



Dear Friends of Undergraduate Research and Service Learning:

Welcome to the seventh annual Celebratory Symposium for students in our Summer Scholars program. With more than four hundred presenters, this is our largest event ever, and we are very excited to share their work with you. And we are delighted to be able to do so in the heart of the main campus in the Patrick T. Harker ISE Lab – our special thanks go to Dr. John Jungck, Director of the ISE Lab, for kindly hosting us in this wonderful facility.

As the Symposium program demonstrates, these students have worked on an extraordinary range of projects in disciplines all across the university as well as in the community. Over the past ten weeks, they have collaborated with their faculty mentors and, in many cases, with other undergraduates and with graduate students, learning how original research takes place and creating new knowledge themselves. Continuing UD's nature as an engaged campus, many of them have worked with a wide range of external partners, translating research into action that both benefits community agencies and provides the students themselves with deepened understandings of the ways in which they can contribute and learn from their service. National studies of undergraduate research and experiential learning have shown time and again that these experiences can be the most powerful part of a student's education, shaping his or her life and career for decades to come.

Both today's event and the summer program itself would not be possible without the extraordinary support of people and offices across our campus. I particularly want to call out for thanks to the staff of the Office of Undergraduate Research and Experiential Learning as well as the members of the faculty and staff throughout UD who volunteer their time and expertise to mentor students in the opportunities and responsibilities that go with conducting original research and service projects.

On behalf of all these members of the UD community, thank you for joining us at today's program. We hope you will enjoy seeing and hearing the fruits of the students' work and take away an even deeper appreciation for the intellectual accomplishments, creative achievements, and service contributions they make to the University of Delaware and its wider community.

Sincerely,

A handwritten signature in black ink that reads 'Iain Crawford'.

Iain Crawford  
Faculty Director, Undergraduate Research and Experiential Learning

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Domenico Grasso  
Provost

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August 2016

Dear Colleagues and Friends:

Welcome to the University of Delaware's seventh Annual Undergraduate Research and Service Celebratory Symposium that brings this year's Summer Scholars program to a conclusion. This event marks the culmination of 10 weeks of full-time research by more than 400 student researchers who have worked with faculty mentors and community partners. During the program, these students have been engaged in projects representing disciplines across the university, discovering the challenges and excitement of creating new knowledge in collaboration with faculty and other researchers.

Studies have shown that these types of experiences are among the most important forms of learning. We know that engaging in mentored research can be a life-changing experience. Some of the students will build from this program as they go on to graduate school; others will find the experience they have gained invaluable as they move into professional careers. All of them will look back on these summer months as some of the most intensive and successful parts of their education.

On behalf of the University, I thank everyone who has made this program possible, including the staff of the Office of Undergraduate Research and Experiential Learning, faculty, mentors and community partners. Being part of a top-flight research university such as Delaware means that every student must possess courage, enthusiasm, and the willingness to push the boundaries of understanding and knowledge. I want to challenge every student to dare to be great. This is what makes Delaware shine.

Go Hens,

A handwritten signature in black ink that reads 'Domenico Grasso'. The signature is fluid and cursive, with a long horizontal stroke extending to the right.

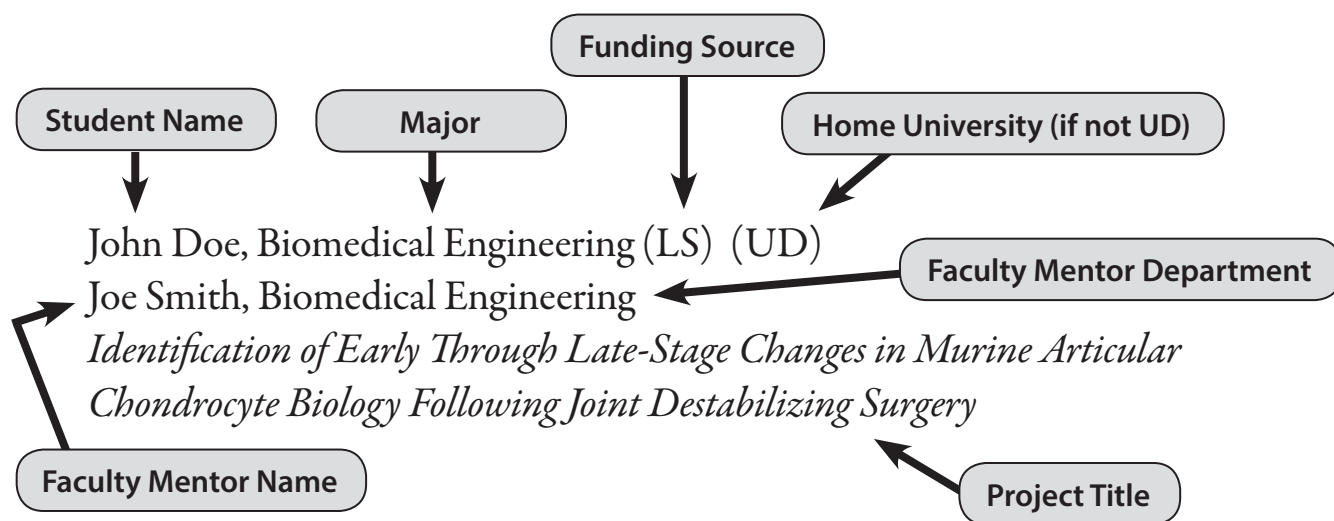
Domenico Grasso



Undergraduate Research and Service Celebratory Symposium  
Harker ISE Lab  
Thursday, August 11, 2016 • 9:00 a.m. - 5:00 p.m.

8:30 – 8:55	Poster Session I Set-up	Lobby	
9:00 – 4:00	<i>Art Exhibit</i>	Room 309	
9:00 – 10:30	<i>Poster Session I</i> 9:00 – 9:45 (ODD-numbered posters present) 9:45 – 10:30 (EVEN numbered posters present)	Lobby	
9:00 – 10:00	<i>Oral Session 1</i> 1. Educational Enrichment 2. Criminal Justice Reform 3. Sustainable Apparel	Room 110 Room 215 Room 322	pg. 22 pg. 22 pg. 22
10:10 – 11:10	<i>Oral Session 2</i> 1. Camp 2. Agriculture & Food 3. Fashion & Dye 4. Politics & Policy	Room 110 Room 215 Room 322 Room 417	pg. 22 pg. 22 pg. 23 pg. 23
10:30 – 10:45	Switch Posters for Session II	Lobby	
10:45 – 12:15	<i>Poster Session II</i> 10:45 – 11:30 (ODD-numbered posters present) 11:30 – 12:15 (EVEN numbered posters present)	Lobby	
11:20 – 12:20	<i>Oral Session 3</i> 1. Women’s Studies & Social Justice 2. Material Culture 3. English Education	Room 215 Room 322 Room 417	pg. 23 pg. 23 pg. 23
12:00– 1:30	<b>LUNCH</b>	Perkins Student Center	
12:15 – 1:15	Switch posters for Session III		
1:15 – 2:45	<i>Poster Session III</i> 1:15 – 2:00 (ODD-numbered posters present) 2:00 – 2:45 (EVEN numbered posters present)	Lobby	
1:30 – 2:30	<i>Oral Session 4</i> 1. Well-Being 2. Anthropology 3. Art 4. Economics & Statistics	Room 110 Room 215 Room 322 Room 417	pg. 24 pg. 24 pg. 24 pg. 24
2:40 – 3:55	<i>Oral Session 5</i> 1. Healthy Communities 2. Psychology & Diversity 3. English & Music	Room 110 Room 215 Room 322	pg. 24 pg. 25 pg. 25
2:45 – 3:00	Switch Posters for Session IV	Lobby	
3:00 – 4:30	<i>Poster Session IV</i> 3:00 – 3:45 (ODD-numbered posters present) 3:45 – 4:30 (EVEN numbered posters present)	Lobby	
4:00 – 5:00	UD Creamery Ice Cream, courtesy of the College of Agriculture and Natural Resources	Harker ISE Lab Walkway	

# Explanation of Program Entries



## Key to Abbreviations

ACCEL	Accelerating Clinical Science Partnerships and Translational Research	INBRE	IDeA Network of Biomedical Research Excellence
ADaPT	Advancing Diversity in Physical Therapy	IWSTEM	Inspiring Women in Science, Technology, Engineering & Mathematics
AHSS	Arts, Humanities, & Social Sciences	McNair	McNair Scholars Program
ArtsBridge	ArtsBridge America	MEEG	Department of Mechanical Engineering
BMEG	Department of Biomedical Engineering	NECA	Northeastern Chemical Association
CANR	College of Agriculture & Natural Resources Summer Institute	NIH	National Institute of Health
Carmean	Blair & Cheryl Carmean Summer Scholar Award	NIH-COBRE	National Institute of Health Center of Biomedical Research Excellence
CBER	Center for Biomedical Engineering Research	NSF	National Science Foundation
CCEI	Catalysis Center for Energy Innovation	NSF REU	National Science Foundation Research Experiences for Undergraduates
CPC	Center for Political Communications	NSF CBET	National Science Foundation Chemical, Bioengineering, Environmental, and Transport Systems
CPW	Charles Peter White Scholars	Nemours COBRE	Nemours Center of Biomedical Research Excellence
CPWBIO	Charles Peter White Biology Scholars	NSURP	Nemours Summer Undergraduate Research Program
CRESP	Center for Research in Education & Social Policy	OHEI-HESSP	Office of Health Equities & Inclusion- Health Equities Summer Scholar Program
CSD	Center for the Study of Diversity	Pattison	Hellen Pattison Scholar Award
DDOE MSP	Delaware Department of Education Mathematics Science Partnership	Plastino	David A. Plastino Scholar Award
DNERR	Delaware National Estuary Research Reserve	REACT	Research Experiences to Advance Chemists in Training
DNREC	Delaware Department of Natural Resources & Environmental Control	SE	Science & Engineering Scholars
DRI	Delaware Rehabilitation Institute	SF	Summer Fellowship
DSU	Delaware State University	SL	Service Learning Scholars
DTCC	Delaware Technical Community College	Stetson	Milton H. Stetson Memorial Fellowship
ECE	Department of Electrical & Computer Engineering		
EPSCoR	Experimental Program to Stimulate Competitive Research		
Heitzer	David M. Heitzer Award		
Hofmann Scholar	Ethel & Donald Hofmann Scholars		

# POSTER SESSION I

*(Agriculture & Natural Resources,  
Animal & Food Sciences, Entomology  
& Wildlife Ecology, Plant &  
Soil Sciences, Biological Sciences,  
Chemistry & Biochemistry,  
Geography, Marine Science & Policy,  
Environmental Science)*

## AGRICULTURE & NATURAL RESOURCES

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- 1) Francess Blake, Pre-Veterinary Science (EPSCoR) (DSU)  
Brigid McCrea, Agriculture & Natural Resources (DSU)  
*Analysis of Growth Rates and Feed Efficiency for Broilers and  
Buckeyes*
- 2) Jordan Brockwell, Biological Chemistry (EPSCoR) (Wesley  
College)  
Brigid McCrea, Agriculture & Natural Resources (DSU)  
*The Effect of Different Waterer Designs On the Drinking  
Behavior of Buckeye Chickens*
- 3) Dinh Ngo, Biological Chemistry (EPSCoR) (Wesley  
College)  
Brigid McCrea, Agriculture & Natural Resources (DSU)  
*Comparison between Broiler and Buckeye Chickens in Organ  
Growth and Parts Distribution*
- 4) Omolade Oludare, (EPSCoR) (DSU)  
Kalpalatha Melmaiee, Agriculture & Natural Resources  
(DSU)  
*TBA*
- 5) Tabitha Edwards, Environmental Science (EPSCoR) (DSU)  
Gulnihal Ozbay, Agriculture & Natural Resources (DSU)  
*TBA*

## ANIMAL & FOOD SCIENCES

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- 6) Andrew Mason, Pre-Veterinary Medicine & Animal  
Biosciences (SE)  
Ryan Arsenault, Animal & Food Sciences  
*Comparison of Immunometabolic Response in Macrophages  
Infected with Salmonella Enteritidis or Salmonella Heidelberg*
- 7) Joey Rea, Pre-Veterinary Medicine & Animal Biosciences (SE)  
Ryan Arsenault, Animal & Food Sciences  
*Kinome Profiling of Gene Knockout Mutants of Salmonella  
Typhimurium*

- 8) Justin Berg, Pre-Veterinary Medicine & Animal Biosciences  
(SE)  
Amy Biddle, Animal & Food Sciences  
*The Equine Microbiome Project*
- 9) Brian Chambers, Pre-Veterinary Medicine & Animal Bio-  
Sciences (SE)  
Amy Biddle, Animal & Food Sciences  
*Resistance of Strongylus equinus to Dewormers and its Relation  
to Horse Age, Gender and Breed*
- 10) James Madlock, Biology (EPSCoR) (Cheyney University)  
Amy Biddle, Animal & Food Sciences  
*Measuring Metabolic Changes Over Time in Equine  
Microbiome Community*
- 11) Gregory Patterson, Biology (EPSCoR) (Cheyney  
University)  
Amy Biddle, Animal & Food Sciences  
*Primer Design for Identification of Small Strongyle Species*
- 12) Natalie Zelenky, Pre-Veterinary Medicine & Animal  
Biosciences (Carmean)  
Robert Dyer, Animal & Food Sciences  
*E. coli Endotoxin Activates Proinflammatory Cytokine  
Secretion in Immune Cells of Bovine Spleen and Mesenteric  
Adipose Tissue*
- 13) Cassandra Moyer, Animal & Food Sciences (Carmean)  
Tanya Gressley, Animal & Food Sciences  
*Characterization of Urea Release Rates from Slow Release Urea  
Products*
- 14) Kayla Neiderfer, Pre-Veterinary Medicine & Animal  
Biosciences (Carmean)  
Tanya Gressley, Animal & Food Sciences  
*Affects of Buffers in the Bovine Gastrointestinal Tract*
- 15) Alexis Trench, Pre-Veterinary Medicine & Animal  
Biosciences (CANR)  
Tanya Gressley, Animal & Food Sciences  
*Effect of Carbon Dioxide and Pore Size on in vitro  
Measurements of Bovine Neutrophil Chemotaxis*
- 16) Phania Alcena, Food Science (EPSCoR) (Florida A&M  
University)  
Kali Kniel, Animal & Food Sciences  
*Detection and Quantitative Analysis of Salmonella from Pre-  
harvest Environment*
- 17) Lakshmi Sastry, Pre-Veterinary Medicine & Animal  
Biosciences (SE)  
Mark Parcells, Animal & Food Sciences  
*Mapping Interactions of EZH2 in Marek's Disease Oncogenesis*
- 18) Louis Colaruotolo, Food Science (SE)  
Changqing Wu, Animal & Food Sciences  
*Influences of Pulsed Light on Anthocyanins and Other  
Compounds in Red Raspberries*

## ENTOMOLOGY & WILDLIFE ECOLOGY

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- 19) Daniel Day, Environmental Science (CANR) (Dickinson College)  
Jeff Buler, Entomology & Wildlife Ecology  
*Mapping Winter Waterfowl Using Radar in Delaware*
- 20) William Keilsohn, Entomology (SE)  
Doug Tallamy, Entomology & Wildlife Ecology  
*The Effects of Roadside Habitat on Traffic Insect Mortality*

## PLANT & SOIL SCIENCES

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- 21) Jarrett Talley, Agronomy (EPSCoR) (Florida A&M University)  
Harsh Bais, Plant and Social Sciences  
*Behavioral Assays of the Parasitic Plant *Cuscuta**
- 22) Ryan Johnson, Medical Diagnostics (EPSCoR/Hofmann Scholar)  
Pamela Green, Plant and Social Sciences  
*Investigating the Impact of Environmental Stress on Gene Expression in the Horseshoe Crab*
- 23) John Dougherty, Environmental Sciences (EPSCoR) (Wesley College)  
Shreeram Inamdar, Plant and Social Sciences  
*How Does Heterogeneous Vegetation and Topography Affect Physical and Chemical Soil Properties in an Upland Temperate Forest*
- 24) Jack Protokowicz, Biochemistry (EPSCoR)  
Shreeram Inamdar, Plant & Soil Sciences  
*Capturing Carbon: Investigating the Impact of Various Carbon Sources on a Small, Forested Watershed*
- 25) Tristum Williams, Agronomy (EPSCoR) (Florida A&M University)  
Deb Jaisi, Plant and Social Sciences  
*Phosphorus Cycling in the Chesapeake Bay and Deer Creek*
- 26) Alesia Hunter, Environmental Biology (McNair) (Beloit College)  
Angelia Seyfferth, Plant & Soil Sciences  
*Chemical Properties of Mangrove Leaves from Polluted and Healthy Habitats*
- 27) Erica Loudermilk, Environmental Engineering (EPSCoR)  
Angelia Seyfferth, Plant and Social Sciences  
*Phosphorus and Nitrogen Spatiality in a Delaware Estuary*
- 28) Kaitlyn Markey, Plant & Soil Science (CANR) (North Carolina State University)  
Amy Shoher, Plant & Soil Sciences  
*Using Silicon Fertilizers to Improve Soil Phosphorus Availability in High Phosphorus Soils*
- 29) Gina Zhu, Environmental Engineering (EPSCoR) (Yale University)  
Donald Sparks, Plant & Social Sciences  
*Impacts of Sorption on Soil Organic Carbon Reactivity Associated with Hydrous Manganese Oxide*

- 30) Tessa Jarvis, Biological Sciences (EPSCoR/NUCLEUS)  
Eric Wommack, Plant and Social Sciences  
*Production of Latent Viruses from a Nitrogen-Fixing Bacterial Symbiont of Soybean*

## BIOLOGICAL SCIENCES

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- 31) Kanisha Blake, Biology (INBRE) (Wesley College)  
Hacene Boukari, Physics (DSU)  
*Ficoll Induces Aggregation of Bovine Serum Albumin and Phycoerythrin Proteins*
- 32) Maria Limmina, Biological Sciences (Governor Biotech Award)  
Ethna Fidelma Boyd, Biological Sciences  
*Investigating the Role of Bacterial Cell Wall Modifications in Fitness and Survival*
- 33) Priya Mahesh, Biological Sciences (CPWBIO/Hofmann Scholar)  
Melinda Duncan, Biological Sciences  
*Developmental Expression of  $\beta$ -catenin in Reporter Mice*
- 34) Branden Bateman, Biomedical Engineering (SE)  
Randall Duncan, Biological Sciences  
*Effects of IGF-1 on Chondrocyte Morphology in Three-dimensions*
- 35) Elijah Ikhumhen, Biomedical Sciences (McNair) (Marquette University)  
Randall Duncan, Biological Sciences  
*The Role of TRPV Channels in Preosteoblast Response to Mechanical Loading*
- 36) Shannon Marshall, Biological Sciences (McNair)  
Randall Duncan, Biological Sciences  
*The Effect of Oscillatory Fluid Shear on Prostate Cancer Attachment to Bone Marrow Endothelial Cells*
- 37) Michael Wilson, Biological Sciences (CPW)  
Randall Duncan, Biological Sciences  
*NGF Regulation of Bone-Derived Prostate Cancer Cell Proliferation and Response to ATP*
- 38) Kyle Plusch, Biological Sciences (CPWBIO)  
Deni Galileo, Biological Sciences  
*Determining the Role of LICAM in Malignant Glioblastoma Stem Cells*
- 39) Alexander Stubbolo, Biological Sciences (CPWBIO)  
Deni Galileo, Biological Sciences  
*Does LICAM Provide Chemotactic Signals That Instruct Migrating Glioblastoma Cells?*
- 40) Austin Luna, Biology (INBRE) (Wesley College)  
Fady Gerges, (Green Clinics Laboratory)  
*Incidence and Prevalence of Melanoma (In-situ and Invasive) Along the Demographics Spectrum in Kent and Sussex Counties as Correlated with the BRAF Mutation Status*
- 41) Sydney Gualtieri, Neuroscience (DDOE MSP)  
John Jungck, Biological Sciences & Mathematical Sciences  
*Cancerous Tumor Growth Models*



- 42) Sundus Ahmed, Biology (INBRE) (DSU)  
Hwan Kim, Biology (DSU)  
*A Novel Neuroprotective AurimMed Compound as a Potential Therapeutic for Parkinson's Disease.*
- 43) Joseph Katz, Nutritional Sciences (INBRE)  
Hwan Kim, Biology (DSU)  
*Assessing Synergistic Damage of Commercially Available Pesticides in Parkinson's Disease Fly Model*
- 44) Nathaniel Borders, Biological Sciences (Stetson)  
Salil Lachke, Biological Sciences  
*Functional Characterization of Caprin2 in Mouse Eye Development and its Associated Developmental Defect Peters Anomaly*
- 45) Opeyemi Akinrinsola, Biology (EPSCoR) (DSU)  
Hakeem Lawal, Biology (DSU)  
*Developing a Drosophila Model for Parkinson's Disease from Commercially-used Pesticides*
- 46) Mara Baker, Biological Sciences (Delaware Governor's Bioscience Fellowship) (DTCC)  
John McDowell, Biology & Chemistry (DTCC)  
*Analysis of Transcriptional Regulation of the Lyme Borrelia Fibronectin-binding Protein BBK32; Promoter Mapping of a Putative Member of the RpoS-regulated Transcriptome*
- 47) Stephanie Anyika, Biology (EPSCoR) (DSU)  
Karl Miletti, Biology (DSU)  
*TBA*
- 48) Teshress Chandradat, Biotechnology (EPSCoR) (DTCC)  
Karl Miletti, Biology (DSU)  
*TBA*
- 49) Jan Parson, Pre-Professional Chemistry (INBRE) (DSU)  
Karl Miletti, Biology (DSU)  
*CD44-associated Response to Hydrogen Peroxide-mediated Oxidative Stress in MCF-7 and MCF-7/CD44s Breast Cancer Cell Lines*
- 50) Sean Lein, Biochemistry (CPWBIO)  
Ramona Neunuebel, Biological Sciences  
*Identifying Phosphoinositide Binding Regions in Legionella pneumophila Effector Proteins*
- 51) Nicollette Uhde, Biological Sciences (INBRE) (DTCC)  
Ramona Neunuebel, Biological Sciences  
*Constructing a Legionella pneumophila Effector Library to Identify Novel Cytoskeleton Interacting Proteins*
- 52) Kaitlyn Duong, Biological Sciences (CPWBIO)  
Anja Nohe, Biological Sciences  
*Effects of Turmeric Extract on PC12 Cell Differentiation*
- 53) Lauren Harper, Biological Sciences (CPWBIO)  
Anja Nohe, Biological Sciences  
*Effects of CK2 Blocking Peptides on C2C12 Cell Differentiation*

- 54) John Nixon, Biomedical Engineering (SE)  
Erica Selva, Biological Sciences  
*Examining Catalytic Activity and Shedding of O-Xylosyltransferase in Drosophila*
- 55) Oluwaseun Akinmoladun, Biology (EPSCoR) (DSU)  
Murali Temburni, Biology (DSU)  
*TBA*

## CHEMISTRY & BIOCHEMISTRY

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- 56) Cannon Giglio, Chemistry (SE)  
Steven Brown, Chemistry & Biochemistry  
*Selection of Important Variables for Chemical and Spectroscopic Data*
- 57) Griffen Desroches, Chemistry (Plastino)  
Svilen Bobev, Chemistry & Biochemistry  
*New Interstitial Intermetallics in the RE-Cd-A System*
- 58) Ariel Bilbrough, Biological Chemistry (INBRE) (Wesley College)  
Malcolm D'Souza, Chemistry (Wesley College)  
*Persistence of Sulfide, Sulfonyl, and Sulfamoyl-Containing Compounds in Aquatic Environments*
- 59) Edward Brandenburg, Biochemistry (EPSCoR) (Wesley College)  
Malcom D'Souza, Chemistry (Wesley College)  
*Evaluating the Contribution of Nitrogen's Lone Pair in Differing Substrates*
- 60) Andreanna Jeffries, Biological Chemistry (EPSCoR) (Wesley College)  
Malcom D'Souza, Chemistry (Wesley College)  
*Increasing the STEM Presence on the Wesley Website*
- 61) Austin Lonski, Biological Chemistry (INBRE) (Wesley College)  
Malcolm D'Souza, Chemistry (Wesley College)  
*Kinetic Analyses of 3-Trifluoromethyl Phenyl Chloroformate Using Conductance and Titrations*
- 62) Michael Skivers, Environmental Studies (EPSCoR) (Wesley College)  
Malcom D'Souza, Chemistry (Wesley College)  
*Turning Despicable into Livable: A Statewide Analysis to Identify High Risk Lawns for Water Quality*
- 63) Jeremy Wirick, Biological Chemistry (INBRE) (Wesley College)  
Malcolm D'Souza, Chemistry (Wesley College)  
*Correlation of the Rates of Solvolysis of 4-Chlorobutyl Chloroformate*
- 64) Matthew Hurlock, Biochemistry (Plastino)  
Catherine Grimes, Chemistry & Biochemistry  
*Investigation of ATPase Activity in Nod2 and Nod2 Walker Mutants*

- 65) Zachary Jones, Chemistry (Plastino)  
Catherine Grimes, Chemistry & Biochemistry  
*Chemoenzymatic Synthesis of Bioorthogonal UDP  
N-acetylmuramic Acid Derivatives to Label the Peptidoglycans  
of S. aureus and B. subtilis*
- 66) Hannah Wastyk, Biochemistry (Plastino)  
Catherine Grimes, Chemistry & Biochemistry  
*Biochemical Characterization of Innate Immune Receptor,  
Nod2 and its Chaperone, Hsp70*
- 67) Shelby Roseman, Chemistry (SE)  
John Koh, Chemistry & Biochemistry  
*AF4-AF9 Protein-Protein Interaction Inhibitor: Synthesis and  
Biological Evaluation*
- 68) Junius Thomas, Biochemistry (NUCLEUS)  
John Koh, Chemistry & Biochemistry  
*Design and Synthesis of Possible NSD1 Inhibitors for Pediatric  
Leukemia*
- 69) Lucas Onisk, Chemistry (Plastino)  
Tatyana Polenova, Chemistry & Biochemistry  
*Characterization of the Active Site of Vanadium  
Haloperoxidases and the F397H Mutant using <sup>51</sup>V Magic  
Angle Spinning NMR Spectroscopy*
- 70) Dominic Santoleri, Biochemistry (SE)  
Sharon Rozovsky, Chemistry & Biochemistry  
*Purification and Characterization of DNA Binding Protein  
AphA*
- 71) Evan Horowitz, Chemistry (Heitzer)  
Klaus Theopold, Chemistry & Biochemistry  
*Synthesis and Characterization of First Row Metal-Tp  
Complexes*
- 72) Igbal Attaelmanan, Biochemistry (REACT)  
Mary Watson, Chemistry & Biochemistry  
*Synthesis of Substituted Nitrobenzenes as NSD1 Inhibitors, an  
Epigenetic Regulator in Leukemias*
- 73) Alex Manders, Chemistry (Plastino)  
Mary Watson, Chemistry & Biochemistry  
*Enantiospecific Allylic Arylations to form Quaternary  
Stereocenters*
- 74) Jacob Piane, Chemistry (Plastino)  
Mary Watson, Chemistry & Biochemistry  
*Late-Stage Functionalization via Suzuki Cross Couplings of  
Un-activated Amines*
- 75) Arvind Annamalai, Chemistry (Plastino)  
Neal Zondlo, Chemistry & Biochemistry  
*Structural Contexts of Phosphorylation and O-GlcNAcylation*
- 76) Nicole Wenzell, Biochemistry (SE)  
Neal Zondlo, Chemistry & Biochemistry  
*Understanding a Fundamental Force in Protein Folding:  
Tuning the N → Pi\* Interaction via Designed Peptides*

## GEOLOGICAL SCIENCES

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- 77) Haley Stanko, Geography (EPSCoR)  
Lindsay Naylor, Geography  
TBA

## MARINE SCIENCE & POLICY

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- 78) Melanie Brennan, Marine Science (SE)  
Danielle Dixson, Marine Biosciences  
*Predator Detection Through Sensory Stimuli in the Coral  
Peppermint Shrimp (Lysmata wurdemanni)*
- 79) Megan Cain, Environmental Science (SE)  
Danielle Dixson, Marine Biosciences  
*Sunscreen Negatively Effects the Behavior and Development of  
the Atlantic Horseshoe crab, Limulus polyphemus*
- 80) Lucas Pensinger, Marine Science (SE)  
Danielle Dixson, Marine Biosciences  
*Understanding the Effects of Climate Change on Horseshoe  
Crab Development*
- 81) Alexandra Matacchieri, Marine Science (SE)  
Pat Gaffney, Marine Biosciences  
*Exploring the Different Trematodes Found in the Eastern  
Mudsnail, Ilyanassa obsoleta, through DNA Profiling*
- 82) Nicole Coffey, Marine Science/Chemistry (SE)  
George Luther, Oceanography  
*Low-level Soluble Manganese Speciation in Surface Seawater*
- 83) Robert Jaquette, Physics (Hofmann Scholar)  
Fabrice Veron, Physical Ocean Science & Engineering  
*Observational Study on the Wind-Wave Coherence and  
Turbulent Kinetic Energy Dissipation of the Nantucket Sound's  
Marine Boundary Layer*

## ENVIRONMENTAL SCIENCE

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- 84) Logan Minner, Medical Technology & Lily Neff, Biological  
Chemistry ( EPSCoR) (Wesley College)  
Kevin Shuman, Biology, Chemistry, Physics & the  
Environment (Wesley College)  
*Vertical Distribution of Photosynthetic Pigments in Silver Lake  
(Dover, DE)*
- 85) Lily Neff, Biological Chemistry ( EPSCoR) (Wesley  
College)  
Kevin Shuman, Biology, Chemistry, Physics & the  
Environment (Wesley College)  
*Prudent Practices in the Storage, Handling and Disposal of  
Laboratory Chemicals*
- 86) Mary Williams, Biological Sciences (EPSCoR) (DTCC)  
Kari St. Laurent, Environmental Science (DNERR)  
*Developing a Zooplankton Monitoring Program at the  
DNERR*

- 87) Savanah Love, Environmental Sciences (EPSCoR) (Wesley College)  
Stephanie Stotts, Environmental Studies (Wesley College)  
*Environmental and Water Quality Projects on Silver Lake, Dover, DE*
- 88) Jose Santana, Environmental Sciences (EPSCoR) (Wesley College)  
Stephanie Stotts, Environmental Studies (Wesley College)  
*Development of Rivers and Streams: A Historical Analysis*
- 89) Brooke Thompson, Environmental Sciences (EPSCoR) (Wesley College)  
Stephanie Stotts, Environmental Studies (Wesley College)  
*A Cost Benefit Analysis of Wesley College's Recycling Program in its First Semester*

## POSTER SESSION II

*(Christiana Care, Nemours Biomedical Research, Medical Laboratory Sciences, Psychological & Brain Sciences, Kinesiology & Applied Physiology, Physical Therapy, Nursing)*

### CHRISTIANA CARE HOSPITAL

- 1) Destiny Hollis, Biology (INBRE) (Wesley College)  
LeRoi Hicks, Internal Medicine (Christiana Care Hospital)  
*Opioid Overdose Patients: Identifying Patients at Risk for Rehospitalization Due to Subsequent Opioid and Benzodiazepine Treatment*
- 2) Kristen Pisarcik, Biotechnology (INBRE) (DTCC)  
Eric Kmiec, Gene Editing Institute (Christiana Care Hospital)  
*Gene Editing in *Saccharomyces cerevisiae* using CRISPR/Cas9*

### NEMOURS BIOMEDICAL RESEARCH

- 3) Alyssa Lattomus, Chemistry (NIH) (Washington College)  
Robert Akins, Nemours Biomedical Research (Nemours)  
*Surgical Skeletonization of Common Carotid Artery in an Animal Model Alters Vessel Compliance and Protease Activity*
- 4) Margaret Mahoney, Neuroscience (NSURP) (Dartmouth College)  
Melissa Alderfer, Nemours Biomedical Research (Nemours)  
*Assessing Socioeconomic Status and Overall Psychosocial Risk in Families of Children with Cancer*
- 5) Kyle Hinkle, Biological Sciences (NUCLEUS)  
Matthew Butchbach, Nemours Biomedical Research (Nemours)  
*Regulation of SMN2 Expression by Novel Small Molecules*

- 6) Stephanie Masters, Biology (NSURP) (James Madison University)  
Matthew Butchbach, Nemours Biomedical Research (Nemours)  
*Ephrin Receptor A4 (EPHA4) Expression in Spinal Muscular Atrophy Cells*
- 7) Meghan Brumbley, Neuroscience (NSURP) (Temple University)  
Esther Chung, Nemours Biomedical Research (Jefferson)  
*Receipt of Prenatal Care and Well Child Care among Drug Dependent Women and Their Young Children*
- 8) Robert Abishek, Neuroscience (INBRE) (Swarthmore College)  
Jane Crowley & Gray Vargas, Nemours Biomedical Research (Nemours)  
*Factors Affecting Recovery in Pediatric Concussion*
- 9) Andrew Doran, Histology (INBRE) (DTCC)  
Paul Fawcett & Carrie Paquette-Straub, Nemours Biomedical Research (Nemours)  
*Assessment of Clinical Value of Cytokines*
- 10) Melchizedek Myers, Chemistry (INBRE)  
Rochelle Haas, Nemours Biomedical Research (Nemours)  
*Oculomotor Dysfunction in Concussion: A Predictor of Protracted Recovery?*
- 11) Colton Takata, Biomedical Engineering (NSURP) (Johns Hopkins University)  
John Henley, Nemours Biomedical Research (Nemours)  
*Comparison of Intrinsic Kinematic Foot Models*
- 12) Camille Elliott, Biology (OHEI-HESSP) (Rowan University)  
Laurens Holmes, Nemours Biomedical Research (Nemours)  
*Race/Ethnicity Disentanglement in the Relationship between Substance Misuse and Mild Traumatic Brain Injuries (mTBI) in Children*
- 13) Anthony Filippini, Nursing (OHEI-HESSP) (West Chester University)  
Laurens Holmes, Nemours Biomedical Research (Nemours)  
*Race-Specific and Age-Adjusted Childhood Immunization Prevalence: Prospects for Diverse Culture Subpopulation Optimization*
- 14) Melissa Gray, Biology (OHEI-HESSP) (James Madison University)  
Laurens Holmes, Nemours Biomedical Research (Nemours)  
*Childhood Acute Myeloid Leukemia Characterization and Temporal Trends in the United States (1973-2013): Are There Variances in Sex, Age at Tumor Diagnosis, and Race in Four Decades?*
- 15) Andre Jones, Biology (INBRE) (Wesley College)  
Laurens Holmes, Nemours Biomedical Research (Nemours)  
*Implication of Race in the Relationship between Dental Disorders and Social Determinants among Children: Evidences from NSCH, 2012*

- 16) Linda Nguyen, Biology (OHEI-HESSP) (Villanova University)  
Laurens Holmes, Nemours Biomedical Research (Nemours)  
*Racial Variability in Major Pediatric Cancer Survival: Experience of Delaware's Largest Childhood Tumor Cohort, 2004-2014*
- 17) Eunice Shin, Biology (NSURP) (Villanova University)  
Lauren Hurd & Vicky Funanage, Nemours Biomedical Research (Nemours)  
*Delineating Genotype-Phenotype Correlations in Diastrophic Dysplasia*
- 18) Halley Donlin, Psychology (NSURP) (Elizabethtown College)  
Jing Jin, Nemours Biomedical Research (Nemours)  
*Optical Coherence Tomography (OCT) Study of Fixation Pattern, Macular Structure, and Ocular Dominance in Normal and Amblyopic Eyes*
- 19) Alyssa Givens, Biomedical Engineering (INBRE)  
Heidi Kecskemethy, Nemours Biomedical Research (Nemours)  
*Long-term Effects of Bisphosphonates on Bone Health in Children with Cerebral Palsy*
- 20) Lucy Sullivan, Molecular Cell Biology (NSURP) (University of California, Berkely)  
Sigrid Langhans, Nemours Biomedical Research (Nemours)  
*Development of Tools for High-throughput Drug Discovery in Drug-resistant Medulloblastoma*
- 21) Robert Dina, Biological Chemistry (INBRE) (Wesley College)  
Freeman Miller & Chris Church, Nemours Biomedical Research (Nemours)  
*The Long-term Outcome of Pelvic Asymmetry during Gait in Children with Cerebral Palsy Following Unilateral Femoral Derotation Osteotomy*
- 22) Samantha Weiss, Biochemistry (NSURP) (Rowan University)  
Andrew Napper, Nemours Biomedical Research (Nemours)  
*Development of High-throughput Screen for Compounds that Disrupt Binding of Leukemia Cells to Bone Marrow*
- 23) Celina Santiago, Chemistry (NSURP) (Villanova University)  
Reid Nichols & Chris Church, Nemours Biomedical Research (Nemours)  
*Foot Deformities and Gait Deviations in Children with Arthrogyriposis*
- 24) Catherine Dolan, Biological Sciences Education (INBRE)  
Laura Owens, Kristen Nicholson & Nancy Lennon, Nemours Biomedical Research (Nemours)  
*The Impact of Surgical and Physical Therapy Dose on Recovery in Children and Youth with CP*
- 25) Nicholas Imperato, Neuroscience (INBRE)  
Joe Piatt, Nemours Biomedical Research (Nemours)  
*Epidemiology of Spinal Injury in Childhood in the United States: 1997 to 2012*
- 26) Myranda Steingraeber, Neuroscience (NSURP) (University of Rochester)  
Judith Ross, Nemours Biomedical Research (Jefferson)  
*Investigating the Link between Neuroigin 4Y and Autism Spectrum Disorder in 47, XYY Syndrome*
- 27) Abigail Bisesi, Biology (ACCEL CTR) (Oberlin College)  
Valerie Sampson, Nemours Biomedical Research (Nemours)  
*Preclinical Testing of Targeted Therapies in Combination with Eribulin in Osteosarcoma*
- 28) Hannah Chidekel, Health: Science, Society, & Policy (Aaron Chidekel) (Brandeis University)  
Ambika Shenoy & Kathleen Peeke, Nemours Biomedical Research (Nemours)  
*Vaccine Adherence and Hesitancy Among Parents and Children with Cystic Fibrosis*
- 29) Aniah Coley, Public Health (ACCEL CTR) (DSU)  
Krishna White, Nemours Biomedical Research (Nemours)  
*Long Acting Reversible Contraception (LARC) Participatory Action Research (PAR)*

## MEDICAL LABORATORY SCIENCES

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- 30) Caitlin Blades, Foreign Language & Literature (McNair)  
Arun Kumar, Medical Laboratory Sciences  
*Nanofiber Scaffold for the Differentiation of Stem Cells into Specific Cell Lines*
- 31) Diamond Higgin, Neuroscience (McNair)  
Arun Kumar, Medical Laboratory Sciences  
*Topographical Changes of Bone Marrow Stem Cells Differentiating into Cardiac Cells on Nanoscaffolds*

## PSYCHOLOGICAL & BRAINS SCIENCES

---

- 32) Christina Woodson, Psychology (McNair) (Marquette University)  
Mary Dozier, Psychological & Brain Sciences  
*TBA*
- 33) Rachel Metzgar, Neuroscience (SE)  
James Hoffman, Psychological & Brain Sciences  
*How Does Emotion Interfere with Attention?*
- 34) Lizzy Marano, Psychology (SE)  
Julie Hubbard, Psychological & Brain Sciences  
*Gender Differences in Children's Verbal Content*
- 35) Arthur Currier, Neuroscience (McNair)  
Helen Intraub, Psychological & Brain Sciences  
*Lifespan Boundary Extension*

- 36) Marisa Chamness, Neuroscience (SE)  
Dayan Knox, Psychological & Brain Sciences  
*GR Functionality in the Hippocampus*
- 37) Emily Moulton, Neuroscience (SE)  
Dayan Knox, Psychological & Brain Sciences  
*GR Function in the mPFC and Amygdala in the Single Prolonged Stress Model*
- 38) Stephanie Rodgers, Neuroscience (INBRE)  
Jared Medina, Psychological & Brain Sciences  
*Examining the Relationship between Brain Damage and Proprioception*
- 39) Xiaxin Zhong, Psychology (SE)  
Beth Morling, Psychological & Brain Sciences  
*Cultural Differences in Feedback Exchanges*
- 40) Morgan Spurrier, Cognitive Science (SE)  
Joshua Neunuebel, Psychological & Brain Sciences  
*Sex Differences in the Acoustic Structure of Mouse Ultrasonic Vocalizations*
- 41) Victor Ike, Psychology (McNair) (Marquette University)  
Anna Papafragou, Psychological & Brain Sciences  
*Event Perception and Description*
- 42) Raevyn Johnson, Psychology (McNair) (Bloomfield College)  
Anna Papafragou, Psychological & Brain Sciences  
*The Development of Children's Communication Abilities*
- 43) Malak Kawan, Neuroscience (SE)  
Jeffrey Rosen, Psychological & Brain Sciences  
*Differential Expression of Immediate Early Genes of Juvenile Rats after Contextual Fear Conditioning*
- 44) Johanna Chajes, Neuroscience (SE)  
Tania Roth, Psychological & Brain Sciences  
*Using HDAC Inhibitors to Prevent Maltreatment-Induced Brain DNA Methylation*
- 45) Simran Kaur, Neuroscience (SE)  
Tania Roth, Psychological & Brain Sciences  
*The Effect of Zebularine on Rodents Exposed to Various Maternal Caregiving Techniques*
- 46) Sarah Beamish, Neuroscience (NUCLEUS)  
Jaclyn Schwarz, Psychological & Brain Sciences  
*The Impact of Sex and Neonatal Infection on Delays in Novel Object Recognition and Location and Changes in Proinflammatory Gene Expression in Juvenile Rats*
- 47) Julie Gomez, Neuroscience (McNair)  
Jaclyn Schwarz, Psychological & Brain Sciences  
*Examination of Maternal Immune Activation on Inflammatory Response of Placenta and Fetal Immune System*
- 48) Pragyan Khanal, Neuroscience (McNair)  
Jaclyn Schwarz, Psychological & Brain Sciences  
*Examination of Maternal Immune Activation on Inflammatory Response of Maternal and Fetal Brain*
- 49) Jennifer Lawrence, Neuroscience (SE)  
Jaclyn Schwarz, Psychological & Brain Sciences  
*An Investigation of Sex Difference in Microglia Morphology and Function*
- 50) Halley Rosenbloom, Biological Sciences (SE)  
Jaclyn Schwarz, Psychological & Brain Sciences  
*Impact of Sex Differences and Neuroimmune Activation on Novel Object Recognition and Location at the Onset of Spatial Learning in Rats*
- 51) Lauren Miller, Neuroscience (SE)  
Mark Stanton, Psychological & Brain Sciences  
*MK-801 Impairs the Retention of the Context-Shock Association in Standard Contextual Fear Conditioning in Adolescent Rats*
- 52) Corey Beinhart, Cognitive Science (SE)  
Timothy Vickery, Psychological & Brain Sciences  
*A Computational, Statistical, and Neurological Examination of Contextual Cueing in Visual Scenes*
- 53) Adrienne Kim, Biological Sciences (INBRE)  
Timothy Vickery, Psychological & Brain Sciences  
*Neural Representations of Wins and Losses across Different Opponent Contexts*

## KINESIOLOGY & APPLIED PHYSIOLOGY

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- 54) Cory Cacciola, Mechanical Engineering (INBRE)  
Elisa Arch, Kinesiology & Applied Physiology  
*Training Individuals Post-Stroke to use Passive-Dynamic Ankle-Foot Orthoses using Live Bio-Feedback*
- 55) Daniel Courtney, Exercise Science (INBRE)  
Elisa Arch, Kinesiology & Applied Physiology  
*Assessing the Validity of the G-Walk BTS® on Individuals with Unilateral Transtibial Amputations*
- 56) Amy Bednarek, Athletic Training (SE)  
Thomas Buckley, Kinesiology & Applied Physiology  
*A Descriptive Analysis of Concussion History and Abnormalities Identified by Vestibular/Ocular Motor Screening Tools*
- 57) Michael Christensen, Exercise Science & Dietetics (INBRE)  
Anahid Ebrahimi, Kinesiology & Applied Physiology  
*Comparing the Metabolic Cost for Healthy Individuals Walking With and Without Restricted Ankle Function*
- 58) Teresa Ferrara, Biological Sciences (INBRE)  
Anahid Ebrahimi, Kinesiology & Applied Physiology  
*Altered Gait Parameters of Healthy Individuals While Walking with Varying Levels of Restricted Ankle Function*
- 59) Amy Trask, Exercise Science (SE) & Emily Wunsch, Exercise Science (NUCLEUS)  
Nancy Getchell, Kinesiology & Applied Physiology  
*Contextual Interference Effect in Random vs Blocked Learning*

- 60) Eduardo Arocha, Exercise Science (NUCLEUS)  
Thomas Kaminski, Kinesiology & Applied Physiology  
*NCAA/DoD Grand Alliance: Concussion Assessment, Research and Education (CARE) Consortium – An Examination of Chronic Ankle Instability among Collegiate Athletes*
- 61) Peter Spurrell, Biological Sciences (SE)  
Thomas Kaminski, Kinesiology & Applied Physiology  
*A Comparison of Chronic Ankle Instability Tool and Balance Error Scoring System Outcomes*
- 62) Daniela Davison, Biomedical Engineering (CBER NSF REU) (NJ Institute of Technology)  
Chris Modlesky, Kinesiology & Applied Physiology  
*Improving the Reliability of a Technique to Calculate Rate of Force Development Scaling Factor (RFD-SF) in Children*
- 63) Juan Ruiz, Biochemistry (INBRE)  
Rhonda Prisby, Kinesiology & Applied Physiology  
*Intermittent Parathyroid Hormone Administration in Young and Old Male Fischer-344 Rats*

## PHYSICAL THERAPY

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- 64) Michael Hoffman & Susanna Trost, Biological Sciences (SE)  
Anjana Bhat, Physical Therapy  
*Differences in fNIRS Based Cortical Activation during Motor Tasks Across Children and Adults*
- 65) Ikira Peace, Communication (INBRE) & Jessica Gibbons, Exercise Science (CPW)  
Anjana Bhat, Physical Therapy  
*“Take Physical Therapy by the Hand and Dance”: Effects of Creative Dance Therapies on the Social Communication and Motor Skill of Children with Autism Spectrum Disorder (ASD)*
- 66) Daria Collins, Cognitive Science (McNair)  
Cole Galloway, Physical Therapy  
*The Effects of Ramp Ascend Focused Body-Weight Supported Activity on the Development of Infants With and Without Down Syndrome*
- 67) Nisha George, Biological Sciences (INBRE)  
Cole Galloway, Physical Therapy  
*Effects of BWSS on Lower Extremity Limb Movement in Infants with Down Syndrome*
- 68) Katie Holland, Biological Sciences (NUCLEUS)  
Michele Lobo, Physical Therapy  
*Examining the Impact of an Exoskeletal Garment, the Playskin Lift, on Reaching Behaviors in Toddlers with Arthrogyposis Multiplex Congenita*
- 69) Katelyn Klimowich, Biological Sciences (INBRE)  
Michele Lobo, Physical Therapy  
*Effects of the Wilmington Robotic Exoskeleton (WREX) and the PlaySkin Lift on Reaching Behaviors in Toddler’s with Arthrogyposis Multiplex Congenita (AMC)*

- 70) Casey Polasko, Exercise Science (INBRE)  
Michele Lobo, Physical Therapy  
*Use of the Playskin Lift™ to Assist At-Risk Infants with Reaching and Manipulation*
- 71) Nicholas Rattenni, Biomedical Engineering (CPW)  
Michele Lobo, Physical Therapy  
*Microcontroller Analysis of Percent Time Infants Spend in the Prone, Supine, Sitting, and Reclined Position*
- 72) Kendal Simmons, Exercise Science (McNair)  
Michele Lobo, Physical Therapy  
*Testing the Effectiveness of Hard Pediatric Wilmington Robotic Exoskeleton (P-WREX) vs. Soft Garment-based Playskin Lift on Exoskeleton in Improving Upper-Extremity Mobility, Reaching and Object Exploration in a Child with Arthrogyposis*
- 73) Emily Smith, Biological Sciences (NUCLEUS)  
Michele Lobo, Physical Therapy  
*Upper Extremity Exoskeletons and Their Effects on the Mobility of Toddlers with Arthrogyposis*
- 74) Ania Lipat, Applied Physiology & Kinesiology (CBER NSF REU) (University of Florida)  
Darcy Reisman, Physical Therapy  
*Neurophysiologic and Behavioral Mechanisms of Post-Stroke Locomotion Learning*
- 75) Logan Girton, Exercise Science (INBRE) (Slippery Rock University)  
Karin Silbernagel, Physical Therapy  
*Short-Term Effects of Low Level Laser Therapy on the Achilles Tendon*
- 76) Nia Powell, Athletic Training (ADaPT)  
Karin Silbernagel, Physical Therapy  
*Use of Extended Field of View Ultrasound Imaging to Evaluate Patella Tendon Structure: A Feasibility and Reliability Study*
- 77) Tyler Tice, Athletic Training (CPW)  
Karin Silbernagel, Physical Therapy  
*Changes in Gait Patterns and Triceps Surae Activity in Immobilization Boots*
- 78) Georgia Gagianas, Exercise Science (DRI)  
Lynn Snyder-Mackler, Physical Therapy  
*The Effect of Fear and Lack of Confidence on Knee Biomechanics in Athletes after Anterior Cruciate Ligament Reconstruction*

## NURSING

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- 79) Kelly Chen, Nursing (SE)  
Ingrid Pretzer-Aboff, School of Nursing  
*Correlation between Physical Activity and Cognition in Parkinson’s Disease*
- 80) Amoni Knight, Movement Science (INBRE) (DSU)  
Ingrid Pretzer-Aboff, School of Nursing  
*The Relationship between Upper Body Function to Quality of Life in People with Parkinson’s Disease*

- 81) Carly Piel, Medical Diagnostics (INBRE/NUCLEUS)  
Ingrid Pretzer-Aboff, School of Nursing  
*Proxy Evaluation of Falls Using the Fall-Tracking  
Questionnaire: Parkinson's Disease*
- 82) Akila Coleman, Spanish for the Health Professions  
(McNair) (Marquette University)  
Regina Wright, School of Nursing  
*The Association between Educational Attainment and Physical  
Activity in Community-Based Older Adults*

## POSTER SESSION III

*(Behavioral Health & Nutrition,  
Management Information Systems,  
Education & Human Development,  
Linguistics & Cognitive Science,  
Energy & Environmental Policy,  
Fashion & Apparel Studies,  
Artsbridge, Philosophy, Mathematical  
Sciences, Physics & Astronomy,  
Materials Science, Computer &  
Information Sciences, Electrical &  
Computer Engineering)*

### BEHAVIORAL HEALTH & NUTRITION

- 1) Karlee Stritzinger & Heather Latchford, Exercise Science  
(INBRE) (DTCC)  
Mark Lafferty, Allied Health & Carol Malkin, Exercise  
Science (DTCC)  
*Thermic Effect of Digestion using Various Fasting Protocols*
- 2) Krystal Lee, Dietetics (SE)  
Sheau Ching Chai, Behavioral Health & Nutrition  
*Antioxidant Effects on Bone Mineral Density and Body  
Composition in Adults Aged 65-80*
- 3) Jing Luo, Dietetics (Pattison)  
Sheau Ching Chai, Behavioral Health & Nutrition  
*The Effects of Dietary Fats on Cognitive Function and  
Emotional Status in Adults Aged 65-80*
- 4) Rosymar Magana, Health Behavioral Science (McNair)  
Elizabeth Orsega-Smith, Behavioral Health & Nutrition  
*The Factors Influencing Cognitive Ability in Older Adults*
- 5) Peter Chappell, Health Behavior Science (SL Fellow)  
Mia Papas, Behavioral Health & Nutrition  
*Implementation of a Food Pantry at the University of Delaware*

- 6) Varsha Kripalu, Biological Sciences (SE)  
Mia Papas, Behavioral Health & Nutrition  
*Race, Education, and Health Impact Smoking Cessation  
Behaviors among Mobile Food Pantry Users*
- 7) Tyler Myers, Health Behavior Science (Pattison)  
Mia Papas, Behavioral Health & Nutrition  
*E-Cigarette Policies and Practices within the State of Delaware*
- 8) Vanessa Santiago, Health Behavior Science (McNair)  
Mia Papas, Behavioral Health & Nutrition  
*Examining the Impact of Adverse Childhood Experiences  
(ACEs) on the Efficacy of the Strengthening Families Parenting  
(SFP) Program*
- 9) Alyssa Tate Biological Sciences (SL Fellow)  
Mia Papas, Behavioral Health & Nutrition  
*Effectiveness of a Smoking Cessation Intervention Program on  
Food Bank Users*
- 10) Julia Katcher, Health Sciences (Extension Scholars)  
Sue Snider & Kathleen Splane, New Castle County  
Cooperative Extension-Nutrition  
*Approaches for Promoting Fruit and Vegetable Consumption in  
Children Participating in "Up for the Challenge"*
- 11) Emily Merklen, Dietetics (Extension Scholars)  
Sue Snider & Kathleen Splane, New Castle County  
Cooperative Extension-Nutrition  
*Are You Up for the Challenge?: A Program to Improve Healthy  
Food and Physical Activity Choices Among Youth*

### MANAGEMENT INFORMATION SYSTEMS

- 12) Anyelo Almonte, Management Information Systems  
(McNair) (Bloomfield College)  
Gang Wang & Nerissa Brown, Accounting & MIS  
*TBA*

### EDUCATION & HUMAN DEVELOPMENT

- 13) Alexis Paller, Psychology (INBRE)  
Roberta Golinkoff, School of Education  
*Effects of Parent Reading and Audio Narration on Children's  
Comprehension of Books on Tablets*
- 14) Spencer Hoernes, Food Science (SL Fellow)  
Community Partner: Lutheran Community Services  
Allison Karpyn, Center for Research in Education & Social  
Policy  
*Green Inclusion's Gardening Guide*
- 15) Nadisha Downs, Human Services (McNair)  
Rob Palkovitz, Human Development & Family Studies  
*Non-residential Father Involvement of Young African  
American Men Ages 18-25 in Urban Contexts*

## LINGUISTICS & COGNITIVE SCIENCE

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- 16) Naiim Mason, Linguistics (Hofmann Scholar)  
Irene Vogel, Linguistics & Cognitive Science  
*Systematic and Computational Quantification of Language Differences*

## ENERGY & ENVIRONMENTAL POLICY

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- 17) Abigail Vanover, Energy & Environmental Policy (SE)  
John Byrne, Center for Energy & Environmental Policy  
*The Case for Alternatives: Movement beyond the Car in the U.S.*

## FASHION & APPAREL STUDIES

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- 18) Danielle Dubay-Bettors, Apparel Design (AHSS)  
Kelly Cobb, Fashion & Apparel Studies  
*Rethinking Solutions for Reducing Textile Waste in Landfills*

## ARTSBRIDGE

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- 19) Rachel Austin, Quantitative Biology (ArtsBridge)  
Lynnette Overby, Theatre  
*Building Demand for the Arts: A Qualitative Analysis of Arts Access in Wilmington, DE*

## PHILOSOPHY

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- 20) Wylie Darden, Philosophy (EPSCoR) (Howard University)  
Stephen Taylor, History, Political Science & Philosophy (DSU)  
*TBA*

## MATHEMATICAL SCIENCES

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- 21) Chris Cornwell, Mathematical Sciences (NSF REU)  
Richard Braun, Mathematical Sciences  
*Similarity Solutions and Tear Film Thinning*
- 22) Spencer Walker, Applied Mathematics (NSF REU)  
Richard Braun, Mathematical Sciences  
*Models for Tear Film Evaporation and the Corneal Epithelium*
- 23) Stephanie Clampitt, Mathematical Sciences (SE)  
Sebastian Cioaba, Mathematical Sciences  
*Applications of Mathematics to Economics*
- 24) Cory Cutsail, Mathematical Sciences (McNair)  
Sebastian Cioaba, Mathematical Sciences  
*Applications of Mathematical Programming Methods in Economics*
- 25) Nicole DiPasquale, Statistics (SE)  
Sebastian Cioaba, Mathematical Sciences  
*Investigations in Network Medicine*
- 26) Pasquale Zingo, Applied Mathematics (SF)  
Sebastian Cioaba, Mathematical Sciences  
*Data Analysis with Spectral Graph Theory*

- 27) Amanda Seiwel & Erin Tellup, Secondary Mathematics Education (SE & AHSS)  
Michelle Cirillo, Mathematical Sciences  
*Scaffolding the Introduction to Mathematical Proof*
- 28) Christopher Beam, Applied Mathematics (SE)  
Tobin Driscoll, Mathematical Sciences  
*Automatic Differentiation for ODE Sensitivity Analysis in MATLAB*
- 29) Jennifer Fanelle, Applied Mathematics (SF)  
Tobin Driscoll, Mathematical Sciences  
*Dimension Reduction for Neonatal Arterial Pressure Waveforms*
- 30) Matthew Meyers, Applied Mathematics (SF/Mathematical Sciences)  
Tobin Driscoll, Mathematical Sciences  
*Dimension Reduction and Clustering of Blood Pressure Waveforms*
- 31) Joshua Sporre, Mathematical Sciences (SE)  
Tobin Driscoll, Mathematical Sciences  
*Dimension Reduction for Stochastic ODEs using Active Subspaces*
- 32) Wenbin Li, Mathematical Sciences (NSF)  
David A. Edwards, Mathematical Sciences  
*Mathematical Extensions for Optical Biosensors*
- 33) Nathaniel Kim, Mathematical Sciences (SE)  
Mahya Ghandehari, Mathematical Sciences  
*Wavelet Theory*
- 34) Qile Wang, Mathematical Sciences (SE)  
Dominique Guillot, Mathematical Sciences  
*Paleoclimate Reconstructions via Modern Data Science*
- 35) Tina Torkaman, (Sharif Institute of Technology)  
Dominique Guillot & Mahya Ghandehari, Mathematical Sciences  
*Critical Exponents of Graphs*
- 36) Russell Harris, University Studies (EPSCoR)  
John Jungck, Biological Sciences & Mathematical Sciences  
*Evolutionary Game Theory for Optimizing Cancer Multi-drug Chemotherapy*
- 37) Guanyu Hou, Mathematical Sciences (SE)  
Francisco Javier Sayas, Mathematical Sciences  
*Numerical Simulation of Waves in Viscoelastic Media*
- 38) Sammy Eyong, Mathematics (INBRE) (DSU)  
Sokratis Makrogiannis, Mathematics (DSU)  
*Lower Leg Tissue Quantification and Validation Methods*
- 39) Kaitlyn Thomesen, Quantitative Biology (SE)  
Gilberto Schleiniger, Mathematical Sciences  
*Mathematical Model of Oxygen Delivery for HLHS Anatomy*



- 40) Riza Bautista, Mathematics (INBRE) (Wesley College)  
Derald Wentzien, Mathematics & Malcolm D'Souza,  
Chemistry (Wesley College)  
*CDC Wonder: Analysis of Multiple Cause of Death (Detailed  
Mortality), Delaware 1999-2014*

## PHYSICS & ASTRONOMY

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- 41) Jaspal Nijjar, Physics (SE)  
John Clem, Physics & Astronomy  
*Radio JOVE Project*
- 42) Nasiru Abdullah, Information Technology (INBRE) (DSU)  
Mohammad Khan, Physics & Pre-Engineering (DSU)  
*Development of Sensors for Breath Analysis Detecting  
Lung Cancer*
- 43) Seth Fair, Engineering Physics (INBRE) (DSU)  
Mohammad Khan, Physics & Pre-Engineering (DSU)  
*Novel Calibration Techniques for Biochemical Sensing  
Applications*
- 44) Eric Rouviere, Physics (SE)  
Edward Lyman, Physics & Astronomy  
*Predicting Cholesterol Interaction Sites of the A2A Adenosine  
Receptor*
- 45) Alexis Webb, Physics (SE)  
Edward Lyman, Physics & Astronomy  
*Computational Calorimetry*

## MATERIALS SCIENCE

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- 46) Jamie Beshore, Materials Science & Engineering (NSF-  
REU) (Cornell University)  
Matthew Doty, Materials Science & Engineering  
*Time-Integrated and Time-Resolved Photoluminescence  
Measurements of III-V Heterostructures*
- 47) Marc Christian, Mechanical Engineering (SE)  
Xinqiao Jia, Materials Science & Engineering  
*Vocal Fold Bioreactor Fabrication and Characterization*
- 48) Christian Harris, Biology (SE) (Lincoln University)  
Stephanie Law, Materials Science & Engineering  
*Numerical Simulations of Optical Phenomenon*
- 49) Dan Ferraro, Chemical Engineering (SE)  
William Shafarman, Materials Science & Engineering  
*Surface Sulfurization Effects on Thin Film Cu(InGa)Se<sub>2</sub> Solar  
Cells*
- 50) Isaac King, Chemical Engineering (SE)  
Joshua Zide, Materials Science & Engineering  
*TBA*
- 51) Lisa Mwanza, Biochemistry (NSF-REU) (Lincoln  
University)  
Joshua Zide, Materials Science & Engineering  
*Thermoelectrics in Time Varying Environments*

## COMPUTER & INFORMATION SCIENCES

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- 52) Ryan Beneck, Electrical Engineering (SE)  
Sunita Chandrasekaran, Computer & Information Sciences  
*Optimizing Search and Graph Algorithms using Parallel  
Programming Models*
- 53) Collin Clark, Computer Engineering (SE)  
Sunita Chandrasekaran, Computer & Information Sciences  
*Parallelizing Bioinformatics and Medical Imaging  
Applications: A Directive Based Approach*
- 54) Daniel Liang, Computer Science (SE)  
Sunita Chandrasekaran, Computer & Information Sciences  
*Enhancing Performance of Physics Simulations and Linear  
Algebra Programs Using OpenACC and OpenMP*
- 55) Eluamuno Enenmo, Computer Science (McNair)  
James Clause, Computer & Information Sciences  
*Dynamic Model of Leadership in Groups*
- 56) Casey Campbell, Electrical Engineering (SE)  
Fouad Kiamilev, Computer & Information Sciences  
*Stochastic Parallel Gradient Descent*
- 57) Benjamin Steenkamer, Computer Engineering (SE)  
Fouad Kiamilev, Computer & Information Sciences  
*Designing a New Amplifier for the SLEDs Projection System*
- 58) Matthew Schmittle, Computer & Information Sciences (SE)  
Chris Rasmussen, Computer & Information Sciences  
*Quadcopter Obstacle Avoidance via Audio Navigation*
- 59) John Bounds, Mechanical Engineering (SE)  
Michela Taufer, Computer & Information Sciences  
*Study of Clustering Methods for Food Items in NHANES  
Datasets*
- 60) Teague Forren, Computer Science (SE)  
Haining Wang, Computer & Information Sciences  
*C Program Vulnerability Detection*
- 61) Yifeng Liu, Computer Engineering (SE)  
Chengmo Yang, Computer & Information Sciences  
*Code Analysis with LLVM*
- 62) Abraham McIlvaine, Computer Science (SE)  
Chengmo Yang, Computer & Information Sciences  
*ISCAS '89 FPGA Benchmark Suite State Encoding*

## ELECTRICAL & COMPUTER ENGINEERING

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- 63) Andrew Kacmarcik & Jesse Semmel, Electrical Engineering  
(SE), Matthew Gallion, Electrical Engineering & Radhey  
Patel, Computer Engineering (ECE)  
Dennis Prather, Electrical & Computer Engineering  
*Design and Demonstration of a Wireless Communication  
System*

# POSTER SESSION IV

## *(Engineering: Biomedical, Mechanical, Chemical & Biomolecular, Civil & Environmental)*

### BIOMEDICAL ENGINEERING

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- 1) Dina Collins, Neuroscience (McNair)  
Danielle Benoit, Biomedical Engineering (University of Rochester)  
*Nanoparticle-mediated Delivery of miRNA-140 to Drive Chondrogenesis in Human Mesenchymal Stem Cells*
- 2) Margaret Billingsley, Biomedical Engineering (SE)  
Emily Day, Biomedical Engineering  
*Enhanced Detection of Circulating Tumor Cells Using EGFR-Targeted Nanoshells*
- 3) Nicole Kreuzberger, Biomedical Engineering (SE)  
Emily Day, Biomedical Engineering  
*Synthesis of Polyethylenimine (PEI) Coated Spherical Nucleic Acids for Enhanced siRNA Delivery*
- 4) Christian Montero, Biomedical Engineering (CBER NSF REU) (Boston University)  
Dawn Elliott, Biomedical Engineering  
*Determining a Fibril-Level Mechanism of Age Related Tendon Rupture*
- 5) Erica Comber, Biomedical Engineering (INBRE)  
Jason Gleghorn, Biomedical Engineering  
*Hypoxia Signaling in Mouse Lung Development*
- 6) Elizabeth Marcin, Biomedical Engineering (SE)  
Jason Gleghorn, Biomedical Engineering  
*Expression of Myosin Isoforms in Fetal Lungs*
- 7) Peter Sariano, Biomedical Engineering (INBRE)  
Jason Gleghorn, Biomedical Engineering  
*Toward a 3D Cell Culture Model of an Airway with Contractile Smooth Muscle*
- 8) Zachary Sexton, Biomedical Engineering (UDRF REU)  
Jason Gleghorn, Biomedical Engineering  
*Developing Microfluidic Models for Fluid Stresses in Complex Epithelial Networks*
- 9) Alexander Kulyk, Biomedical Engineering (SE)  
Curtis Johnson, Biomedical Engineering  
*Quantification of Brain Tumor Stiffness and Heterogeneity from MRE Images*
- 10) Grace McIlvain, Biomedical Engineering (SE)  
Curtis Johnson, Biomedical Engineering  
*Mechanical Properties of the Child's Brain*
- 11) Christian Thompson, Biomedical Engineering (SE)  
Curtis Johnson, Biomedical Engineering  
*Stiffness of White Matter Lesions in Multiple Sclerosis*
- 12) Patrick Canning, Biomedical Engineering (SE)  
Megan Killian, Biomedical Engineering  
*Sustained Growth of Embryonic Mouse Limbs in Vitro*
- 13) Lindsay Erndwein, Materials Science and Engineering (CBER NSF REU) (Pennsylvania State University)  
Megan Killian, Biomedical Engineering  
*Second Harmonic Generation Microscopy Generates Collagen Fiber Alignment of the Achilles Tendon-Bone Interface*
- 14) Emily Hudson, Pre-Veterinary Medicine & Animal Biosciences (INBRE)  
Megan Killian, Biomedical Engineering  
*Targeted Effects of FGF9 Deletion in Scleraxis Lineage Cells*
- 15) Julia Paganucci, Mechanical Engineering (CBER NSF REU & BMEG)  
Megan Killian, Biomedical Engineering  
*Assessing Mouse Hip Joint Laxity Ex Vivo*
- 16) David Sun, Biomedical Engineering (UD Dare to Be FIRST REU) (Washington University)  
Christopher Price, Biomedical Engineering  
*Mechanobiology of Tribological Rehydration in Cartilage*
- 17) Natalie Muneses, Biomedical Engineering (SE)  
Chandran Sabanayagam, Biomedical Engineering  
*Developing a Micro-fraction Collector using Fluorescence Microscopy*
- 18) Gemma Ciabattini, Mechanical Engineering (DRI)  
Fabrizio Sergi, Biomedical Engineering  
*Developing a Backdrivable Wrist Robot: Investigating a Co-located and Non Co-located Design and Implementation*
- 19) Elspeth Grasso, Biomedical Engineering (SE)  
Fabrizio Sergi, Biomedical Engineering  
*Testing MR Compatibility of the MR-SoftWrist*
- 20) Margaret Pires-Fernandes, Biomedical Engineering (CBER NSF REU) (University of Florida)  
Fabrizio Sergi, Biomedical Engineering  
*Effects of Gait Speed and Stride Length on Joint Torque Distribution in Normal Gait*
- 21) Takunda Masike, Engineering (CBER NSF REU) (Clark College)  
John Slater, Biomedical Engineering  
*A Finite Element Model to Predict Strain Fields in Hydrogels Resulting from Cell-Generated Forces Using an Embedded Fiducial Marker Array*
- 22) Laura Sturgill, Biomedical Engineering (SE)  
John Slater, Biomedical Engineering  
*Antibody Treatment of Endothelial Cells to Inhibit Circulating Tumor Cell Docking*

- 23) Matthew Scott, Mathematical Sciences (NIH)  
Ryan Zurakowski, Biomedical Engineering  
*Rate Comparisons of 2-LTR Circle Formation in Active and Quiescent HIV-infected Cell*

## MECHANICAL ENGINEERING

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- 24) Kanak Chattopadhyay, Mechanical Engineering (SE)  
Suresh Advani, Mechanical Engineering  
*Characterizing Capillary Flow via Micro-CT*
- 25) Tess Carella, Mechanical Engineering (SE)  
Suresh Advani, Mechanical Engineering  
*Fabric and Textile 3D Permeability Characterization Work-Station*
- 26) Jacob Fish, Biomedical Engineering (DRI)  
Tom Buchanan, Mechanical Engineering  
*Generation of Subject-specific Knee Finite Element Models using Magnetic Resonance Imaging*
- 27) Oluwajomiloju Olaode, Biomedical Engineering (CBER NSF REU) (Worcester Polytechnic Institute)  
Thomas Buchanan, Mechanical Engineering  
*Establishing a Mathematical Model to Estimate Knee Joint Loading during Gait*
- 28) Sarah Leung, Biomedical Engineering (SE)  
David Burris, Mechanical Engineering  
*Self-Lubricating Scaffold Reinforced Polyvinyl Alcohol Hydrogels*
- 29) Michael Whiting, Mechanical Engineering (CBER & MEEG)  
David Burris, Mechanical Engineering  
*Tribologically Induced Articulate Cartilage Recovery*
- 30) Nicole Moylett, Mechanical Engineering (SE)  
Joseph Feser, Mechanical Engineering  
*Thermoreflectance Expansion and Laser Properties*
- 31) Eryn Gerber, Biomedical Engineering (DRI)  
Jill Higginson, Mechanical & Biomedical Engineering  
*A Novel Design for a Garment-based Body-weight Support Harness*
- 32) Daniel Grindle, Mechanical Engineering (DRI)  
Jill Higginson, Mechanical & Biomedical Engineering  
*Passive Support System's Effect on Walking Kinematics and Kinetics*
- 33) Kelley Kempfski, Biomedical Engineering (CBER NSF REU & MEEG)  
Jill Higginson, Mechanical & Biomedical Engineering  
*Interlimb Comparison of Joint Angle Variability Post-Stroke*
- 34) Andrew Whitford, Mechanical Engineering (CBER NSF REU & MEEG)  
Jill Higginson, Mechanical & Biomedical Engineering  
*Redistribution of Backpack Load*
- 35) Tash Zunaid, Biomedical Engineering (CBER NSF REU & MEEG)  
Jill Higginson, Mechanical & Biomedical Engineering  
*Effects of the Passive Support System on Lower Back Forces*
- 36) Jesse Bloecker, Mechanical Engineering (SE)  
Guoquan Huang, Mechanical Engineering  
*Development of Navigation and Mapping Algorithms using Simultaneous Localization and Mapping (SLAM)*
- 37) Patrick Geneva, Mechanical Engineering (SE)  
Guoquan Huang, Mechanical Engineering  
*Visual-Inertial Navigation on Mobile Devices with Rolling Shutter Cameras*
- 38) Marisa Bisram, Mechanical Engineering (CBER NSF REU & MEEG)  
X. Lucas Lu, Mechanical Engineering  
*The Role of Z<sub>A</sub> in Calcium Signaling during Long and Short Term Culture*
- 39) Jessica Kerns, Biology (CBER NSF REU) (Saint Joseph's University)  
X. Lucas Lu, Mechanical Engineering  
*Antioxidant from Green Tea can Protect Cartilage from Degeneration*
- 40) Kelsey Jordan, Bioengineering (CBER NSF REU) (University of Pennsylvania)  
Kurt Manal, Mechanical Engineering  
*Brake Simulator Testing of Reaction Time and Force Application Using DriveSim*
- 41) Dillon Elliott, Mechanical Engineering (CBER NSF REU) (University of Colorado)  
Debora Massouda, Mechanical Engineering  
*3D Printing and Characterization of Cellular Material*
- 42) Christopher Kitson, Mechanical Engineering (SE)  
Ajay Prasad, Mechanical Engineering  
*Self-healing Membranes via Microcapsules for Fuel Cell Applications*
- 43) Elizabeth Racca, Mechanical Engineering (CBER & MEEG)  
Dustyn Roberts, Mechanical Engineering  
*Drones, Mazes, and Algorithmic Learning*
- 44) Jason Stevens, Mechanical Engineering (CBER & MEEG)  
Dustyn Roberts, Mechanical Engineering  
*This Machine Kills Fascists: A Robotic Guitar*
- 45) E.J. Carron, Mechanical Engineering (SE)  
Valery Roy, Mechanical Engineering  
*Experimental Demonstration of Energy Harvesting by Aeroelastic Galloping*
- 46) John Pfreundschuh, Mechanical Engineering (SE)  
Valery Roy, Mechanical Engineering  
*Engineering Analysis of a Torsional Galloping Wind Energy Harvester*

- 47) Michael DiMercurio, Mechanical Engineering (SE)  
Herbert Tanner, Mechanical Engineering  
*Autonomous Quadrotor Control and Stationary Radiation Detection*
- 48) Aris Mardirossian, Mechanical Engineering (SE)  
Erik Thostenson, Mechanical Engineering  
*Process of Carbon Nanotube Film Growth by Electrophoretic Deposition*
- 49) Nicholas Geneva, Mechanical Engineering (SE)  
Lian-Ping Wang, Mechanical Engineering  
*3D Rayleigh-Benard Convection in a Cylindrical Cell*
- 50) Danielle Gerstman, Mechanical Engineering (SE)  
Liyun Wang, Mechanical Engineering  
*SimUThor Enhancement for Simulation Study Preparation*
- 51) Kevin Hrubik, Mechanical Engineering (CBER NSF REU & MEEG)  
Liyun Wang, Mechanical Engineering  
*Unconfined Compression Testing of Intervertebral Discs*

## CHEMICAL & BIOMOLECULAR ENGINEERING

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- 52) Robert Cipolla, Chemical & Biomolecular Engineering (NSF CBET)  
Maciek Antoniewicz, Chemical & Biomolecular Engineering  
*Elucidating the Metabolism of the Extremely Thermophilic Archaeon Sulfolobus with <sup>13</sup>C Tracers and Flux Analysis*
- 53) Ryan McNulty, Chemical & Biomolecular Engineering (NSF CBET)  
Maciek Antoniewicz, Chemical & Biomolecular Engineering  
*Synergistic Interactions between Auxotrophic E. coli Knockout Strains*
- 54) Wenxin Wang, Chemical Engineering (Plastino)  
Douglas Buttrey, Chemical & Biomolecular Engineering  
*Synthesis and Characterization of Advanced Materials for Catalysis*
- 55) Christine Mourafetis, Chemical Engineering (NSF-REU) (New York University)  
Wilfred Chen & April Kloxin, Chemical & Biomolecular Engineering  
*Constructing Spatially Organized Hydrogels for Controlled Protein Release*
- 56) Justin Terr, Chemical Engineering (SE)  
Wilfred Chen, Chemical & Biomolecular Engineering  
*Elastin-Like Peptides (ELPs) for the Simple Purification of Snake Antivenom Peptides*
- 57) Austin Roadarmel, Biological Sciences (NIH-COBRE,)  
David Colby, Chemical & Biomolecular Engineering  
*Implications of Pathological Tau Protein Conformation in Neurodegenerative Disease*

- 58) Jacob Shapiro, Chemical Engineering (SE)  
David Colby, Chemical & Biomolecular Engineering  
*Creation of cDNA Libraries to Find Protein-Protein Interaction Partners*
- 59) Sean Daniels, Chemical Engineering (CCEI)  
Vlachos Dion, Chemical & Biomolecular Engineering  
*One Pot Reductive Etherification of 5-hydroxymethyl Furfural to Fuels using Homogeneous Metal Salts*
- 60) Tobias Mazal, Chemical Engineering (CCEI)  
Vlachos Dion, Chemical & Biomolecular Engineering  
*Hydrodeoxygenation of Furfural over Ruthenium-Based Catalysts*
- 61) Spencer Burton, Polymer Science & Engineering (NSF REU) (Case Western Reserve University)  
Thomas Epps, Chemical & Biomolecular Engineering  
*Materials from Nature: Synthesis and Characterization of Bio-based Polymers from Cashews*
- 62) John Saltwick, Chemical Engineering (SE)  
Thomas Epps, Chemical & Biomolecular Engineering  
*Stabilizing Long-Range Morphologies in Block Copolymer Thin Films*
- 63) George Wieber, Chemical Engineering (Plastino)  
Thomas Epps, Chemical & Biomolecular Engineering  
*Synthesis and Characterization of Bio-Based Sustainable Polymers*
- 64) Ian Heffner, Chemical Engineering (Plastino)  
Eric Furst, Chemical & Biomolecular Engineering  
*Microrheology and Differential Dynamic Microscopy of Complex Viscoelastic Materials*
- 65) Paul Blanchard, Chemical Engineering (NSF REU) (Pennsylvania State University)  
Arthi Jayaraman, Chemical & Biomolecular Engineering  
*Coarse-grained Molecular Dynamics Simulation Studies of Polymer Nanocomposites*
- 66) Charles Collins, Chemical Engineering (SE)  
Feng Jiao, Chemical & Biomolecular Engineering  
*Efficient Electroreduction of Carbon Dioxide to Formate via a Silver-Tin Catalyst*
- 67) Christopher Addonizio, Chemical Engineering (NSF-REU)  
Kristi Kiick, Materials Science & Engineering & Christopher Roberts, Chemical & Biomolecular Engineering  
*Synthesis and Conformational Characterization of Peptides Derived from Granulocyte Colony-Stimulating Factor*
- 68) Benjamin Kelly, Chemical Engineering (SE)  
Michael Klein, Chemical & Biomolecular Engineering  
*Modeling the Production of Deoxygenated Biomass Fast Pyrolysis Oils via Product Recycling*
- 69) Mark LaRue, Biomedical Engineering (NSF CAREER Award)  
April Kloxin, Chemical & Biomolecular Engineering  
*Mimicking the Fibrillar Structure of the Extracellular Matrix using Collagen Mimetic Peptides*

- 70) Joseph Spohn, Biomedical Engineering (Pew Charitable Trusts)  
April Kloxin, Chemical & Biomolecular Engineering  
*Understanding Fibroblast Response to Cell Polarization using Layered Hydrogels*
- 71) Shea Cole, Chemical Engineering (SE)  
Christopher Kloxin, Chemical & Biomolecular Engineering  
*Novel Restorative Dental Materials Using Copper(I)-Catalyzed-Azide-Alkyne Cycloaddition (CuAAC) Reaction*
- 72) Grant Knappe, Chemical Engineering (SE)  
Christopher Kloxin, Chemical & Biomolecular Engineering  
*Novel Mechanophores for Self-Healing and Strengthening Polymer Systems*
- 73) Laura Mumper, Chemical Engineering (SE)  
Christopher Kloxin, Chemical & Biomolecular Engineering  
*Kinetic Analysis of Thiol-Ene Photo-Polymerization Reactions Incorporating Charged Monomers*
- 74) Lauren Bartels, Chemical Engineering (NSF-REU)  
Raul Lobo, Chemical & Biomolecular Engineering  
*Synthesis of a Novel Organometallic Metal Organic Framework for Water Desalination*
- 75) Natalie Lefton, Chemical & Biomolecular Engineering, (NSF-REU)  
Raul Lobo, Chemical & Biomolecular Engineering  
*Comparison of Zinc Substituted Zeolites for Carbon Monoxide Oxidation*
- 76) Clare Wunder, Chemical Engineering (CCEI)  
Raul Lobo, Chemical & Biomolecular Engineering  
*Producing Industrially Important Chemicals via Heterogeneously Catalyzed Formaldehyde-Olefin Condensation Reaction*
- 77) Kevin Schmalbach, Chemical Engineering (NSF) (Rowan University)  
Michael Mackay, Chemical & Biomolecular Engineering  
*Utilization of Shear-Induced Particle Migration to Produce Polymer-Metal Composites*
- 78) Carly Battistoni, Chemical Engineering (SE)  
Christopher Roberts, Chemical & Biomolecular Engineering  
*Multiple Particle Tracking Microrheology: A Technique to Measure Protein Solution Viscosity*
- 79) Gabrielle Parker, Chemical Engineering (MedImmune)  
Christopher Roberts, Chemical & Biomolecular Engineering  
*Expression and Purification of Granulocyte-Colony Stimulating Factor*
- 80) Curt Strab, Chemical Engineering (NIH, NSF)  
Christopher Roberts, Chemical & Biomolecular Engineering  
*Specific Protein-excipient Interactions and Conformational Stability of  $\alpha$ -Chymotrypsinogen A with Density and Calorimetric Measurements*
- 81) Connor Shannon, Biomedical Engineering (SE)  
Millicent Sullivan, Chemical & Biomolecular Engineering  
*Stabilizing pDNA polyplexes through Covalent Crosslinking of H3 tails and PEI*
- 82) Shuzhen Chen, Chemical & Biomolecular Engineering (NSF-REU) (New York University)  
Norman Wagner, Chemical & Biomolecular Engineering  
*Characterizing Carbon Black Aggregate Size and Stability in Model Flow Battery Electrolyte Mixtures*
- 83) Cameron Mertz, Chemical Engineering (NSF-REU)  
Norman Wagner, Chemical & Biomolecular Engineering  
*Predicting the Viscosity of Polydisperse Suspensions: A Systematic Approach*
- 84) David Brown, Chemical Engineering (NSF-REU) (Columbia University)  
Yushan Yan, Chemical & Biomolecular Engineering  
*Membrane-less Redox Flow Batteries Based on Hydrophobic Ferrocenes*

## CIVIL & ENVIRONMENTAL ENGINEERING

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- 85) Minghan Xian, Chemical Engineering (SE)  
Pei Chiu, Civil & Environmental Engineering  
*Development of a Redox Titration Method for a Wood Derived Black Carbon on its Electrochemical Behavior*
- 86) Celine Robinson, Environmental Engineering (SE)  
Rachel Davidson, Civil & Environmental Engineering  
*Voluntary Home Acquisition to Reduce Hurricane Risk: A Multivariate Analysis*
- 87) Zachary Merritt, Computer Engineering (SL Fellow)  
Ardeshir Faghri, Civil & Environmental Engineering  
Community Partner: Delaware Department of Transportation  
*DELDOT GIS Software Development*
- 88) Tyler Seidel, Chemical Engineering (SE)  
Paul Imhoff, Civil & Environmental Engineering  
*Examining the Effect on Water Retention of Soils Amended with Biochar*
- 89) Alison Treglia, Environmental Engineering (SE)  
Julia Maresca, Civil & Environmental Engineering  
*Role of Carotenoid Compounds in Oxidative Stress Response in Bacteria Isolated from Concrete*

# ORAL PRESENTATIONS

**9:00 – 10:00 ORAL SESSION 1**

## EDUCATIONAL ENRICHMENT (ROOM 110)

**Moderator: Jenni Buckley, Mechanical Engineering**

Taylor Tewksbury, Marine Biology (SL)  
Jacqueline Fajardo, Chemistry & Biochemistry  
Community Partner: Delaware Nature Society  
*Improving Educational Accessibility of Water Quality Data*

Srinivasa Gajjala, Biomedical Engineering & Grace Ruiz  
Cooper, Mechanical Engineering (SL)  
Jenni Buckley, Mechanical Engineering  
Community Partner: The Perry Initiative and Orthopaedics  
in Action  
*OIA Development and Perry Initiative*

Marielle Kraft, Elementary Teacher Education (ArtsBridge)  
Lynnette Overby, Theatre  
*South African and United States History: A Middle School  
Curriculum to Teach the Art of Understanding Culture*

Rebecca Jewell, Human Services (SL)  
Brian Freedman, Center for Disability Studies  
Community Partner: UD Career and Life Studies  
Certificate Program  
*CLSC Residential Experience*

## CRIMINAL JUSTICE REFORM (ROOM 215)

**Moderator: Ben Fleury-Steiner, Sociology & Criminal Justice**

Grace Wood, Criminal Justice (AHSS)  
Aaron Kupchik, Sociology & Criminal Justice  
*Inequality and Counseling*

Lauren McCrear, Political Science (McNair)  
Chrysanthi Leon, Sociology & Criminal Justice  
*Street Life: The Lived Experience of Black Men and the  
Carceral State*

Stan Cuff, Human Services (McNair)  
Christy Visher, Sociology & Criminal Justice  
*Recidivism Prevention Programs*

Hugh Bayard, Psychology (McNair)  
Benjamin Fleury-Steiner, Sociology & Criminal Justice  
*Ex-offenders and the Pardon Process*

## SUSTAINABLE APPAREL (ROOM 322)

**Moderator: Kelly Cobb, Fashion & Apparel Studies**

Isabella Aswad, Fashion Merchandising (NUCLEUS/  
AHSS)  
Abigail Clarke-Sather, Fashion & Apparel Studies  
*Geotextiles Research*

Mikayla DuBreuil, Apparel Design, Fashion Merchandising  
(AHSS)  
Kelly Cobb, Fashion & Apparel Studies  
*Sustainability Impacts of Local vs. Global Sourcing*

Jennifer Saunders, Fashion Merchandising (AHSS)  
Sheng Lu, Fashion & Apparel Studies  
*Artisan Trade: Unseen Impact*

**10:10 – 11:10 ORAL SESSION 2**

## CAMP (ROOM 110)

**Moderator: Suzanne Burton, Music**

Chu Zhou, Dietetics (Extension Scholars)  
Karen Johnston, 4-H Youth Development  
*Teen Leadership Development*

Ali Keith, Plant Science (Extension Scholars)  
Kaitlin Klair, 4-H Youth Development  
*4-H Summer Youth Development*

Christina Conlin, Anthropology; Greta Sweeney &  
Elizabeth Van Winkle, Art Conservation (SL)  
Vicki Cassman, Art Conservation  
Community Partners: Winterthur Museum, Garden &  
Library; Salvation Army Summer Camp  
*Making Art Accessible: Our Summer at Winterthur Museum  
and the Salvation Army*

Meaghan Anderson & Olivia Giglio, Music Education (SL)  
Suzanne Burton, Music  
Community Partner: Salvation Army Summer Camp  
*Beat Goes On*

## AGRICULTURE & FOOD (ROOM 215)

**Moderator: Michelle Rodgers, Cooperative Extension**

Amanda O'Keeffe, Public Policy (SL)  
Mia Papas, Behavioral Health & Nutrition  
Community Partner: Bright Spot Ventures  
*Expanding Food Accessibility*

Jayne Soyak, Geography (SL)  
Lindsay Naylor, Geography  
Community Partner: Bright Spot Ventures  
*Urban Agriculture and Youth Aging Out of the Foster Care  
System*

Alexis Omar, Animal & Food Science (Extension Scholars)  
Michelle Rodgers, Cooperative Extension  
*Beyond Fork to Table Summer EDGE program*

Jackie Arpie, Agriculture & Natural Resources (Extension Scholars)  
Jennifer Volk, Plant & Soil Sciences  
*Documenting Climate Adaptations in Agriculture*

## **FASHION & DYE (ROOM 322)**

**Moderator: Jocelyn Alacantara-Garcia, Art Conservation**

Taylor Pearlstein, Art Conservation (AHSS)  
Jocelyn Alacantara-Garcia, Art Conservation  
*The Norwich Textile Industry: Uncovering the Secrets of Dyeing in 18th c. England*

Riley Thomas, Art Conservation (AHSS)  
Jocelyn Alacantara-Garcia, Art Conservation  
*Benedict Codecasa's Swatch Book: A Snapshot of the Viennese Textile Industry*

Ariana Bishop, Fashion Merchandising (AHSS)  
Belinda Orzada, Fashion & Apparel Studies  
*Fashion on All Fronts: The Significance of Dress During World War I*

## **POLITICS & POLICY (ROOM 417)**

**Moderator: Lindsay Hoffman, Communication**

Kristina Demou, Communication (CPC/AHSS)  
Lindsay Hoffman, Communication  
*#Politics: Social Media and the Presidential Race*

Julian Jackson, Communication (McNair)  
Jennifer Lambe, Communication  
*The Tensions Between Hate Speech and Free Speech*

Benjamin Carleton, Sociology (AHSS)  
Ronet Bachman, Sociology & Criminal Justice  
*Citizen Trust in the Police: A Cross-National Examination*

Nicole Carmichael & Tyler Shade, Public Policy (SL)  
Steven Peuquet, Public Policy & Administration  
Community Partner: Community Legal Aid Society, Inc.  
*Fair Housing for CLASI*

## **11:20 -12:20 ORAL SESSION 3**

## **WOMEN'S STUDIES & SOCIAL JUSTICE (ROOM 215)**

**Moderator: Lynnette Overby, Theatre**

Sarah Mayo & Maria Rizzo, Criminal Justice (AHSS)  
Susan Miller, Sociology & Criminal Justice  
*Trauma-Informed Courts in Relation to Prostitution*

Rebecca Glinn, Women & Gender Studies (AHSS)  
Jennifer Naccarelli, Women & Gender Studies  
*The Role of Pornography in Understanding Consent*

Haley Magwood, Political Science (McNair)  
Leslye Orloff, The National Immigration Women's Advocacy Project (American University)  
*Changing Lives: The Effects of Receiving Approved Legal Permanent Residency for U-Visa Victims and VAWA Self-Petitioners*

Dominique Oppenheimer, International Relations (ArtsBridge)  
Lynnette Overby, Theatre  
*Art and Activism: Women's Use of Poetry for Change in the US and South Africa*

## **MATERIAL CULTURE (ROOM 322)**

**Moderator: Vicki Cassman, Art Conservation**

Eva Allison, Anthropology (AHSS)  
Jay Custer, Anthropology  
*Inventory and Cultural Analysis of Nanticoke Basketry*

Alaina Smith, Anthropology (AHSS)  
Jessica Horton, Art History  
*Native Northwest Coast Art at the University of Delaware*

Amanda Kasman & Karissa Muratore, Art Conservation (AHSS)  
Vicki Cassman, Art Conservation  
*Nancy's Dollhouse: Conserving a Miniature Mansion*

## **ENGLISH EDUCATION (ROOM 417)**

**Moderator: Melissa Ianetta, English**

Lisa Pham, History Education (McNair)  
Robert Hampel, Education  
*Teachers on the Countryside: How Teaching Influenced Women's Roles in Rural Communities*

Kristen Todd, English Education (AHSS)  
William Lewis, Education  
*Getting Graphic: Creating a Graphic Novel Database for English Language Arts Teachers*

Claire Armann, English (NUCLEUS)  
Melissa Ianetta, English  
*Comparison of Attitudes towards Writing between STEM and Humanities Students*

**1:30 – 2:30 ORAL SESSION 4****WELL-BEING (ROOM 110)****Moderator: Karen Edwards, Behavioral Health & Nutrition**

Juliana Mbakwe, Exercise Science & Chante' Vann, Health & Physical Education (SL)  
 Karen Edwards, Behavioral Health & Nutrition  
 Community Partner: Girls, Inc.  
*Does Using a Fitness Game Format Increase Summer Campers Fitness Levels?*

Dominique Carpio, Health Behavior Science & Justin Mitchell, Exercise Science (SL)  
 Iva Obrusnikova, Behavioral Health & Nutrition  
 Community Partner: EPIC (Endless Possibilities in the Community); Meadwood Transition Program, Red Clay School District  
*Using Video Prompting to Promote the Acquisition of Fitness Tasks in Adults with Developmental Disabilities*

Erica Rathie, Health Behavior Science (SL)  
 Elizabeth Orsega-Smith, Behavioral Health & Nutrition  
 Community Partner: Howard Weston Senior Center; Claymore Center; Rockland Place  
*Happiness Project*

Amanda Raker, Apparel Design (SL)  
 Kelly Cobb, Fashion & Apparel Studies  
 Community Partner: Newark Senior Center  
*Wearing Well-Being*

**ANTHROPOLOGY (ROOM 215)****Moderator: Patricia Sloane-White, Anthropology**

Kayla Morrell, Biological Sciences (NUCLEUS)  
 Melissa Melby, Anthropology  
*Celiac Disease, An Unwelcome Protector: A Look at the Positive Selection of Celiac Disease Genes*

Emaline Reyes, Anthropology (AHSS)  
 Karen Rosenberg, Anthropology  
*Hips Don't Lie: What Pelvic Morphology Can Tell Us about Bipedalism and Childbirth in Humans*

Darian Lawrence, Political Science (McNair)  
 Patricia Sloane-White, Anthropology  
*Blackness and Race in Japan*

Chelsea Adebisi, Health Behavior Science (McNair/Pattison)  
 Kelebogile Setiloane, Behavioral Health & Nutrition  
*Exploring Cultural Beliefs and Young Child Feeding Among African Immigrants in Delaware*

\* This presentation includes images of female nudity

**ART (ROOM 322)****Moderator: Amy Hicks, Art & Design**

Madison Bacon, Fine Arts (AHSS)  
 Abigail Donovan, Art & Design  
*The Art of Storytelling*  
 Stefanie Hamill, Fine Arts (AHSS)  
 Amy Hicks & Abigail Donovan, Art & Design  
*Talking to Myself: A Stop-Motion Dream Animation\**

Joseph Gardner, Fine Arts (AHSS)  
 Abigail Donovan, Art & Design  
*Humans: A New Breed*

Iliana Burgos, Comparative Literature (McNair)  
 Martha Carothers, Art & Design  
*Radioactive Reactors*

**ECONOMICS & STATISTICS (ROOM 417)****Moderator: Ronet Bachman, Sociology**

Paul Mooney, Economics (AHSS)  
 Farley Grubb, Economics  
*A Quantitative View of Chandler's Thesis*

Xingguo Wang, Economics (AHSS)  
 Joshua Duke, Applied Economics & Statistics  
*Evidence on the Success of Land Value Taxation: A Synthesis and Preliminary Model*

Mengzheng Yao, Sociology (AHSS)  
 Alan Fox, Philosophy  
*Applying Statistical Methods to the Study of Classical Chinese Philosophy*

**2:40 – 3:55 ORAL SESSION 5****HEALTHY COMMUNITIES (ROOM 110)****Moderator: Mia Papas, Behavioral Health & Nutrition**

Taylor Ryan, Human Services (SL)  
 Steve Eidelman, Human Development & Family Studies  
 Community Partner: National Leadership Consortium on Developmental Disabilities  
*Dual Diagnosis: How to Best Support Individuals with both a Disability and Mental Illness*

Alexa Meinhardt & Jaelyn Natalone, Biological Sciences (SL Scholars)  
 Mia Papas, Behavioral Health & Nutrition  
 Community Partner: Westside Family Healthcare  
*Understanding the Social Determinants of Health in Underserved Communities: A Partnership with Westside Family Healthcare*



Catie Cottrell & Felicia Kriner, Psychology; Jessica Prucha, Neuroscience; & Jillian Solomon, Early Childhood Education (SL)

Mary Dozier, Psychological & Brain Sciences  
Community Partner: Delaware Division of Family Services  
*Providing Support to High-Risk Families in the Community*

Selina Delgado & Victoria Kager, Psychology (SL)  
Mary Dozier, Psychological & Brain Sciences  
Community Partner: Delaware Division of Family Services  
*Enhancing Fidelity Among Parent Coaches*

Kadisha Mack, Psychology (McNair)  
Mary Dozier, Psychological & Brain Sciences  
*Disruptive Behavior in Toddlerhood: A Developmental Precursor to Maladaptive Social Information Processing at Age Eight*

## **PSYCHOLOGY & DIVERSITY (ROOM 215)**

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**Moderator: James Jones, Psychological & Brain Sciences**

Vanessa Hatton, Black American Studies (CSD /AHSS)  
James Jones, Psychological & Brain Sciences  
*Personalizing the LAT to Measure Attitudes about Diversity*

Rosmeiry Valera, Psychology (McNair) (Bloomfield College)  
Jean-Phillipe Laurenceau, Psychological & Brain Sciences  
*The Relationship between Fear of Cancer Recurrence and Checking Behavior in Breast Cancer Survivors*

Greg Sieber, Cognitive Science (NUCLEUS/ AHSS)  
Beth Morling, Psychological & Brain Sciences  
*The Impact of Empathy on Design Idea Generation*

Season Cooper, English & Branham Menard, Political Science/Black American Studies (CSD/McNair)  
Rosalie Rolon Dow, School of Education & James Jones, Psychological & Brain Sciences  
*Tell it Like it Is: Race Stories at UD*

Sarah Wong, Medical Diagnostics (Siemens Healthineers/ INBRE/IWSTEM)  
Dara Morey, (Siemens Healthineers)  
*TBA*

## **ENGLISH & MUSIC (ROOM 322)**

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**Moderator: Daniel Stevens, Music**

Cherie Larkin, English (AHSS)  
Siobhan Carroll, English  
*Circulating Nature: Planetary Politics in the Transatlantic Imagination, 1791-1914*

Dianne Wade, English (McNair) (Southern Nazarene University)

Siobhan Carroll, English  
*Before Barbie: Representations of Doll Culture in 19th Century Children's Literature*

Katherine Navarro, English (AHSS)  
George Miller, English  
*Adam's Lament: An Exploration of Lament Tradition in Literature*

Jonathan Bergh, Music Composition (AHSS)  
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