“Transcriptionally-regulated genes direct gap junction specificity in the motor circuit of *C. elegans*”

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

Brian Anthony Tirado (A-15)

Mercer University

“The Effect of a Human LNK Polymorphism on Erythropoietin Receptor Signal Transduction”

Meenakshi Madhur, Ph.D., M.D. Department of Clinical Pharmacology and Medicine

Alexander Hunter Weingart (A-16)

University of Vermont

“Phenotyping of the airway epithelium in search for subpopulation of cells conferring long term risk for developing lung cancer.”

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

MCB

Poster Session One 10:00AM-12:00PM

David Battle (M-25)

Tennessee State University

“Cell Surface Expression of Wildtype and Mutant KCC3”

Eric Delpire, Ph.D. Department of Molecular Physiology & Biophysics

MCB

Poster Session One 10:00AM–12:00PM

Amanda Blythe (Oral)

The University of Missouri - Columbia

“Understanding the role of the choroid plexus in neural stem cell maintenance and tumor biology”

Rebecca Ihrle, Ph.D. Department of Cell and Developmental Biology

Isria Jarrett (M-20)

Belmont University

“Targeting Clostridium difficile Proteins for Structural Analysis”

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

Omar Moreno-Flores (M-21)

Heritage University

“Modeling the Lymphoid Populations in the Bone Marrow”

Julie Sterling, Ph.D. Department of Medicine

Nainoa Daniel Norman Ing (M-22)

Chaminade University of Honolulu

“Total Synthesis of Paecilomycine A”

Steven Townsend, Ph.D. Department of Chemistry

Mandy DeLanie Truelock (M-23)

Oklahoma State University

“The Effect of vacA heterogeneity on Helicobacter pylori VacA toxin activity”

Tim Cover, M.D. Department of Pathology, Microbiology and Immunology

Hailey Ung (M-24)

The University of the South

“The temporal ordering of DNA methylation and chromatin accessibility dynamics during human embryonic stem cell differentiation”

Emily Hodges, Ph.D. Department of Biochemistry

SURI-BMI

Poster Session One 10:00AM–12:00PM

Parker Albert (M-26)

University of California Los Angeles

“Evaluating Incident Reporting in Clinical Settings”

Laurie Novak, Ph.D. MHSA Department of Biomedical Informatics

Poster Session One 10:00AM–12:00PM

Marilyn Barron (M-27)

University of California, Merced

“Non-Routines Events as Measures of Neonatal Safety in the Perioperative Environment - Generating Findings via Automation”

Jason Slagle, Ph.D. Department of Anesthesiology

Jason Dominic Brito (M-28)

Vanderbilt University

“Real-time identification of patients with rare adverse events”

Joshua Denny, M.D., M.S Department of Biomedical Informatics

Jessica Chen (M-29)

Georgia Institute of Technology

“Automated Extraction and Timeline Creation of Tobacco Use from Clinical Free-Texts”

Cosmin A. Bejan, Ph.D. Department of Biomedical Informatics

Morgan Elizabeth Dewey (M-30)

Samford University

“Analysis of electronic prior authorization criteria using the FHIR standard”

Scott Nelson, Pharm D. MS Department of Biomedical Informatics

Atanas Golev (M-31)

University of Kentucky

“Using a trust game framework to evaluate risk aversion to sharing genomic data”

Bradley Malin, Ph.D. Department of Biomedical Informatics

Robert Ellis Green (M-32)

American University

“A PheWAS of Heterozygous Carriers of Pathogenic SNPs of Mendelian Diseases”

Wei Wei-Qi, M.D. P.H.D. Department of Biomedical Informatics

Matthew Hancock (M-33)

Vanderbilt University

“Cardiovascular Disease Outcome Prediction for Conventionally Low-Risk Individuals using Deep Learning”

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

Poster Session One 10:00AM–12:00PM

Hannah Bernardine Huth (M-34)

Indiana University

“Maternal-Fetal Health Information Management in the Home”

Gretchen Jackson, M.D., Ph.D. Department of Biomedical Informatics

Jay Karp (M-35)

Columbia University in the City of New York

“Natural Language Processing and Its Use in the Electronic Health”

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

Firehiwot Abebe Kebede (M-36)

Marshall University

“Voice Assistants Accuracy in Medical Query: The case of Siri”

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

Cindy Kim (M-37)

Vanderbilt University

“Social-Network-Analysis-based Framework to Learn Interactions of Care Providers in the Neonatal Intensive Care Unit from Electronic Medical Records”

You Chen, Ph. D. Department of Biomedical Informatics

Malachy Walker Newman (M-38)

Rensselaer Polytechnic Institute

“Expression of Mendelian Diseases Across Varying Tissue”

Lisa Bastarache, Ph.D. Department of Biomedical Informatics

Tiffany Wu (M-39)

Mount Holyoke College

“A Pan-Cancer Authorship Network Analysis”

Jeremy Warner, M.D., M.S. Department of Medicine

Charlotte Zuber (M-40)

Rutgers University

“Temporal Pattern Discovery to Determine Risk Factors in NICU Surgery Patients”

You Chen, Ph.D. Department of Biomedical Informatics

SURI-BMI HS

Poster Session One 10:00AM–12:00PM

Abel Ermias (M-65)

Martin Luther King Jr Magnet High School/ Lipscomb University

“Identification of alcohol usage in clinical notes”

Cosmin Bejan, Ph.D. Department of Biomedical Informatics

Elma Jashim (M-62)

Martin Luther King Jr Magnet High School

“Analyzing resilience in clinical sites during a large-scale health information technology implementation”

Kim Unertl, Ph.D. Department of Biomedical Informatics

Edward North III (M-64)

Martin Luther King Jr Magnet High School

“Processing In-Ambulance Operation Video to Evaluate Emergency Treatments”

Daniel Fabbri, Ph.D. Department of Biomedical Informatics

Salem Omer (M-63)

Martin Luther King Jr Magnet High School

“A visualization of hematological and oncological regimen treatments of various cancers”

Jeremy Warner, Ph.D. Department of Medicine

U-CRIP

Poster Session One 10:00AM–12:00PM

Beshoy Ashraf Abdelmessih (M-41)

Lipscomb University

“Decoding Phonation with Artificial Intelligence (DeeP AI)”

Gelbrad Alexander, M.D. Department of Otolaryngology

Amad Amedy (M-52)

Wesleyan University

“Decreased Interoceptive Awareness in Schizophrenia”

Sohee Park, Ph.D. Department of Psychology

Poster Session One 10:00AM–12:00PM

Jerod Crockett (M-42)

Lipscomb University

“Integrating Biomarkers into the Diagnosis of Indeterminate Pulmonary Nodules”

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

Allison M Harper (M-43)

Berea College

“Placental Transfer and Metabolism of FDA-approved Drugs Repurposed for Novel Tocolytic Use”

Jennifer Herington, Ph.D. Department of Pediatrics

Austin William Lubkemann (M-44)

Appalachian State University

“G6PC3 Mutation-Related Collagen Deposition and Abnormal Cardiac Morphology in a Mouse Model”

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

Tahvis Jabari Magruder (M-45)

Morehouse College

“Tracheal Aspirate Analysis: A Better Understanding of the Pathogenesis of Bronchopulmonary Dysplasia”

John Benjamin, M.D. Department of Pediatrics

Lilyveth Mesa (M-46)

Barry University

“Electrophysiological study of D1 dopaminergic neurons in corticostriatal projections”

Daniel Foster, PhD Department of Pharmacology

Nia Michaela Mitchell (M-47)

Georgia State University

“Clinical analysis and quantification of non-motor features of cervical dystonia”

David Charles, M.D. Department of Neurology

Emily R Oleisky (M-48)

Bowdoin College

“Comparing clinically-relevant definitions of chronic opioid use to identify patients at risk for poor outcomes following spine surgery”

Kristin Archer, PhD, DPT Department of Orthopedics and Rehabilitation

U-CRIP

Poster Session One 10:00AM–12:00PM

Hannah Price (M-49)

Spelman College

“Access to Health Care Before and After the Affordable Care Act
Among Low Income Pregnant Women”

Gilbert Gonzales, Ph.D. Department of Public Health

Laney Smith (M-50)

Washington and Lee University

“Independent risks of primary and secondary brain injury on long-
term cognitive impairment severity among trauma ICU survivors”

Mayur Patel, MD, MPH Department of Surgery

Danica Ferolin Vendiola (M-51)

University of Illinois at Urbana-Champaign

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

Donald Arnold, M.D. Department of Pediatric Emergency

Vascular Biology

Poster Session Two 1:30PM-3:30PM

Meagan Branch (A-17)

Elon University

“The role of Pax3 in the development and differentiation of Pelvic Ganglia”

Michelle Southard-Smith, Ph.D. Department of Medicine

Karyssa Yvonne Clark (A-18)

Illinois Wesleyan University

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

Julie Sterling, Ph.D. Department of Medicine

Vascular Biology

Poster Session Two 1:30PM-3:30PM

Noyna Francheska Fabre (A-19)

Hunter College

“Assessment of BK Virus Replication in Cellular Components of the Human Glomerular Vascular Unit: Implications for BK Virus Associated Nephropathy (BKVAN)”

Donald Alcendor, Ph.D. Department of Microbiology, Immunology, and Physiology

Rachel Alicia Francis (A-20)

Sewanee: The University of the South

“A glucagon-like peptide-1 receptor variant contributes to cardioprotection”

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

Jordan Galbraith (A-21)

Vanderbilt University

“Dopamine Regulation via Allosteric Modulation of the M1 Receptor: Implications for the Negative Symptoms of Schizophrenia”

Jeffrey Conn, Ph. D. Department of Pharmacology

Micah Harris (A-22)

Wright State University

“Determining the Presence of and Functional Significance of Dopamine Receptors in the Ductus Arteriosus (DA) During Development”

Jeff Reese, M.D. Department of Pediatrics

Chanelle Hunter (A-23)

University of Central Florida

“Characterization of Receptor Expression and Aberrant Gli2 Signaling in Osteosarcoma Cells”

Julie Sterling, Ph.D. Department of Medicine

Caroline McLaughlin (A-24)

Emory University

“Mechanism of KS-WNK1 activation of sodium transport in oocytes”

Eric Delpire, Ph.D. Department of Anesthesiology

Leah S. Rowe (A-25)

University of Arkansas at Pine Bluff

“Effects of isolevuglandin, a highly reactive lipid dicarbonyl, on modifying apolipoprotein A-1 and phosphatidylethanolamine in synthetic high-density lipoprotein”

Sean Davies, Ph.D. Department of Pharmacology

V-SURE

Poster Session One 10:00AM-12:00PM

Trey Claus (M-53)

Sewanee: The University of the South

“Synthesis of Glutamine Transport Inhibitors as Novel Therapeutics for Cancer”

Charles Manning, Ph.D. Department of Radiology and Radiological Sciences

Mesgana Dagnachew (M-54)

Sewanee: The University of the South

“Manipulation of Exosome Secretions Impacts Cell Movement and Stability”

Alissa Weaver, M.D., Ph.D. Department of Cancer Biology

Virginia M Farley (M-55)

Sewanee: The University of the South

“Hidden Lncs: Noncoding Regulation of the IFNG Gene in NK Cells”

Thomas Aune, Ph.D. Department of Medicine

Sean Rowan Halloran (Oral)

Sewanee: University of the South

“The Functional Importance of Reovirus $\sigma 1$ Attachment Protein Conformational Mobility”

Kristen Ogden, Ph.D. Department of Pediatrics

VNSRP

Poster Session Two 1:30PM-3:30PM

Laura Chodes (A-34)

Vanderbilt University

“Low Family Income during Childhood is Predictive of Global Brain Development in Males but not Females”

David Zald, Ph.D. Department of Neuroscience

Ary Furman (M-59)

Vanderbilt University

“Structural Modeling of Aquaporin 0 via HDX - Mass Spectrometry”

Kevin Schey, Ph.D. Department of Biochemistry

Camille Marie Powers (A-35)

Vanderbilt University

“The role of α -N-Catenin as a Novel Tumor Suppressor in Human Neuroblastomas”

Dai Chung, MD Department of Pediatric Surgery

Poster Session Two 1:30PM-3:30PM

Meghana Srivyas Rao (A-36)

Vanderbilt University

“Determining the Role of GABA in the Establishment of Circadian Period across Photoperiods”

Douglas McMahon, Ph.D. Department of Biological Sciences

Jacob Steins (A-37)

Vanderbilt University

“Consequences of Cell-type Specific Itgb3 Deletion on Social Behavior”

Brad Grueter, Ph. D. Department of Anesthesiology

Mae Anne Wimbiscus (A-38)

Vanderbilt University

“Quantification of astrocytes and oligodendrocytes in the brains of seven carnivoran species”

Suzana Herculano-Houzel, Ph.D., Department of Biological Sciences

Annaleigh York (A-39)

Vanderbilt University

“Universal scaling of degree of cerebellar folding despite clade-specific spatial distribution of folding”

Suzana Herculano, Ph.D. Department of Psychology

Poster Session Two 1:30PM-3:30PM

Sydney Lindsay Castellanos (A-26)

Indiana University - Bloomington

“Examination of the effects of hyperglycemia on inflammasome activation”

Carlos Henrique Serezani, Ph.D. Department of Medicine

Eliot TC Forster-Benson (A-27)

Vanderbilt University

“Characterizing the Native Structure of the HIV-1 gp41 Cytoplasmic Tail and Its Interactions with the Gag Matrix Protein”

Charles Sanders, Ph.D. Department of Biochemistry

Poster Session Two 1:30PM-3:30PM

Myriam Shehata (A-28)

Vanderbilt University

“Probing Novel Mechanisms of Nucleic Acid Sensing in Innate Immunity”

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

Lorrayya Louise Williams (A-29)

Calvin College

“Pilus-Expressing Acinetobacter baumannii, mediated Enhanced Bacterial Clearance Involving Inflammasomes Signaling.”

Michael Noto, Ph.D. M.D. Department of Pathology, Microbiology, and Immunology

VICC-CURE

Poster Session Two 1:30PM-3:30PM

Sara Duque (A-30)

University of Georgia

“BMI, Adipogenic Chemokines, and Ovarian Cancer Survival”

Alicia Beeghly-Fadiel, Ph.D., MPH Department of Medicine

Antonio Glenn (A-31)

Vanderbilt University

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

Michael King, Ph.D. Department of Biomedical Engineering

Malek Quincy Jacobs (A-32)

Cornell University

“Loss of BVES Results in Impaired Intestinal Wound Healing”

Christopher Williams, M.D., Ph.D. Department of Medicine

Christina Emily Wang (A-33)

Vanderbilt University

“Interrogating Phosphorylation of WDR5”

William Tansey, Ph.D. Department of Cell and Developmental Biology

Anesha Walker (A-71)

Tennessee State University

“Evaluation of Neutrophil Infiltration in Irradiated Tissues”

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

Poster Session Two 1:30PM-3:30PM

Caitlin Carfano (A-42)

George Washington University

“Porous Silicon Flakes on a Flexible Substrate for Real-Time Biosensing using Smartphone Technology”

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

Aamina Cadeara Dandy (A-43)

Tuskegee University

“Exploring the effects of pH-responsive polymeric nanoparticles on inflammasome activation”

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

Rebeca Margarita Gurrola (A-44)

Saint Mary's University

“Wearable textile based energy harvester designed for human motion”

Cary Pint, Ph.D. Department of Mechanical Engineering

Nafisa Aden Ibrahim (A-45)

College of St. Scholastica

“Electrochemical and Material Characterization of Co-extruded Composite Polymer Electrolytes for All Solid-State Battery Applications”

Kelsey Hatzell, Ph.D. Department of Mechanical Engineering

Joshua Lebron Livingston (A-46)

Prairie View A & M University

“pH-Responsive Copolymer Films Prepared by SiROMP”

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

Caylee Elizabeth Scott Marshall (A-47)

University of Kentucky

“In-vitro material characterization of ROS-responsive poly(thioacetal) polymeric scaffolds for treatment of chronic wounds”

Craig Duvall, Ph.D. Department of Biomedical Engineering

Rebecca Mendez (A-48)

Northeastern University

“Finite Element Analysis of Heavy Ion Strikes on Insulated Si and Ge Diodes”

Ron Schrimpf, Ph.D. Department of Electrical Engineering & Computer Science

Angelo Jay Miskalis (A-49)

Duquesne University

“In Vitro Assessment of Antioxidant Copolymers for Superoxide Scavenging”

Craig Duvall, Ph.D. Department of Biomedical Engineering

VINSE

Poster Session Two 1:30PM-3:30PM

Oluwalade Ruth Ogungbesan (A-50)

University of Maryland, Baltimore County

“Using molecular simulation to understand the interactions between DNA-coated graphene sheets and phospholipid bilayers”

Clare McCabe, Ph.D. Department of Chemical & Biomolecular Engineering

Keiann Simon (A-51)

Queensborough Community College

“Photosystem I Proteins in Gel-State Biohybrid Solar Cells”

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

Jade Elisa Stanley (A-52)

Tuskegee University

“The Modification of Photosystem I with Carbon Nanotubes for Photocurrent Generation”

David Cliffel, Ph.D. Department of Chemistry

Joseph Morio Veglak (A-53)

Rose-Hulman Institution of Technology

“Nickel Sulfide Nanocrystal Synthesis Using Substituted Thiophenols”

Janet Macdonald, Ph.D. Department of Chemistry

VINSE Tech Crew: Dubose, Savannah; Espinoza, Dayana; Jacome-Mendez, Brandon; Justin Mollison (A-54)

“Development and Enhancement of Standard Cleanroom Operations”

VPNGV

Poster Session One 10:00AM-12:00PM

Juliana Qin (M-61)

Vanderbilt University

“The Development of Next-Generation HIV-1 Vaccines Using Antibody Fingerprinting Technology”

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

James Crowe, M.D. Department of Pathology, Microbiology, and Immunology

VPNGV

Poster Session One 10:00AM–12:00PM

Pranav Kodali (M-60)

Vanderbilt University

“Use of Multi-template Comparative Modeling for Improving Quality of Antibody
3D Structure Prediction”

Jens Meiler, Ph.D. Department of Chemistry

VVC

Poster Session Two 1:30PM-3:30PM

Nikki Ligo (A-40)

University of Virginia

“Human Neutralizing Antibody Response to Rift Valley Fever Virus”

James Crowe, M.D. Department of Pathology, Microbiology, and Immunology

Leyn Shakhtour (A-41)

The George Washington University

“Using Reverse Genetics to Analyze Human Monoclonal Antibody Interactions
with Enterovirus-D68”

James Crowe, M.D. Department of Pathology, Microbiology, and Immunology

Independent

Poster Session Two 1:30PM-3:30PM

Kara Michelle Donovan (A-1)

Clemson University

“The Effect of a High Fat Diet on Fracture Toughness of Bone in Mice with and
without Type 2 Diabetes”

Jeffrey Nyman, Ph.D. Department of Orthopedic Surgery & Rehabilitation

Nancy Liu (A-2)

Vanderbilt University

“Screening for Lung Cancer among a Racially Diverse and
Medically Underserved Population”

Melinda Aldrich, PhD, MPH Department of Thoracic Surgery

Emery Alton Nash (A-3)

Davidson College

“Comparing the Timeline and Phenotype of Renal Macrophages
in Different Mouse Models of Kidney Injury”

Mark de Caestecker, Ph.D., M.B., B.S., F.A.S.N. Department of
Nephrology

Independent

Poster Session Two 1:30PM-3:30PM

Veronica Roseanne Olaker (A-4)

The Ohio State University

“Nucleocytoplasmic shuttling of Gle1 is involved in R-loop biology”

Susan Wentz, Ph.D. Department of Cell and Developmental Biology

Stephanie Rager (A-5)

Columbia University in the City of New York

“The Pathogen, the Immune Response, or the Treatment: Investigating the Cause of Sepsis-Associated Patent Ductus Arteriosus (PDA)”

Elaine Shelton, Ph.D. Department of Pediatrics

Bhavani Sankaralingam (A-6)

Vanderbilt University

“Negative Regulation of De Novo Telomere Addition by Pif1 Helicase”

Katherine Friedman, Ph.D. Department of Biological Sciences

Chloe L Stallion (A-7)

Vanderbilt University

“Genetic and Linguistic Characters of Creolization in the Caribbean”

Nicole Creanza, Ph.D. Department of Biological Sciences

Audrey Kathryn Thomas (A-8)

Kalamazoo College

“Characterization of Clostridium difficile TcdR, a sigma factor that controls bacterial toxin production”

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

Harrison Thomas (A-9)

Vanderbilt University

“Mollemycin A: A Possible Solution to the Challenge of Treating Gram-Negative Infections”

Steven Townsend, Ph. D. Department of Chemistry

Steven Craig Wall (A-10)

Belmont University

“Blocking Staphylococcus aureus’ resources: Development of a Multi-Antigen Nanoparticle Vaccine Candidate Based on Metal Acquisition”

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

Physics REU

Poster Session Two 1:30PM-3:30PM

Colton Barger (A-55)

Pennsylvania State University

“The Theory of Band Gaps in Nano-porous SiC”

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

Khalil Guy (A-56)

Fisk University

“Modelling the allowed regions of the mixing angle vs. Δm^2 parameters for a 4v model for the NEOS project”

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

Hannah Kim (A-57)

University of Virginia

“Analyzing Calcium Signals in Laser-Induced Epithelial Wounds”

Shane Hutson, Ph.D. Department of Physics & Astronomy

Daniel Lee (A-58)

Adelphi University

“Modeling Diffusion with Fluid Flow within a Microdialysis Imager”

John Wikswow, Ph.D. Department of Physics & Astronomy

Lorien MacEnulty (A-59)

Drake University

“Monte Carlo Computational Modelling of DANSS Short-Baseline Antineutrino Oscillation Experiment”

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

Caitlin Moeller (A-60)

University of Massachusetts, Amherst

“Identifying Mira Variable Stars in KELT Data”

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

Thomas Richards (A-61)

University of Alabama, Tuscaloosa

“Determining Relative Yields of Fragment Pairs from Californium-252 Decays”

Joe Hamilton, Ph.D. Department of Physics & Astronomy

Edwin Santiago (A-62)

Universidad de Costa Rica

“Analyzing how visual skills contribute to data-analysis in scatterplots”

Keivan Stassun/Maithilee Kunda, Ph.D. Department of Physics & Astronomy

Physics REU

Poster Session Two 1:30PM-3:30PM

Samantha Smiley (A-63)

DePaul University

“Perovskite Nanosheet Dielectrics for 2D Devices”

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

Taylor Woodruff (A-64)

Mississippi State University

“Experimentation and Modeling of PC9 Cell Fate Decisions”

Erin Rericha, Ph.D. Department of Physics & Astronomy

Physics Summer Research Interns

Poster Session Two 1:30PM-3:30PM

Christian Brown (A-67)

Union University

“Determining the Nuclear Structure of 162Gd and 164Gd”

Joseph Hamilton, Ph.D. Department of Physics & Astronomy

Peyton Brown (A-66)

Vanderbilt University

“The growth of epitaxial Vanadium Dioxide single crystals”

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

Emily Dong (A-68)

Vanderbilt University

“Designing a Website for Public Release of Large Scale Data Projects”

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

Alyson Hughes (A-69)

Vanderbilt University

“Investigating Rapid Rotation in the Red Giant Branch”

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

Charles Marrder (A-65)

Notre Dame

“Simulating Total Flux Reactor Experiments to Support a Four-Neutrino Model”

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

Ohm Patel (A-70)

Vanderbilt University

“Filtergraph: Porting a Data Visualization Suite to a New Web Stack for Scalability and Efficiency”

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

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

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