

THE 11TH ANNUAL  
**CENTER FOR RESEARCH AND  
CREATIVITY SYMPOSIUM**

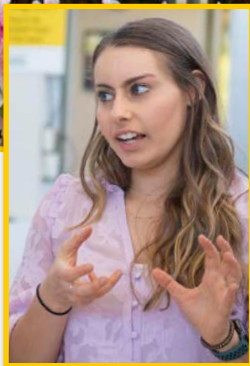
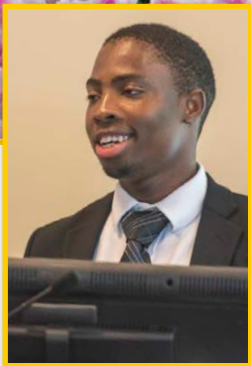


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MISSION STATEMENT OF THE METHODIST UNIVERSITY  
CENTER FOR RESEARCH AND CREATIVITY

The mission of the Methodist University Center for Research and Creativity is to establish educational opportunities that are collaborative and inquiry-based with the intention that every Methodist University student has access to exploratory learning across the curriculum.

“Faculty research and creativity are at the heart of the academic endeavor. Not only do these activities help to create new knowledge and new experience, but they add tremendously to teaching and learning. This work models for students the academic rigor and care involved in knowledge production, engages students in the process itself, and helps students become more critical information consumers for the rest of their lives — a vital skill in today’s environment.”

– Dr. Stanley T. Wearden  
President

## WEEK AGENDA | APRIL 4-8, 2022

## Monday | April 4

11 a.m. - 3 p.m.	STEAM Week Event - ROYGBIV and You: Color Theory and Golden Ratio	The Quad (Berns Student Center in case of Inclement Weather)
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## Tuesday | April 5

3:30 p.m.	Student Genre Fiction Reading	Hendricks 122
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## Wednesday | April 6 (See full Symposium Day schedule below)

9 a.m.-3 p.m.	11th Annual Center for Research and Creativity Symposium	See Program for Locations
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## Thursday | April 7

7 p.m.	B.F. Stone Lyceum: "Our Diversity is Our Strength: Addressing Race and Gender in Higher Education"	PA Building, Medical Lecture Hall
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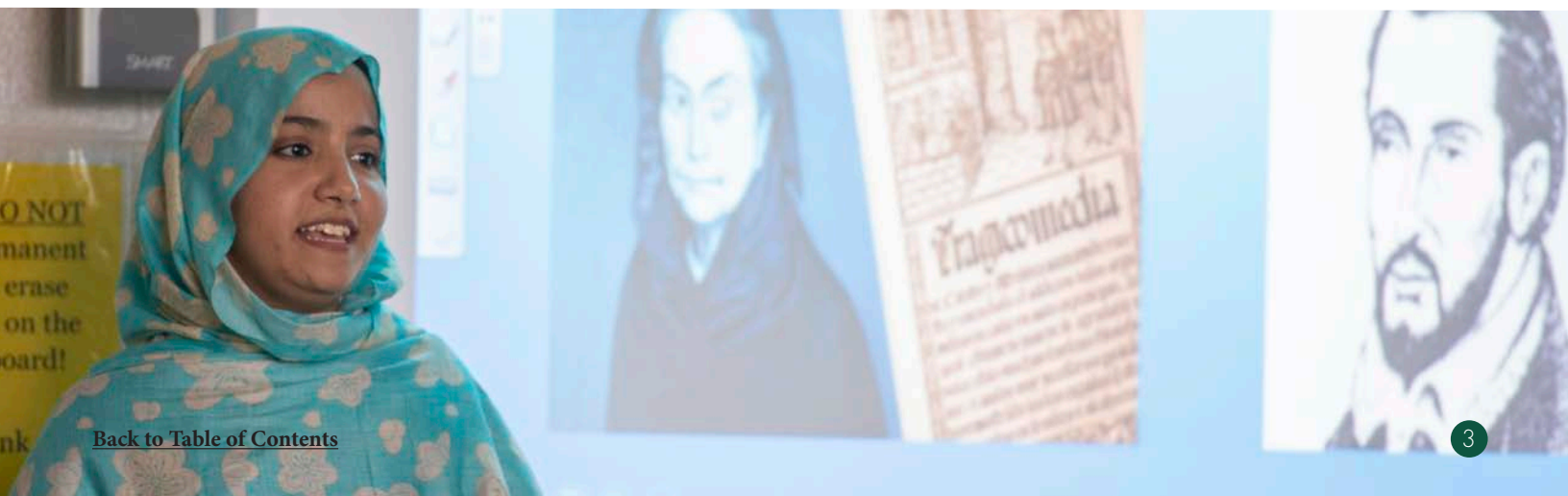
## Friday | April 8

11 a.m.	STEAM Week Event - Musical Instruments, How They Work and Are Made	The Quad (Berns Student Center in case of Inclement Weather)
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## CRC SYMPOSIUM AGENDA | APRIL 6, 2022

Time	Event	Location
9-11 a.m.	Morning Session	See Program for Details
11 a.m.	CIRCUIT	Matthews Chapel
Noon to 1 p.m.	Cape Fear New Music Festival Lecture: "Music and Humor" by Dr. Michael Potts ( <i>Philosophy</i> ) and Dr. Scott Marosek ( <i>Music</i> )	Chorus Room G2, Reeves Fine Arts Complex
1-3 p.m.	Afternoon Session	See Program for Details
2-3 p.m.	Poster Session	Berns Student Center
3 p.m.	STEAM Week Event - No Air, Harder to Breathe: Lung Function, Effect of Chemicals, Singing/Playing Instruments	The Quad (Berns Student Center in case of Inclement Weather)
4 p.m.	TedX	Yarborough Auditorium, Clark Hall
7:30 p.m.	Eighth-Annual Cape Fear New Music Festival "Musical Humor and Irony"	Matthews Ministry Center





## MORNING SESSION

### SHAKESPEARE | HENDRICKS 122

9-9:20 a.m.	Scene to Screen: An Analysis and Adaptation of "Titus Andronicus"	Abigail McCandless
9:20-9:40 a.m.	Existentialist Thought in "Hamlet"	Matthew Parker
9:40-10 a.m.	LGBT Representation in "Twelfth Night"	Caroline Novak
10-11 a.m.	Q&A	

### INTERDISCIPLINARY: OCCUPATIONAL THERAPY AND ENGINEERING | HENDRICKS 222

9-9:20 a.m.	Trends in Research: Common Pediatric Assessment Tools That Occupational Therapist Studies Utilize	Kelsea Hunter
9:20-9:40 a.m.	Engineering: Quantifying Qualitative Survey Responses	Darren Patrick, Henry Murray, Sirjan Kalakheti
9:40-11 a.m.	Improvements in Waiting Time for School Pickup and Dropoff	Jacob Pressley, Jordan Younger, Rashawn Green
10-11 a.m.	Q&A	

### FINANCIAL ECONOMICS: GLOBAL CONCERNS | YARBOROUGH AUDITORIUM, CLARK HALL

9-9:20 a.m.	Critical Theory and Markets Based on Sexual Emancipation and Modern Society	Sadot Giraldo Barbosa Carreón
9:20-9:40 a.m.	Remittances and Their Relationship with Migration and Resultant Public Sentiment	Stephen Atwell
9:40-10 a.m.	Computer Literacy in Improving Education in Northern Uganda	Mary Akoko
10-10:20 a.m.	Is the Digitalization of India Rushed?	Hem Lata Nayal
10:20-11 a.m.	Q&A	



## AFTERNOON SESSION

## INTERDISCIPLINARY: ANCIENT POLITICS AND RELIGION | HENDRICKS 122

1-1:20 p.m.	Harmonization of Heaven, Earth, and Humankind (Dong Zhongshu: Convincing Emperor Wu to Adopt His Idea of Rulership)	Jeong Chul Kim
1:20-1:40 p.m.	The Role of Pilgrimage in the Creation of Islam as a Universal Religion	Marie Michelle Ishimwe
1:40-3 p.m.	Q&A	

## INTERDISCIPLINARY: FOOD AND TRAVEL | HENDRICKS 222

1-1:20 p.m.	Eating Habits and Knowledge Among D-III Collegiate Student-Athletes and Coaches	Heather Tsapp, Maddie Hernandez
1:20-1:40 p.m.	The Value of Education Abroad	Jonathan Wertz, Tanner Hendricks, Ava Broussard, Anaya Brown
1:40-2 p.m.	Guatemala Presentation on Non-Governmental Organizations	Trey Samuelian, Josie Samuelian, Jake Patterson, Daniel Magen
2-3 p.m.	Q&A	

## MUSIC: THE INSTRUMENTS OF REVOLUTION | NURSING 103

1-1:20 p.m.	Virtuosic Dulcian Repertoire of Early Baroque Italy: Composition Connections	Zachary Keyes
1:20-1:40 p.m.	Music as an Active Participant in the Glorious Revolution	Keegan Foyles
1:40-2 p.m.	Drumming for Fun: A Study of Military Rudiments in Public Music	Ashlee Dudley
2-3 p.m.	Q&A	

## FINANCIAL ECONOMICS: DOMESTIC CONCERNS | YARBOROUGH AUDITORIUM, CLARK HALL

1-1:20 p.m.	Modeling the Discount Rate for Long-Run Environmental Policies	James R. Horton
1:20-1:40 p.m.	Inflation Burden by Income	Jinho Marques Cabral
1:40-2 p.m.	Effect of Childbearing on Labor Force Participation of Women During COVID-19	Ana Lovrinovic
2-2:20 p.m.	The Current and Future State of the North Carolina Housing Market	Joshua Lallo
2:20-3 p.m.	Q&A	



POSTER SESSION | 2-3 P.M.

Posters will be in Berns Student Center. Students will be available for questions during the Poster Session.

Posters

Automating Data Collection for OT Department Accreditation Report.....	Darren Patrick; Henry Murray; Sirjan Kalakhetti Engineering, Industrial & Systems Engineering Advisors: Dr. Matthew Foreman & Dr. Girish Upreti
Campus Way Finding .....	Tsetan Dolkar, Jakeem Meadows, Cameron Craig, Justin Summers Engineering, Industrial & Systems Engineering Advisor: Dr. Denise H. Bauer
Cramer’s Rule .....	Abby Caddick Mathematics & Computer Science Advisor: Dr. Kathleen Fick
Feminine Hygiene and Safe Sex Promotion: An Observational Study .....	Alexander Parker Kinesiology Advisor: Dr. Gregory Stewart
Financial Wealth and International Trade .....	Ann Tukari Financial Economics Advisor: Dr. Robert Gmeiner
Football Facility Lobby.....	Macie Szalach, Ezekiel Amissah, Kenneth Charles Engineering, Industrial & Systems Engineering Advisor: Dr. Denise H. Bauer
Gaming on Campus.....	Jackson Barriger, Canon Alexander, David Terra-Nova Engineering, Industrial & Systems Engineering Advisor: Dr. Denise H. Bauer
Gratitude Interventions to Reduce Student Stressors .....	Victoria Hall, Nijia Lewis, Anna Rosier, Rae Stewart, Sera Vornheder Psychology Advisors: Dr. Katherine Snyder & Dr. Laura Mars
Green and Gold Locker Room .....	Diego Ramiro, Ty’Juan Wiley, Noah Atkinson, Terence Williams Engineering, Industrial & Systems Engineering Advisor: Dr. Denise H. Bauer
Harms of Inflation: Has Monetary Policy Caused Differential Inflation?.....	Teboho Motsелеkatse Financial Economics Advisor: Dr. Robert Gmeiner

Information Overload Project .....	Ryan De Armon, Kellen Pace, Mariah Blanco, Diego Guevara Engineering, Industrial & Systems Engineering Advisor: Dr. Denise H. Bauer
Information to Students.....	Tyree Copeland, Jakob Fick, Caleb Rogers, Erik Fritts-Coppin Engineering, Industrial & Systems Engineering Advisor: Dr. Denise H. Bauer
Kindergarten Transition Readiness for Children Receiving Occupational Therapy Services.....	Summer Crowell, Hailey Harris, Carly Carver Occupational Therapy Advisor: Amy Spence, OTD, OTR/L
L'Hôpital's Rule.....	Drew Topoly Engineering & Mathematics Advisor: Dr. Kathleen Fick
Making CHAMPS More Efficient.....	George Rockett, Cole Bondarek, Ta'vion Montgomery, Brandon Hopson Engineering, Industrial & Systems Engineering Advisor: Dr. Denise H. Bauer
Occupational Deprivation and Maternal Well-being of Mothers of Pre-term Infants: How the NICU Experience Shapes Motherhood Roles and Occupations .....	Katherine Jones, Erica Santos, Margaret Warren Occupational Therapy Advisor: Dana Kolbfleisch, OTD, OTR/L & Dr. Matthew Foreman
Political Economy of the Metaverse.....	Suchada Bunkongthon Financial Economics Advisor: Dr. Robert Gmeiner
Redesign of the Tutoring Center.....	Banks Engle, Jorge Sanchez, Jaden Tuttle, Daniel Carney Engineering, Industrial & Systems Engineering Advisor: Dr. Denise H. Bauer
School Pickup and Dropoff.....	Jacob Pressley, Jordan Younger, Rashawn Green Engineering, Industrial & Systems Engineering Advisor: Dr. Denise H. Bauer & Dr. Girish Upreti
Sierpinski's Triangle .....	Geneva Barriger Mathematics Advisor: Dr. Kathleen Fick
The Effects of a Therapeutic Dance Class on Quality of Life, Balance, and Occupational Performance in Children with Autism Spectrum Disorder: A Study .....	Abbey Tucker Occupational Therapy Advisor: Dr. Matthew Foreman
The Fourier Series.....	Ryan Martin Engineering & Mathematics Advisor: Dr. Kathleen Fick



## POSTER PRESENTATION SCHEDULE

**The Impact of Loneliness and Social Support on Resiliency and Depressive Symptoms in College Students During the Pandemic** .....

Megan Wilson, Chakalyn Patterson, Sierra Norwood,  
Derrick Adams, Trinity Mosher, Hannah Williams,  
Mohammed Abdulsahra, Kelsie Hagan  
Psychology  
Advisor: Dr. Katherine Snyder

**The Impacts of Caffeine Tolerance and Sleep Deprivation on Visuospatial Performance** .....

Emily Byrd, Shamira Fuller-Cross,  
Akeem Nenoit, Deztiny Smith  
Psychology  
Advisor: Dr. Katherine Snyder

**The Russell's Paradox** .....

Jihao Zheng  
Mathematics & Computer Science  
Advisor: Dr. Kathleen Fick

**The Treatment of Anxiety in the Math Classroom** .....

Geneva Barriger  
Mathematics Education  
Advisor: Dr. Kathleen Fick





# The 11th Annual Center for Research and Creativity Symposium

## April 6 | 9 a.m. - 3 p.m.



### MORNING SESSION | HENDRICKS 122

#### SHAKESPEARE

9-9:20 a.m.

#### SCENE TO SCREEN: AN ANALYSIS AND ADAPTATION OF "TITUS ANDRONICUS"

**Abigail McCandless** | Junior; Computer Science; Fayetteville, N.C.  
**Advisor:** Dr. Emily Leverett, English

The human sentiments of love and hate have the power to sow the seeds of creation and destruction. Ironically, two of the most powerful emotions are also two of the most volatile; a powerful hate can sprout from a mighty love. If a person is harmed by the one they love the most, or if their beloved person is harmed by someone else, hate can easily follow. The deadly conflict between Titus and Tamora, the leads

in one of William Shakespeare's earliest plays, is proof of that fact. This presentation will analyze both the psychological and sociological motivations and the impacts of the characters' ultimate abandonment of their morality and humanity resulting from their hatred for one another. Additionally, this presentation will also propose a modernized adaptation of Shakespeare's early work. Trading ancient Rome with a twenty-first century small town and showcasing that the main conflict is rooted in the corruption of power. Though the play is dated in some aspects, the play's themes remain relevant to this day. The psychological and sociological aspects of Shakespeare's revenge-tragedy, "Titus Andronicus," make the task of adapting the play both a thrilling and daunting challenge.

9:20-9:40 a.m.

#### EXISTENTIALIST THOUGHT IN "HAMLET"

**Matthew Parker** | Junior; History; Spring Lake, N.C.  
**Advisor:** Dr. Emily Leverett, English

"Hamlet" is a story that continues to resonate with people throughout history, with the concepts being some of the most influential in all of literature. The ideas conceived through the play suggest an overarching theme of existentialism, a philosophy that came about during the 20th century that emphasizes the importance of oneself in a godless or hopeless world. The term "godless" in this instance refers to the more atheistic side,

but there are also Christian existentialist philosophies. The connection can be the play's overarching theme to the individual characters and the existential issues that face them. Hamlet is the central conception of the ideology, but other characters such as Ophelia have a different way of dealing with self-importance. The purpose of the research shown is to attribute the self to Hamlet, which reveals the revolutionary concepts Shakespeare conceived as well as the importance of his work. The significance of the connection to this philosophy brings an element of understanding of oneself and how people can deal with their vexatious existence.

9:40-10 a.m.

#### LGBT REPRESENTATION IN "TWELFTH NIGHT"

**Caroline Novak** | Junior; Theater and Education; Ocracoke Island, N.C.  
**Advisor:** Dr. Emily Leverett, English

In this research paper, I analyzed the idea that characters in Shakespeare's "Twelfth Night" can be interpreted as non-straight and non-cisgendered people. Not only did I apply my own knowledge to tie the thesis together, I also made sure to pull new information that helped support it even further. In order to conduct modern and helpful research,

I used JSTOR and ProQuest, mainly referencing academic articles to support any claims. Though, I also referenced the play itself throughout the paper, using quotes directly from it to exemplify the points I was making. During this research, I dug deep into the idea of how interpreting these characters as members of the LGBT community enhances the plot. These modifications make it much more sentimental to modern-day readers, especially those who seek validation through fictional characters. As a member of the LGBT community, examining the complexity of gender fluidity through the play "Twelfth Night" was wholly enjoyable and I would enjoy expanding even further with the topic.

## MORNING SESSION | HENDRICKS 222 INTERDISCIPLINARY: OCCUPATIONAL THERAPY AND ENGINEERING

9-9:20 a.m.

### TRENDS IN RESEARCH: COMMON PEDIATRIC ASSESSMENT TOOLS THAT OCCUPATIONAL THERAPIST STUDIES UTILIZE

**Kelsea Hunter** | Graduate Student, OTD Program; Savannah, Ga.  
**Advisor:** Meredith Gronska, OTD, OTR/L, CLA; Occupational Therapy

Occupational therapy practitioners working with young children are often limited by the availability and affordability of assessment tools for conducting evaluations and tracking outcomes. In order to facilitate best practice recommendations, this study aimed to analyze the most commonly used assessment tools in peer-reviewed occupational therapy research studies. Researchers appraised Level I-IV studies from 2010-2020 conducted with children under the age of five years within the scope of occupational therapy practice. Studies were retrieved from searches across five databases (PubMed, EBSCO [Cinhal] Taylor

& Francis, and Embase) in February 2021. Each article was reviewed for alignment with inclusion and exclusion criteria and the primary outcome measures of each study were recorded. The initial search identified 2,416 articles. After review, 127 articles were included in the final analysis, extracting 155 individual outcome measures. The most commonly used measures were the Vineland Adaptive Behavior Scales, Second Edition (VABS-II), Test of Playfulness (ToP), Sensory Profile (SP), Goal Attainment Scale (GAS), Conners' Comprehensive Behavior Rating Scales (CCBRS), Canadian Occupational Performance Measure (COPM), Beery-Buktenica Developmental Tests of Visual-Motor Integration (BERRY-VMI), and the Bruininks-Oseretsky Test of Motor Proficiency 2nd edition (BOT-2). The findings support those of previous studies exploring this issue among occupational therapists from different areas of practice. The results in this study highlighted the need for a multifaceted approach, encompassing educational, managerial and individual responsibility for best practices in evaluation by pediatric occupational therapists.

9:20-9:40 a.m.

### ENGINEERING: QUANTIFYING QUALITATIVE SURVEY RESPONSES

**Darren Patrick** | Senior; Engineering, Industrial & Systems Engineering; Riverdale, Ga.

**Henry Murray** | Senior; Engineering, Industrial & Systems Engineering; Oklahoma City, Okla.

**Sirjan Kalakheti** | Senior; Engineering, Industrial & Systems Engineering; Gorkha, Nepal

**Advisors:** Dr. Matthew Foreman, Occupational Therapy; Dr. Girish Upreti, Engineering

Methodist University's Occupational Therapy (OT) department is required to provide data to their accreditation board on an annual

basis. One part of the data required is a post-graduation survey. The OT department committee working with the accreditation board designed this survey. The survey contains multiple qualitative questions that are scored using quantitative methods. Working with members of the OT department, our team will group similar questions together to create a generalized process, which the OT department can then quantify survey answers and deliver them to the accreditation board. The current process for data synthesizing is manual and undefined, leading the work to take longer than necessary. Using Excel, our team will automate the survey results and create a program capable of calculating the relative importance of each question, highlighting areas that are performing well and areas that are performing poorly. This program will improve the OT department's survey analysis by reducing the time required to process surveys. Furthermore, automating the results will allow the OT department to see issues in the department clearly.

9:40-10 a.m.

### IMPROVEMENTS IN WAITING TIME FOR SCHOOL PICKUP AND DROPOFF

**Jacob Pressley** | Senior; Engineering, Industrial & Systems Engineering; Hendersonville, N.C.

**Jordan Younger** | Senior; Engineering, Industrial & Systems Engineering; Virginia Beach, Va.

**Rashawn Green** | Senior; Engineering, Industrial & Systems Engineering; Blythewood, S.C.

**Advisors:** Dr. Denise Bauer, Engineering; Dr. Girish Upreti, Engineering

School drop-off/pick-up lines are used to effectively and safely assist parents and guardians to get students from school. The systems of school drop-off/pick-up lines have definitely improved in terms of taking account of students and making sure they get to their parents or guardians. Current systems have classification groups and walkie-talkies to identify and send students to their vehicle. There are still issues identified with these systems such as waiting times, space, and identification through communication. Improving these waiting times can be through methods such as line set up, waiting area, grouping, and new communication systems. This can be finalized by collecting information on schools (mainly middle schools) that have issues with drop off/pick up lines and making improvements to make the system as a whole beneficial.

## MORNING SESSION | YARBOROUGH AUDITORIUM, CLARK HALL

### FINANCIAL ECONOMICS: GLOBAL CONCERNS

9-9:20 a.m.

#### CRITICAL THEORY AND MARKETS BASED ON SEXUAL EMANCIPATION AND MODERN SOCIETY

**Sadot Gildardo Barbosa Carreón** | Junior; Financial Economics; San Luis Potosí, México

**Advisor:** Dr. Robert Gmeiner, Financial Economics

Critical theory, a product of the thinkers of Frankfurt School, has come to have great relevance in the modern world. It has not only changed the way society understands and regards traditional values, but it has also served as the basis for the appearance of movements that have created new markets based on people's sexuality. In this paper, I will analyze the proposal of critical theory and its application to the constitution of movements that turn, eventually, into markets worth billions of dollars.

Through qualitative analysis of data, I will show how these markets are based on critical theory and benefit principally supporters of such a theory. After that, the parameters I shall focus on will be of qualitative character with reliance on available statistics, such as ideological compatibility between a movement-market and critical theory, market value, principal supporters of each movement and their modus operandi, incidence of discourse against capitalism and Christian values, health impact, and educational impact. Once this analysis is done, I will draw my own conclusions and reflect on the possibility of an opening for sordid markets based on sexuality, which could give an increase of profit and a positive movement under economic terms but nonetheless would have a detrimental effect on society, including eventually the loss of real economic goals, which help people live better materially, educationally, and culturally, under a framework of freedom.

9:20-9:40 a.m.

#### REMITTANCES AND THEIR RELATIONSHIP WITH MIGRATION AND RESULTANT PUBLIC SENTIMENT

**Stephen Atwell** | Junior; Financial Economics; Mbabane, Eswatini

**Advisor:** Dr. Robert Gmeiner, Financial Economics

My work will center around remittance data gathered by various financial institutions and the relationship between them and public sentiment towards migration. Remittances often follow a countercyclical path when compared with other forms of foreign investment, that being that these capital transfers are boosted by instability at their destination, as opposed to the opposite that is true for traditional

international transfers. Remittances can often account for large amounts of underdeveloped countries GDP figures, and they are of course spurred by migration. Herein lies the primary interest of my study. My work involves study of the relationship between these cash transfers and the public sentiment towards migration in both source and destination countries. I understand that quantifying public sentiment is difficult and subjective, hence the creation of some arbitrary rating system may be necessary for a more complete exploration. My project is invested in concepts that are hallmarks of globalization, and I find them to be linked closely with the waning authority of states in terms of commerce and movement.

9:40-10 a.m.

#### COMPUTER LITERACY IN IMPROVING EDUCATION IN NORTHERN UGANDA

**Mary Akoko** | Junior; Business Administration and Financial Economics; Pader, Uganda

**Advisor:** Dr. Robert Gmeiner, Financial Economics

The goal of this research is to investigate the role of computer literacy in enhancing education in impoverished areas like Northern Uganda. Electrical and telecommunications systems are taken for granted by

over a billion people. However, for billions more people throughout the world, such as those in Northern Uganda, service on demand is still a faraway fantasy, and internet connection is merely a story. The World Bank has undertaken various technological infrastructure assessment and development initiatives in recognition of the need to promote global information and communications technologies (GICT). In education, computers have evolved into powerful tools and valuable resources. While the computer can help with the two classic parts of literacy, reading and writing, it also produces a new literacy that necessitates a paradigm shift in literacy education.

10-10:20 a.m.

#### IS THE DIGITALIZATION OF INDIA RUSHED?

**Hem Lata Noyal** | Senior; Financial Economics and Accounting; Nainital, India

**Advisor:** Dr. Robert Gmeiner, Financial Economics

Over 80% of banknotes in circulation were removed by the Indian government in 2016. Demonetization ended up laying the groundwork for India's digital economy. Fueled by the COVID-19 pandemic, digital

payment services like Paytm, PhonePe, and Google Pay have emerged as victorious in a country where many are uneducated or have no internet access. This article examines how this radical, aggressive, and even authoritarian approach compelled many to use digital technology, as well as its long-term consequences for the Indian economy. Rapid digitization has paved a path for increased transparency, less documentation, and a smoother running of transactions. However, important questions about privacy, security, and equity still linger in the digital India.



### CIRCUIT | 11 A.M. MATTHEWS CHAPEL

Close your eyes and imagine the cross of Christianity. What image do you see? Imagine the person on the cross. Who is there? In the week leading up to Symposium Wednesday, diverse images of crucifixion will be displayed in the Matthews Ministry Center hallway. Responses and reactions to these images will be gathered (cited or anonymous) and presented during the CIRCUIT hour on Wednesday. Senior students will also share interfaith symbols that have meaning from their personal journey of faith.

### AFTERNOON SESSION | HENDRICKS 122 INTERDISCIPLINARY: ANCIENT POLITICS AND RELIGION

1-1:20 p.m.

#### HARMONIZATION OF HEAVEN, EARTH, AND HUMANKIND (DONG ZHONGSHU: CONVINCING EMPEROR WU TO ADOPT HIS IDEAL RULERSHIP)

**Jeong Chul Kim** | Junior; Spanish and Global Studies; Fayetteville, N.C.  
**Advisor:** Dr. Karen Kletter, History

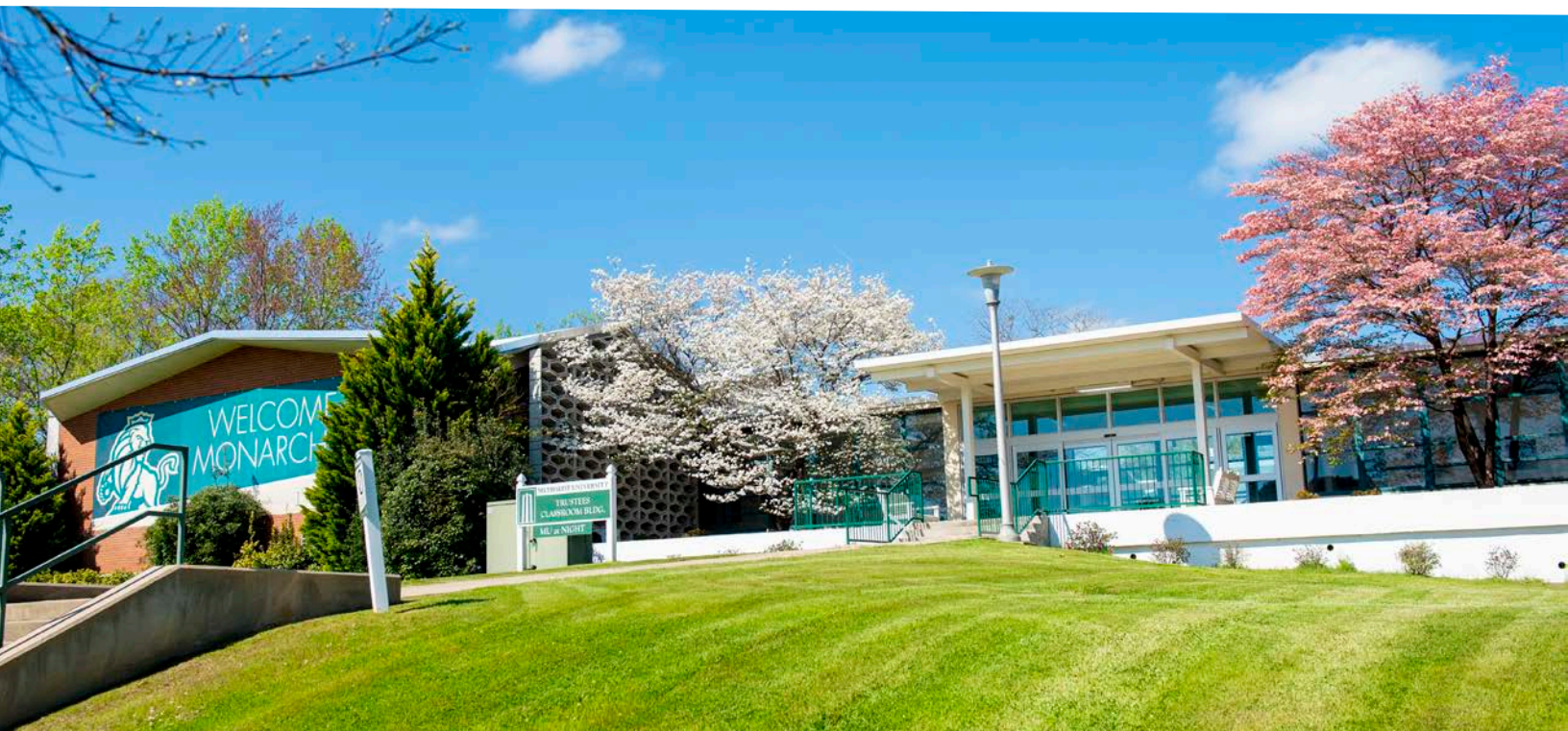
This paper presents the ways that Dong Zhong Shu, Confucian thinker and brilliant statesman, persuaded Emperor Wu of the Han Dynasty to adopt Confucian ideology as the ruling principle, which has been the foundation of the Chinese society for a long time. This result of this study was achieved by analyzing the contents of “Chunqiu Fanlu” written by Dong Zhong Shu.

1:20-1:40 p.m.

#### THE ROLE OF PILGRIMAGE IN THE CREATION OF ISLAM AS A UNIVERSAL RELIGION

**Marie Michelle Ishimwe** | Junior; Computer Science; Kigali, Rwanda  
**Advisor:** Dr. Karen Kletter, History

My paper analyzes the role pilgrimage played in the expansion and development of Islam and its connections to other Abrahamic religions. I will analyze two primary sources describing the pilgrimages of Islamic travelers Ibn Battuta and Al-Umari to demonstrate how religious travel legitimized Islam as an Abrahamic faith with roots in the Holy land. These pilgrim accounts show the travelers' awareness of history and reveal the role pilgrimage played in creating interconnectivity within Afro-Eurasia in a period of the emergence of universalizing religions.



## AFTERNOON SESSION | HENDRICKS 222

### INTERDISCIPLINARY: FOOD AND TRAVEL

1-1:20 p.m.

#### EATING HABITS AND KNOWLEDGE AMONG D-III COLLEGIATE STUDENT-ATHLETES AND COACHES

**Heather Tsapp** | Junior; Chemistry; Jackson, N.J.

**Maddie Hernandez** | Sophomore; Biology; Burlington, N.C.

**Advisor:** Dr. Jamie Robbins, Physical Education and Exercise Science

To date, there is limited information regarding what college athletes and coaches believe and do in terms of nutrition. Existing studies suggest inadequate knowledge on the part of both student-athletes and their coaches, and unhealthy nutritional choices among student-athletes (Botsis & Holden, 2015; Shriver et al., 2013; Torres-McGehee et al.,

2012). Because the focus is generally on National Collegiate Athletic Association (NCAA) Division I (D-I) athletes, the current study aimed to extend knowledge regarding those involved with Division III (D-III) athletic programs along with coaches. Participants from a variety of sports were sent an online survey consisting of 36 questions that aimed to assess overall nutrition knowledge and habits. Seventy-six student-athletes and 12 coaches completed the survey. Results revealed that most participants believe nutrition is very or extremely important, yet only 9% adjust their food intake based on their workout, and only 47% eat at least three meals a day often or very often. Further results will explain the eating habits, choices, and specific areas of nutrition misperceptions among athletes and coaches. Recommendations will be made to help improve knowledge among this population in the future.

1:20-1:40 p.m.

#### THE VALUE OF EDUCATION ABROAD

**Jonathan Wertz** | Senior; Biology; Wake Forest, N.C.

**Tanner Hendricks** | Junior; Social Work; Fayetteville, N.C.

**Ava Broussard** | Sophomore; Counseling/Clinical Psychology; Fayetteville, N.C.

**Anaya Brown** | Sophomore; Biology; Corona, Calif.

**Advisors:** Dr. Mary Kirchner, Accounting; Rebecca King, Writing Center

The opportunity to study abroad presents a plethora of benefits to students looking to broaden their perspective of the greater world. The experiences abroad provide a new outlook to their understanding of living in a new culture. First, they get the chance to immerse themselves into another people group, where they may encounter a foreign language and a different type of dining experience. Beyond these

essential interactions, a student is likely to also come into contact with cultural differences as they explore cultural sites, such as cemeteries and memorials, that give one a better understanding of the religious ideals and values of a certain community. Students will also come to see the economic and social differences in a culture as they walk through towns and villages, some of which may appear as being of a much lower socio-economic status from their own. As they experience these differences, they also have the chance to help improve life for an underprivileged group through service. Living in a new culture abroad provides the chance to experience other essential cultural functions and life changing experiences, as well as the opportunity to make a positive difference in the community. For these reasons, studying abroad makes a huge difference in the college experience and worldviews of the individuals who participate.

1:40-2 p.m.

#### GUATEMALA PRESENTATION ON NON-GOVERNMENTAL ORGANIZATIONS

**Trey Samuelian** | Senior; Hospitality Management and English; Fayetteville, N.C.

**Josie Samuelian** | Junior; Kinesiology; Fayetteville, N.C.

**Jake Patterson** | Senior; Biology; Apex, N.C.

**Daniel Magen** | Senior; Business Administration and Sport Management; Roanoke, N.C.

**Advisors:** Dr. Mary Kirchner, Accounting; Rebecca King, Writing Center

Studying abroad in Guatemala through Methodist University was an opportunity of a lifetime that provided each student on the trip a

chance to immerse themselves into a new culture, while also gaining unique perspectives and values. During their experience, students were able to learn about two Non-Governmental Organizations (NGOs) and their roles in the local community. These NGOs include Jabel Tinamit, a school designed to serve local children that is financially supported by a hotel aimed at tourists and mission groups, and the Atitlan Nature Reserve, an organization dedicated to preserving the environment's natural beauty for future generations. Using the Triple Bottom Line—a model which focuses on an organization's responsibility to people, the planet, and profit—it is possible to analyze these Guatemalan NGOs' holistic impact on their community and use their effectiveness as a model for U.S. organizations.



### AFTERNOON SESSION | NURSING 103 MUSIC: THE INSTRUMENTS OF REVOLUTION

1-1:20 p.m.

#### VIRTUOSIC DULCIAN REPERTOIRE OF EARLY BAROQUE ITALY: COMPOSITION CONNECTIONS

**Zachary Keyes** | Junior; Music Education; Coats, N.C.  
**Advisor:** Dr. Scott Marosek, Music

The topic of this research is the virtuosic dulcian literature that developed in Italy during the Baroque period of Western music. Many of the first examples of virtuosic literature for the dulcian was developed in Italy during the early Baroque period. The history of the instrument, the atmosphere of composition around Venice, and a common collection of virtuosic devices all contributed to the creation of the dulcian's early virtuosic literature in Italy. In order to come to this conclusion, there

was analysis of both historical documents from the era and the pieces of music that were composed for the dulcian by primary composers of the era, including Giovanni Antonio Bertoli, Dario Castello, and Giovanni Battista Fontana. Both a technical and formal analysis of these musical works was conducted, that resulted in establishing connections between these compositions that reflected both the instrument's capabilities and previous use in historical ensembles. These findings lead to a final conclusion that the composers mentioned previously were aware of each other's compositions. When presenting this research, I will be able to showcase examples of these compositions and explain how these composers had a familiarity with both the instrument's strengths and playing difficulties that resulted in their music being ultimately categorized as virtuosic literature for the dulcian.

1:20-1:40 p.m.

#### MUSIC AS AN ACTIVE PARTICIPANT IN THE GLORIOUS REVOLUTION

**Keegan Foyles** | Junior; Music Education; Southern Pines, N.C.  
**Advisor:** Dr. Scott Marosek, Music

The Glorious Revolution of 1688 had neither troops nor guns nor traditional warfare. It was a revolution of the political parties in England. It is one of the defining moments in English history that completed the conversion of the nation into one of Protestant religion rather than Catholic. The Glorious Revolution also cemented parliamentary power and established parliamentary monarchical government system. When

one thinks of revolution, music is not typically the first thing that comes to mind. However, the anti-Catholic narrative was disseminated rapidly due to the populist music that set political lyrics to well-known tunes. These "broadside ballads" spread quickly around towns, in taverns and even courts, ensuring the removal of the Catholic King, James II. This also redefined the separation of classes, as the socioeconomic status that qualified consumers of concert-based music was changing as music began to shift into something the common citizen could listen to, take part in, and enjoy. English music from the Baroque era, specifically between 1685-1690, and the techniques used to create this music illustrate a close relationship between the political, musical, and religious climates.

1:40-2 p.m.

#### DRUMMING FOR FUN: A STUDY OF MILITARY RUDIMENTS IN PUBLIC MUSIC

**Ashlee Dudley** | Senior; Music Performance; Broadway, N.C.  
**Advisor:** Dr. Scott Marosek, Music

Rudimental drumming has a history rooted in military applications. Rudiments have been traditionally used in the military to move units, both domestically and at times of war. This study will examine how John Philip Sousa utilized the rudiments and command cadences on which he wrote a manual in his marches for the public, as well as how this rudimental style differs from the style of drumming seen in orchestras. Rudimental manuals written by several international military band leaders of note in the eighteenth and nineteenth centuries are compared

to Sousa's manual for similarities. After establishing commonalities between the manuals, Sousa's rudiments and command patterns are then compared to drumming patterns in band marches he wrote for public consumption, analyzing how the original commands may have influenced the application in marches based on a mood or feeling being portrayed. This study finds that Sousa intentionally applied his own militaristic commands in public music in order to aid the ensemble with expression, as they would recognize the intent of the drumming patterns, which would reflect to the audience in a comprehensible manner. This interpretation would introduce military drumming patterns to orchestral music, granting professional merit to band ensembles and allowing orchestras to effectively adopt rudimental drumming as a means of musical expression.





## AFTERNOON SESSION | YARBOROUGH AUDITORIUM, CLARK HALL FINANCIAL ECONOMICS: DOMESTIC CONCERNS

1-1:20 p.m.

### MODELING THE DISCOUNT RATE FOR LONG-RUN ENVIRONMENTAL POLICIES

**James R. Horton** | Senior; Financial Economics; Danville, Va.  
**Advisor:** Dr. Robert Gmeiner, Financial Economics

This paper builds on the existing framework of the Ramsey model for discount rates and focuses on the applications of a discount rate to environmental policy. Utilizing the fundamental assumption of continued economic growth, the discounting model is established as a positive value. Considerations for the expanded model begin with examining the separate effects on benefits and costs of discounting.

These effects are evaluated on a time basis and evaluated for externalities that would imply an estimated social cost. A vast amount of research exists on social discount rates as they apply to public and environmental policy. However, there is an apparent gap in the literature that does not thoroughly account for issues of public choice. Most of the literature lacks sufficient consideration for the political implications of abatement or the social costs of a carbon tax in the future. By adding a component of asset specificity to present cost allocation, we hope to improve upon the model by accounting for the marginal utility of consumption at the time the benefit is received. Furthermore, we attempt to mitigate the political implications and moral hazards of carbon abatement by utilizing a scale of risk-aversion within, or associated with, the model.

1:20-1:40 p.m.

### INFLATION BURDEN BY INCOME LEVEL

**Jinho Marques Cabral** | Senior; Financial Economics and Accounting; Dili, Timor-Leste  
**Advisor:** Dr. Robert Gmeiner, Financial Economics

This invisible virus COVID-19 has caused many detrimental effects on human lives as well as devastating impacts on the overall economy in the United States. When it comes to the concept of inflation, nobody likes to experience the effects of rising inflation in a country. The real situation the U.S is facing right now is that inflation is occurring due

to policies in response COVID-19, and this has affected individuals differently. Hence, this study is going to examine exclusively who are the people hurting the most from the increased inflation during this tough period. Is it hurting individuals with a low-income family, middle-income family or high-income family? The authors are going to look at trends by constructing consumer price indexes that are weighted based on what people in demographic income tend to choose. This method will allow one to witness the differences in inflation numbers for different income levels. These consumer price indexes will be a tool to assess whether monetary policy is a good measure.

1:40-2 p.m.

### EFFECT OF CHILDBEARING ON LABOR FORCE PARTICIPATION OF WOMEN DURING COVID-19

**Ana Lovrinovic** | Senior; Financial Economics and Accounting; Bosnia and Herzegovina  
**Advisor:** Dr. Robert Gmeiner, Financial Economics

This paper is an analysis of female labor supply and the effect of having children. Using labor supply data, we can estimate the regression

using income and wage, education, experience, age, and a child dummy variable to estimate whether women with one or more children participate less in labor force. Women are usually the primary caretaker of children at young age, therefore reducing their labor participation, especially in the full-time job market. This suggests lower income and lower experience levels because of the time constraint. The pandemic has forced mothers to leave their jobs to care for children as the schools closed down, leaving an impact on the labor supply that has suffered a devastating effect.

2-2:20 p.m.

### THE CURRENT AND FUTURE STATE OF THE NORTH CAROLINA HOUSING MARKET

**Joshua Lallo** | Senior; Financial Economics and Accounting; Fuquay-Varina, N.C.  
**Advisor:** Dr. Robert Gmeiner, Financial Economics

With people offering and paying excessive sums of money over asking prices, what will be the long-term effects on the Wake County and greater North Carolina housing market? In the past few years, North Carolina and Wake County have had massive population growth. With this, there has been an increase in the demand for houses. There is the problem that more people want to move to Wake County than there are

houses being sold in Wake County. There are plenty of neighborhoods being built in Wake County and right outside of Wake County. This brings up an interesting question. What happens when the demand for housing is satisfied in Wake County or outsourced to other counties? People may or may not be able to sell their houses for the same price or higher than the purchase price. If there is a decrease in the value of homes instead of an increase in Wake County, how will that affect Wake and other surrounding counties? The last thing that needs to happen is a repeat of 2008 financial prices. There may be some level of financial hardship caused in the future if people are not able to pay the higher mortgages, or if people have to sell their houses for less than what they purchased. There may be an answer in forecasting the future of the demand and resulting housing prices in Wake County.

## TEDX | APRIL 6 4 P.M. | YARBOROUGH AUDITORIUM, CLARK HALL

Community Leadership: A New Perspective .....	<b>Dr. Andrew Ziegler</b> Chair, Political Science Department Director, Lura S. Tally Center for Leadership Development
The Unexpected Benefits of Change – Even When it Sucks at First .....	<b>Dr. Mfon Akpan</b> Assistant Professor of Accounting
What Student Drinking Can Teach Us About Influences on Our Own Behavior .....	<b>Dr. Mark Kline</b> Chair, Psychology and Sociology Department
The Gift of Grief: Empowering Companions .....	<b>Dr. Ajita Robinson</b> Grief and Trauma Therapist
Be a Fan, Not a Fanatic: Affecting Change in a Polarized World.....	<b>Dr. Chris Cronin</b> Professor of Political Science

## B.F. STONE LYCEUM | APRIL 7 7 P.M., PA MEDICAL LECTURE HALL

The mission of the B.F. Stone Lyceum is to foster scholarly interaction among faculty, students, staff, and community residents. The endowed lecture series began in 1998 with a generous gift from the estate of B.F. (“Doc”) Stone, a pharmacist from Elizabethtown, N.C. He was a respected and active member of the Methodist Church and a longtime supporter of Methodist University. The Lyceum, which consists of a lecture, two responses, and a question-and-answer period, takes place each spring and is free and open to the public.

**Our Diversity is  
Our Strength:  
Addressing Race  
and Gender in  
Higher Education**

### PAST B.F. STONE LYCEUM PRESENTATION TITLES

“What’s an Ecological  
Society?: A Multi-disciplinary  
Conversation” (2020)

“The Biology of Monogamy” (2019)

“In Defense of the University” (2018)

“Donald Trump’s Fayetteville” (2017)



**DR. CARLA FAGAN**  
*Chair & Assoc. Professor  
Social Work*



**DR. PATRICIA FECHER**  
*Assist. Professor  
Education*



**DR. KYRSTIN KRIST**  
*Assoc. Professor  
Physical Ed. & Exercise Science*



**DR. MICA MITCHELL**  
*Assist. Professor  
Doctor of Physical Therapy*



**DR. KELLY C. WALTER CARNEY**  
*Professor  
English, Lit., Language, & Culture*



**DR. QUINCY MALLOY**  
*Chief Officer  
Diversity, Equity & Inclusion*

## AN UPDATE FROM THE CENTER FOR RESEARCH AND CREATIVITY

**Dr. Cameron Dodworth, Director****Dodworth**

Due to the onset of the COVID-19 pandemic, the Ninth-Annual Methodist University Center for Research and Creativity Symposium ultimately consisted of student projects and materials linked to the Symposium program and stored on the CRC website. While that was unfortunately the extent of the 2020 Symposium, at least some good came out of an otherwise disappointing and unfortunate situation, as now students can link their work to the Symposium program each year, therefore providing them with a permanent place where anyone can access their work and see the cool things that our students do at MU for the annual Symposium.

For last year's 10th Annual Symposium, we had more time to plan, and more options available to us as a result of hybrid teaching, and we were fortunately able to stage a "live" Symposium, though the in-person factor only applied to the presenters, as the "attendees" were only able to see and interact the oral presentations via Zoom. Again, though, the Zoom recordings of those presentations are still available on the CRC website, so hopefully that enhanced availability will help to somewhat make up for the loss of an in-person audience.

Thankfully, for this year's 11th Annual Symposium, we are on track to fully return to the pre-pandemic form of the Symposium, even without required face masks (assuming that state and University guidelines remain the same between the composition of this update and the day of the Symposium). As a result, all of us involved with the CRC hope to see the annual spring Symposium become, once again, the centerpiece of Methodist University's efforts to showcase the wonderful research and creative pursuits that have been achieved by our students. Furthermore, this year's Symposium will mark the first time that the annual B.F. Stone Lyceum will be a part of Symposium Week, as this is likewise the showcase event for the research pursuits of our Methodist University faculty.

The MU CRC would like to sincerely thank everyone that has worked very hard to make this year's Symposium possible, particularly Gabrielle Allison (Marketing Assistant & Graphic Designer), Michael Molter (Webmaster & Canvas Administrator), Brad Johnson (Director, Marketing & Communications), and the rest of the team at University Relations. Once again, please also keep in mind that posters and presentation materials will be made available as links to the Symposium program for all posterity.



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