

THE SEVENTH ANNUAL

UNDERGRADUATE 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.

“One of the highlights of the academic year is the CRC Research Symposium and related activities that involve our undergraduate students, graduate students, and faculty. It places emphasis on scholarly endeavors, and showcases the collaborative work within our University community.”

– Dr. Ben E. Hancock, Jr.
President

“I am pleased that Methodist’s Center for Research and Creativity encourages students and faculty to collaborate on research and creative endeavors. Faculty enjoy mentoring their students, helping students prepare for graduate school and successful careers.”

– Dr. Delmas S. Crisp, Jr.
Provost

SYMPOSIUM WEEK AGENDA | APRIL 9 – 13, 2018

Monday | April 9

11:00 – 11:50 a.m.	Faculty Presentations	Locations vary
6:00 – 8:00 p.m.	The Fifth Annual Graduate Research Symposium	PA Auditorium

Tuesday | April 10

7:00 – 8:30 p.m.	Attic Fire: A Presentation of Creative Work of ENG/WRI 3230 Students	PA Auditorium
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Wednesday | April 11

8:45 a.m. – 3:10 p.m.	The Seventh Annual Undergraduate Symposium	Locations vary
3:30 p.m. – 5:00 p.m.	University Awards Ceremony	Huff Concert Hall

Thursday | April 12

6:00 – 7:30 p.m.	The Writing Center and CRC present “From Campus to Career: A Community Panel Discussion”	PA Auditorium
7:30 p.m.	The Sixth Annual Cape Fear New Music Festival Concert: “Intersections: Popular and Art Music Connections”	Hensdale Chapel

Friday | April 13

11:00 – 11:50 a.m.	Faculty Presentations	Locations vary
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CRC SYMPOSIUM AGENDA | APRIL 11, 2018

Time	Event	Location
9:00 – 11:00 a.m.	Morning Session	See program for locations
11:00 – 11:50 a.m.	Symbols and Stories: An Interfaith Presentation	Hensdale Chapel
Noon – 12:45 p.m.	Lunch	On your own
1:00 – 2:00 p.m.	Special Presentations for the Cape Fear New Musical Festival ◆ Michael Potts: “Darkness Audible: Heavy Metal Versions of Franz Schubert’s Lieder” ◆ Keith Dippre: “Wanted: Rock Band to Moonlight as Chamber Group. Must Smell Like the Desert.” ◆ Iaroslav Borisov: “Music as Always Something Unexpected”	Reeves, Room G5
2:00 – 3:10 p.m.	Afternoon Session	See Program for Locations
2:00 – 3:10 p.m.	Poster Session	Berns Student Center
2:00 – 3:10 a.m.	Panel: Research in the Areas of Sport Science and Wellness	Yarborough Auditorium
3:30 – 5:00 p.m.	University Awards Ceremony	Huff Concert Hall



MORNING SESSION

Science, Honors Program, and Philosophy | Hendricks 122

9:00 – 9:20 a.m.	NASA Mission Cassini-Huygens: An Overview of Saturn's Rings	Kelsey Stonehocker
9:25 – 9:45 a.m.	Linguistic Branches of Nature and the Consequences of Sound	Christopher Miller
9:50 – 10:10 a.m.	Different Understandings of Nature and Their Consequences	Sheryl Brock
10:15 – 10:35 a.m.	Behind Objectivity: Continuity in Conception, Action, and Substance	Shinichi Akaeda

Music | Hendricks 222

9:00 – 10:00 a.m.	Student Panel Comprehensive Musicianship Through Performance: A Holistic Experience in Understanding Music	Micaela Cooper, Jordan Curry, A.J. Macks II, Maurice Edwards, Diamond Foster, Sarah Crews, Ashley Matthews, Rachel Townsend, Faith Bowen
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Leadership | Nursing 103

9:00 – 10:30 a.m.	Student Panel Leadership Communication: A Collaborative Process	Bryana Berry, Nicholas Wilkerson, Caitlin Alfaro (Young), Violet Finnie
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Financial Economics and Business Administration | Yarborough Auditorium

9:00 – 9:20 a.m.	Does Recession Affect the Decision to Marry?	Hyejin Park
9:25 – 9:45 a.m.	The Economic Benefit of Student Volunteers: The Case of Nigeria	Wisdom Uwaifo
9:50 – 10:10 a.m.	Porsche in China: A Case Analysis	Sharon Crelly, Kian O'Donnell, Sienna Fucci
10:15 – 10:35 a.m.	Minimum Wage: Good or Bad?	Safar Adam Kurbansho

Theatre | Huff Concert Hall

10:00 – 10:55 a.m.	Advanced Acting Commedia Project	Michael Kroll, Edgar Thibault, Celeste Tice
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AFTERNOON SESSION

Psychology | Hendricks 122

2:00 – 2:20 p.m.	Optical Perception and Creativity Difference Between Introverts and Extroverts	Oscar Mendez, Micaela Cooper, Joyelle Davis, Doris Mbappe
2:25 – 2:45 p.m.	The Effect of Trauma on Learning in College Students	Marcelino Martinez, Anthony Cassetta, Reagan Holloway, Constance Simmons
2:50 – 3:10 p.m.	Reducing Stigma Toward Persons with Mental Illnesses by Using the Implicit Association Test	Douah Coulibaly, Jemi Patel

Computer Science and Justice Studies | Hendricks 222

2:00 – 2:20 p.m.	Glucosio Monitor: The Diabetes Tracking Application	Elvis Kahric
2:25 – 2:45 p.m.	Mobile Applications' Vulnerabilities and Data Security	Davor Pranjjic
2:50 – 3:10 p.m.	Sex Trafficking and Prostitution: Understanding the Similarities and Differences	Alexandra Proulx

Health Care | Nursing 103

2:00 – 2:20 p.m.	Community Analysis: Sexual Assault on Campus	Katharine Flournoy
2:25 – 2:45 p.m.	A Comparative Study on Health Care in Guatemala and the United States	Faith Bowen, Chelsea Wareham
2:50 – 3:10 p.m.	Attitudes Toward Abortion: An Analysis of Survey Data	Mathew Stoner

Wellness | Yarborough Auditorium

2:00 – 3:10 p.m.	Panel: Research in the Areas of Sport Science and Wellness
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POSTER SESSION | 2:00 – 3:10 P.M.

Posters will be on display beginning at 9:00 a.m. in the Berns Student Center. Students will be available for questions during the afternoon poster session.

Renovation of Hendricks Science Atriums	Joseph Camire, Anthony Orlandi, Nathan Zauner
Willowheart LLC Alternative Service Pistol Cost-Analysis	Sean Provencher, Malik Jenkins, Jaquez Dedeaux, Thembele Shabangu
“Hennything” is Possible Atriums: Old Hendricks Atriums	Robert Evans, Jaquez Dedeaux, Max Baker
Economics of Changing Parking on the Methodist University Campus	Keith Hardie, Tyler Ursuy, Alex Kachler
Nimocks Fitness Center Solutions	Benjamin Johnson, Demontre Wright, Luke Fenlon, Jarvis Reynolds
Cumberland Contradiction	Hamza Boubacar Kassomou, Patrick Gaddy, Khalil Raymond
Rearrangement of Nimocks Fitness Center	Aiden Sherry, Emmanuel Allen, Jacob Lowe
Cost Analysis for Parking Alternative Solutions at Methodist University	Natasha Ng’ambi, Mohammed Mahdi, Busani Mhlanga, Endashaw Tonja
Cumberland Resident Hall Engineering Project	Luke Van der Meulen, Isaiah Florez, Hailey Carlyle, Vergil Stuart
Nimocks Fitness Center	Noah Weaver, Zvi Ferrari, Jared Owens
Bluestar Concentration Study	Lisa Kasamba, Sarah Morello, Kristee Thomas
Food and Beverage Internship at Mirasol, Palm Beach Gardens, Florida	Rachel Carlton
Foundation Assistant for Brad Keselowski’s Checkered Flag Foundation	Alyssa Coffey
Supply Chain Management and Accounting Internship for the Eaton Corporation	Aunna Hinkle
Liquid Colorimetric Analyzer	Francisco Javier Rafful Garfias
Disproportionality in Discipline of African American Students	Kelsey Stonehocker

MORNING SESSION | SCIENCE, HONORS PROGRAM, & PHILOSOPHY | HENDRICKS 122

9:00 – 9:20 a.m.

NASA Mission Cassini-Huygens: An Overview of Saturn's Rings

Kelsey Stonehocker | Junior; General Science; Lorimor, Iowa

Advisor: Dr. John Dembosky

The rings of Saturn have long been researched since Galileo spotted the odd-shaped planet in 1610. Saturn is a gas giant that is located some 900 million miles from the Sun (Dunford, Saturn in Depth, 2009). With this grave distance, Saturn has not been studied in great detail until the launch of the Cassini-Huygens satellite on Oct. 15, 1997 (Dunford, Saturn in Depth, 2009). Although Cassini-Huygens was launched in 1997, the satellite did not arrive at Saturn until 2004 (The Saturn System Through the

Eyes of Cassini, 2017). The mission retired on Sept. 15, 2017 with more information and findings than ever imagined (Dunford, Saturn in Depth, 2009). Even after more than 407 years of pictures and research of the rings, scientists have still not solved all the mysteries that Saturn holds. However, by researching the rings, moons, and satellites that orbit Saturn, scientists are able to answer questions about not only Saturn, but how the planets grew from, and interacted with, the disk of material surrounding the early Sun. Scientists originally thought that the rings of Saturn were quite ancient until further examination. Through the pictures taken by Cassini, scientists may now be able to form a new hypothesis about how all planets that make up our solar system were formed. Much of this new information is being discovered by watching the moons and satellites of Saturn interact with the rings in miraculous ways.

9:25 – 9:45 a.m.

Linguistic Branches of Nature and the Consequences of Sound

Christopher Miller | Senior; Biology; Dunn, N.C.

Advisor: Dr. Richard Walsh

When is it okay to ask if plants can hear? In the presentation, based on my Honors 401 Senior Project, I will pursue this question drawing upon science, language, myth, and politics. This question initiated my Honors 401 project. Such projects seek to integrate a student's Biology major and their Honors Program seminar reading. I designed a reading list including philosophers of science such as Kuhn, Hawking, and Whitehead, as well as recent botanical studies from plant neurobiology pioneers

Stephano Mancuso and Monica Gagliano to explore my initial question. That question led me to reflect on broader concerns, specifically historical changes in the concept of nature and its representation/analysis by science (cf. Foucault). Such changes affect humanity's concept of nature. Illuminating the patterns of thought behind such changes will serve as a reminder that the body of scientific knowledge is far from static, susceptible to external influences, and, perhaps, not as cumulative as commonly perceived. Furthermore, the presentation will address the economic and political tide which not only alters what can be considered as "true" scientific knowledge but also influences the questions, words, and concepts one can express. All these considerations make quite a broad context and cast interesting light upon my question: When is it okay to ask if plants can hear?

9:50 – 10:10 a.m.

Different Understandings of Nature and Their Consequences

Sheryl Brock | Junior; Biology & Environmental and Occupational Management with a concentration in Natural Resources and Regulatory Compliance; Fayetteville, N.C.

Advisor: Dr. Richard Walsh

This presentation represents work I have done in the course of my Honors 4010 Senior Project. That project caps the MUHP by investigating a topic that integrates the Honors Program, core (B.S.), and major (Biology and Environmental and Occupational Management with a concentration in Natural Resources and Regulatory Compliance). My 4010 project interrogates the

biological/ecological claim that oysters need fresh water. While such claims are self-evident or "natural" within biological and ecological studies, they take their compelling force not only from science but also from conceptions of human beings, as well as certain economic and political considerations. My MUHP reading, and new reading that I did for this project, helped me to consider 1) what nature is, 2) what the human relationship is to nature, and 3) some of the political/economic factors impinging on this particular issue within biological/ecological studies. Some authors that have been useful in my research on this topic include Whitehead, Foucault, and Carson. My presentation will review some of my research on these three issues. Broadly stated, the investigation is influenced by perspectives like those espoused by Barth, Foucault, and Said.

**MORNING SESSION | SCIENCE, HONORS PROGRAM, & PHILOSOPHY | HENDRICKS 122
(CONTINUED)****10:15 – 10:35 a.m.****Behind Objectivity: Continuity in Conception, Action, and Substance****Shinichi Akaeda** | Senior; Religion with minors in History & Philosophy; Yokkaichi, Japan

Advisors: Dr. Kevin Hoffman and Dr. Jeremy R. Hustwit

This paper addresses the criticism of objectivity as an arbitrary construct from a structural viewpoint. The first argument is that objectivity stands on the asymmetrical information in any communicative practices, even though objectivity binds the communicators as a norm in many cases. This inquires why a

rule, a protocol, and a norm can be in effect without any reviews in communication. The second argument follows the typology of objectivity sorted with three constructive elements in examination of the historical examples: God, money, and meaning, all of which have been a normative foundation, but these elements are inherently transformative. In the discussion section, for reasoning the limit of objectivity, the paper reviews that both recognition and conveyance of concept, action, and substance are informatively limited but seemingly coherent in a holistic impression. These views, in conclusion, suggest that objectivity is still a relativistic evaluation of one claim, which, aligning with a specific worldview, normalizes the individual communication.

MORNING SESSION | MUSIC | HENDRICKS 222**9:00 – 10:00 a.m.****Student Panel | Comprehensive Musicianship Through Performance: A Holistic Experience in Understanding Music**

St. Peter's Basilica by Micaela Cooper, Jordan Curry, and A.J. Macks II | **Santa Maria Maggiore** by Maurice Edwards, Diamond Foster, and Sarah Crews | **St. Mark's Cathedral** by Ashley Matthews, Rachel Townsend, and Faith Bowen

Micaela Cooper | Junior; Applied Forensic Science & Psychology; Fayetteville, N.C.**Jordan Curry** | Sophomore; Music Performance with a minor in Psychology; Fayetteville, N.C.**A.J. Macks II** | Junior; Vocal Performance; Fayetteville, N.C.**Maurice Edwards** | Senior; Sport Management with a minor in Marketing; Fayetteville, N.C.**Diamond Foster** | Junior; Music Education; Fayetteville, N.C.**Sarah Crews** | Sophomore; Music Education; Hope Mills, N.C.**Ashley Matthews** | Senior; Biology; Erwin, N.C.**Rachel Townsend** | Freshman; Mass Communications with a minor in Music; Fayetteville, N.C.**Faith Bowen** | Senior; Biology; Rosewood, N.C.

Advisor: Dr. Michael Martin

Often, student learning in music ensembles is focused on technical skill development. However, many teachers seek strategies to provide a broader experience involving multiple learning of musics, cognition, and personal meaning. The Comprehensive Musicianship through Performance model helps instruction for ensembles by promoting a holistic form of music learning, allowing students to use creativity, passion, and vision. Within this model, MU students will present their research through designated peer groups. Students are asked to journal their performance experiences with music chosen with respect to a composer who wrote music for that particular cathedral or region. The tour of Italy provides an opportunity to integrate students' research, journaling, and performance of music by composers from Rome, Florence, and Venice to provide a broader context and purpose for that music.

MORNING SESSION | LEADERSHIP | NURSING 103**9:00 – 10:30 a.m.****Student Panel | Leadership Communication: A Collaborative Process**

Journalists & Social Workers Collaborating to Meet Social Needs by Bryanna Berry | **Power of Mass Media to Promote Collaboration to Achieve Society's Goals** by Nicholas Wilkerson | **Leadership Potential of Health Care Personnel to Meet Patients' Health Care Needs** by Caitlin Alfaro (Young) | **Human Resources Working with Leaders to Achieve Organizational Goals** by Violet Finnie

Caitlin Alfaro (Young) | Sophomore; Health Care Administration with a minor in Leadership Studies; Fayetteville, N.C.**Violet Finnie** | Junior; Business Administration with a minor in Human Resources; Lawton, Okla.**Bryanna Berry** | Junior; Mass Communications with a concentration in Journalism and a minor in Social Work, Tacoma, Wash.**Nicholas Wilkerson** | Junior; Mass Communications with a concentration in Radio and a minor in Business Administration; Greensboro, N.C.

Advisor: Dr. Bill Watt

In the spirit of sharing knowledge in our diverse, dynamic, and hyper-connected world, thoughtful collaboration is increasingly required for effective leadership. For the 2018 MU Symposium,

we researched "Leadership Communication: A Collaborative Process." We explore various avenues of how people can effectively lead and benefit from collaboration, not only with team members, but also across cultures, experiences, generations, industries, and more. We are interested in the power, challenges, limits, and potential of working together across boundaries to achieve goals – whether it is business leaders developing socially responsible and economically profitable global supply chains, political leaders navigating long term humanitarian crises across international borders, educational leaders facilitating effective education practices in a constantly evolving technological landscape, or community leaders leveraging a complicated network of public and private institutions and priorities to assure the well-being of their neighbors and their towns.

MORNING SESSION | FINANCIAL ECONOMICS & BUSINESS ADMINISTRATION YARBOROUGH AUDITORIUM

9:00 – 9:20 a.m.

Does Recession Affect the Decision to Marry?

Hyejin Park | Senior; Financial Economics; Seoul, South Korea

Advisor: Dr. Hem C. Basnet

The economic downturn undoubtedly impacts on people's lives in many ways. It takes a toll on people's marriages, among other things. People lose jobs, leading to higher unemployment. Because of joblessness, married couples may have to make a decision whether to have a child, delay it, or end their marriage. In addition, the marriage rates tend to decline during a time

of economic downturn. However, there is a debate over the relationship between a recession and the declining number of marriages, and past researchers offer conflicting results on the link between recession and marriage rates. Thus, it is important to extend our understanding on the relationship between economic recession and people's decisions on getting married. If recessions have a negative effect on the decision of marriage, the government should provide incentives for unmarried couples to marry and have a family. Thus, the purpose of this research paper is to study the impact of an external event such as an economic recession on marriage in South Korea. The main focus is to compare marriage and divorce rates before and after recession periods.

9:25 – 9:45 a.m.

The Economic Benefit of Student Volunteers: The Case of Nigeria

Wisdom Uwaifo | Sophomore; Financial Economics; Agbor, Nigeria

Advisor: Dr. Hem C. Basnet

This research paper examines the economic benefits of local student volunteers in Nigeria. Nigeria has the biggest economy in Africa; however, the majority of its population still lives in poverty due to unemployment and lack of economic opportunities. The objective of this paper is to examine whether students benefit from volunteering. The study argues that they do benefit from volunteering both in the short run as well as in the long run. In the short run, students and the companies where the students volunteer gain from the volunteering service. The students benefit by gaining professionalism through training, increased work experience, potential scholarship to graduates

schools, and connections to big companies for students from remote areas and lower income families who have no means of getting connections to obtain jobs. Likewise, the companies where the students volunteer also gain. They gain a higher number of trained workers, reduction in spending on human resources, increase in company revenues, and discovery of prospective workers. In the long run, the macro economy as a whole will benefit. The economy will experience both an increase in income and employment, which are the two most sought economic outcomes. The increase in employment will lead to an increase in the labor force, which may lead to higher productivity, and increase in GDP. Then, the increase in income will lead to an increase in the standard of living, which will lead to economic development. Therefore, the study intends to provide some of the stylized facts on the effectiveness of student volunteers and their impact on income, employment, and economic growth in Nigeria.

9:50 – 10:10 a.m.

Porsche In China: A Case Analysis

Sharon Crelly | Senior; Accounting & Business Administration; Fayetteville, N.C.

Kian O'Donnell | Senior; Business Administration with a concentration in PGM; Seven Hills, Ohio

Sienna Fucci | Senior; Business Administration with a concentration in PGM and minors in Marketing & Entrepreneurship; Guilford, Conn.

Advisor: Dr. Michael Wayland

Our research is an analysis of Porsche in the Chinese marketplace. We examine the various political, economic, social and technological factors that impact the Chinese automotive industry and how they relate to Porsche. We also analyze the

industry's competitive issues as defined by Michael Porter of Harvard Business School, such as the threat of competitors entering the market, the threat of substitutes for Porsche vehicles, the bargaining power of buyers and suppliers within the industry, and finally the amount of rivalry in the automobile industry in China. Next, we discuss the opportunities and threats impacting Porsche's position in the Chinese market. We present an analysis of the modern Chinese consumer and the development of the Chinese premium and luxury car markets and how this market compares to similar western markets. We discuss the different struggles that Porsche has faced since entering the Chinese market and the potential for future success in the industry. Finally, we analyze all this information to develop an assessment of Porsche's current position in the Chinese market, future challenges, and a potential future strategy for Porsche to succeed in the Chinese market.

MORNING SESSION | FINANCIAL ECONOMICS & BUSINESS ADMINISTRATION YARBOROUGH AUDITORIUM (CONTINUED)

10:15 – 10:35 a.m.

Minimum Wage: Good or Bad?

Safar Adam Kurbansho | Senior; Mathematics & Financial Economics; Dushanbe, Tajikistan

Advisor: Dr. Jie Zhou

This paper studies the effects of the recent minimum wage increase above the federal rate of \$7.25 in West Virginia. It focuses on its fast-food industry, and then compares it to the fast-food industry in Kentucky to derive pure effects of the price floor due to the resemblance of the economic structure

and demographics of these two states. This investigation has demonstrated that the current minimum wage in West Virginia has not led to significant disemployment in the short term since employers decided to compensate for minimum wage costs by increasing prices. Nevertheless, human labor is inelastic only in the short term, which implies an increased potential for structural unemployment in West Virginia. Some cities across the United States are already under the threat of complete automation of the limited-service industry. Hence, the follow-up interviews with the 17 sampled restaurants in West Virginia and Kentucky will be arranged to measure the long-term effects of the minimum wage increase in West Virginia.

MORNING SESSION | THEATRE | HUFF CONCERT HALL

10:00 – 10:55 a.m.

Advanced Acting Commedia Project

Michael Kroll | Freshman; Theatre; Sanford, N.C.
Edgar Thibault | Freshman; Theatre; Ennery, France
Celeste Tice | Freshman; Theatre; Hope Mills, N.C.

Advisor: Dr. Evan Bridenstine

Advanced Acting is a class in acting styles. For this semester, we have chosen an extended emphasis upon Commedia dell'Arte and combined that with translations of animal movement into physical movement. Michael's Victoria takes root in the innamorata and adds inspiration from a cat; Edgar's Mr. Sunshine starts with Harlequin (the French interpretation of Arlecchino) and adds the movement and sound of a sloth; Celeste's Houdini uses Pedrolino as a foundation for the mannerisms of a rabbit. They combine all of this with improvisation within set scenarios.

MONARCH REVIEW

METHODIST UNIVERSITY'S JOURNAL OF UNDERGRADUATE RESEARCH AND CREATIVITY



Cthulhu by Stacy Marie Summers

Submissions accepted

October 1 through January 31
for consideration for publication

Note: Graduating seniors can submit research papers and artwork now for consideration for volume 6 (2019-2020)

- all academic disciplines –
- photographs, paintings, drawings, prints, and 3D works –
- musical performances and compositions –

For details and to see previous volumes, visit
www.methodist.edu/monarch-review

Contact Baylor Hicks at sbhicks@methodist.edu if you have questions.

AFTERNOON SESSION | PSYCHOLOGY | HENDRICKS 122

2:00 – 2:20 p.m.

Optical Perception and Creativity Difference Between Introverts and Extroverts

Oscar Mendez | Senior; Psychology; Raeford, N.C.
Micaela Cooper | Junior; Psychology & Applied Forensic Science; Fayetteville, N.C.
Joyelle Davis | Senior; Psychology; New Haven, Conn.
Doris Mbappe | Senior; Psychology; Douala, Cameroon

Advisor: Dr. Katharine Snyder

The purpose of the present study is to assess the relationship between personality (introversion/extroversion), creativity, and the perception of reversals on the Necker Cube and Schroeder Staircase optical illusions. Prior research has suggested that individuals higher in the trait of introversion may engage in greater levels of analytical thinking, which would enable them to score higher on measures of creativity. Having higher levels of creativity would lead to more resourceful and innovative

adaptations of ambiguous visual stimuli (David, 2014). Participants will take the Keirsey Personality Test, which provides scores for the following aspects of personality: introversion versus extroversion, sensing versus intuition, thinking versus feeling, and judging versus perceiving. This will be followed by a creativity test (Lorink, 2012), whereby subjects will be given a set of lines and curves (ambiguous visual stimuli) to modify into recognizable designs and figures. The number of nameable figures generated will serve as an index of creativity. In conclusion, participants will view both the Necker cube and Schroeder Staircase figures over a series of trials. It is anticipated that participants scoring higher in introversion will generate more recognizable figures on the creativity measure and will exhibit concomitant effects on the Necker Cube and Schroeder Staircase illusions. Future research will discuss how educators and businesses can better utilize the enhanced creative and analytical strength of introverts. Current research on the strengths of introverted leadership will also be addressed.

2:25 – 2:45 p.m.

The Effect of Trauma on Learning in College Students

Marcelino Martinez | Senior; Psychology; New Brunswick, N.J.
Anthony Cassetta | Senior Psychology with a concentration in Clinical Counseling; Fayetteville, N.C.
Reagan Holloway | Senior; Psychology with a concentration in Clinical Counseling and a minor in Forensic Science; Wilmington, N.C.
Constance Simmons | Senior; Psychology with a concentration in Clinical Counseling; Fayetteville, N.C.

Advisor: Dr. Katharine Snyder

The purpose of this study is to explore the effect of trauma on learning in college students. Since trauma and Post-Traumatic Stress Disorder are a major area of interest in the

field of Psychology, there are many benefits to the present study. Considering that Methodist University has a high number of veterans within the student population because of its proximity to Fort Bragg, the present study may be especially useful. This study will evaluate whether affective verbal learning patterns vary among college students with differing levels of self-reported trauma stressors. Participants will learn either a list of affective words (positive or negative) or neutral/original words over a series of five trials (AAVLT; Snyder, Harrison, & Shenal, 1998). Following the verbal learning task, participants will fill out the Impact of Event Scale-Revised trauma inventory (IES-R; Weiss & Marmar, 1997). Based on prior research, it is predicted that the serial position effect for negative list learning will vary for participants reporting higher, moderate, or lower degrees of self-reported trauma. Implications of the present study to neuropsychological assessment and potential educational interventions will be discussed.

2:50 – 3:10 p.m.

Reducing Stigma Toward Persons with Mental Illnesses by Using the Implicit Association Test

Tene-Marquel Brito | Psychology; Senior; Tampa, Fla.
Douah Coulibaly | Psychology; Senior; Tripoli, Libya
Jemi Patel | Psychology; Senior; Chicago, Ill.

Advisor: Dr. Katharine Snyder

Negative stigmas toward mental illness are far more common than once was thought and in part due to the influence of media. One of the best tools to reduce these negative stigmas towards persons with mental illness is education. This study focuses on educational approaches to reduce stigma towards severe mental illnesses, particularly schizophrenia, and is assessed by the Implicit Association Test. The IAT allows researchers to measure unconsciously learned stigma without relying on self-report.

The first goal in this study is to assess whether an educational intervention, with or without a positive successful schizophrenia case presentation, can alter negative beliefs towards persons with schizophrenia. The subjects in the study will be administered one of three conditions: A visual anti-stigma PowerPoint lecture presentation, an anti-stigma PowerPoint with a video clip of a successful schizophrenia patient, and a neutral control presentation. After the presentation, subjects will complete the IAT, and researchers will collect the scores and administer four additional surveys to reduce confounding variables. It is hypothesized that the subjects in the anti-stigma with video presentation will exhibit less bias on the IAT due to the personal connection. Results will be discussed on the importance of getting accurate information to the public as well as exposure to individuals with mental illness who are productive members of society.

AFTERNOON SESSION | COMPUTER SCIENCE & JUSTICE STUDIES | HENDRICKS 222**2:00 – 2:20 p.m.****Glucosio Monitor: The Diabetes Tracking Application****Elvis Kahric** | Junior; Computer Science & Mathematics; Bosnia and Herzegovina

Advisor: Dr. Terry House

Diabetes is one of the most common health issues that affects different age groups around the world. This research is focused on Type 1 Diabetes or Mellitus Type 1. In certain cases, this type of diabetes is known as an insulin-dependent diabetes. This type of diabetes is considered to have the most effect on people's lives as it pertains to tracking their carbohydrates, insulin dosages, fitness levels, and many other factors that affect our quality of life. In recent years, there have been many diabetes-related software products to monitor diabetic patients; however, the applications did not contain a wide range of options. The main

goal of previous applications was to collect data in order to better understand the disease, instead of analyzing the patient's information and predicting future decisions to help improve the patient's quality of life. Therefore, the main objectives of this project will be to create an application to collect the data from the user, process the data, and then provide the patient and his care providers with critical information about the current state of the patient's health. Such data will provide life-saving information by evaluating their blood-sugar ratings and alarming them when their health is in a critical state and may need medical attention. The prototype of this application will be designed in the Java Programming Language with a Mongo DB database for collecting and storing data. After the successful prototype, the Android application will be created in order to be available for everyone with Type 1 Diabetes. Furthermore, the data analysis and processing will be tested before the release of application.

2:25 – 2:45 p.m.**Mobile Applications' Vulnerabilities and Data Security****Davor Pranjić** | Junior; Computer Science; Mostar, Bosnia and Herzegovina

Advisor: Dr. Terry House

Cybersecurity and privacy are very sensitive topics that attract more and more attention. Installing the latest updates will provide temporary protection, but what remains vulnerable are the underlying layers on which the system application is based and that some developers ignore. The reason that some developers do not work on such flaws is the software development

costs, or simply lack of interest in exploring the architecture on which the software will be installed. The consequences of not having security-based applications is a loss of data and leaking of private information. Using third-party libraries in specific software will speed up the developing process and reduce costs, but it can significantly impede security if a particular library is poorly written or contains a back-door to enter the application. Based upon the aforementioned discussion, the use of encryption to protect data does not guarantee data security, which is the point of this research. Through this research, I will demonstrate the risk of the most common vulnerabilities that are present in mobile applications and solutions on how to protect against such vulnerabilities.

2:50 – 3:10 p.m.**Sex Trafficking and Prostitution: Understanding the Similarities and Differences****Alexandra Proulx** | Senior; Justice Studies & Digital Forensics and Cybersecurity with a minor in Leadership Studies; Vale, N.C.

Advisor: Dr. Eric See

The purpose of this study is to address the issue of educating the United States public to recognize the signs to differentiate a crime of slavery from a crime of control. The basis of this study was a quantitative design in order to interview participants selected through a purposive sampling of higher education instructors and doctors. The survey that the participants answered was

primarily based on open-ended questions. It was found upon the conclusion of the research that 100% of the participants received their information on the crimes of sex trafficking and prostitution through the news media. However, out of the participants, only 20% knew and understood, in detail, the difference between the crime of sex trafficking and the crime of prostitution. Some implications of this study include the need to increase the number of participants involved as well as balancing the survey to show equal amounts of open-ended questions and multiple-choice or range-based questions. To further this research, a study should be done on what information is released and what the validity of said information is when compared to published scholarly works.

AFTERNOON SESSION | HEALTH CARE | NURSING 103

2:00 – 2:20 p.m.

Community Analysis: Sexual Assault on Campus

Katharine Flournoy | Senior; Nursing & Health Care Administration; Port Republic, N.J.

Advisor: Professor Jennifer Hanley

Currently, sexual assault is a widely discussed, but grossly underreported, topic on college campuses. National statistics claim that one in five college women will be a victim of sexual assault. Individuals struggle to clearly define sexual assault and differentiate between sexual assault and misconduct. Colleges and universities are struggling to get an accurate report on the true occurrence of sexual assault on campus. To further investigate this area, a survey was developed and administered randomly on campus to 50 college women between the ages of 18 and 24.

Results will be compared to national statistics on the number of sexual assaults on college campuses annually and the reported number of reported sexual assaults at Methodist University. In my community analysis and literature review, I propose primary, secondary and tertiary interventions that Methodist University can implement to help decrease these statistics. Additionally, there are many needs of the individuals who experience sexual assault that the University can address, such as short and long-term social and psychological impacts on the victim. Furthermore, the University fails to obtain accurate reports on the prevalence of sexual assault because of the negative stigma associated with the event and victim-shaming wording frequently used on surveys. With this survey and literature review, Methodist University can work towards reducing the prevalence of sexual assault on campus to below the national average.

2:25 – 2:45 p.m.

A Comparative Study on Health Care in Guatemala and the United States

Faith Bowen | Senior; Biology; Rosewood, N.C.
Chelsea Wareham | Senior; Health Care Administration; Apex, N.C.

Advisor: Dr. Mary Kirchner

Our research project addressed the state of health care in Guatemala in comparison to health care in the United States. Our methodology consisted of hands-on medical experience in a clinic in Guatemala and research on health care in the United States. We researched the leading causes of death, life expectancy, common diseases, primary care, immunizations, women's

health, and the general health care systems of Guatemala in comparison to the United States. We found that in general health care is sparse in Guatemala with lack of a nationally standard healthcare infrastructure. Surprisingly we found that Guatemala's immunization rate is significantly higher than immunization rates in the United States, while Guatemala lags behind the United States in the other categories we researched. We also included our interview with Dr. Pena (a doctor in a private NGO clinic in Guatemala) concerning his experience with health care and the health care system of Guatemala. Our research is meant to educate others on the difference between health care in developed and developing nations. The research of this study is also to demonstrate ways in which NGO's can continue to improve health care in Guatemala and around the globe.

2:50 – 3:10 p.m.

Attitudes Toward Abortion: An Analysis of Survey Data

Mathew Stoner | Senior; Political Science; Ellijay, Ga.

Advisor: Dr. Andrew Ziegler

This study employed a quantitative analysis of survey data to examine the influences on public opinion toward abortion. The major findings were that political factors, such as a political party identification and political ideology, as well as religious factors, such as an individual's belief in Biblical inerrancy and denomination, were more influential than demographic factors. Religious influences had the greatest effect on support for, as well as opposition to, abortion. Atheists had the greatest overall level of support for abortion, while the greatest opposition to abortion was mounted by individuals who believe the Bible to be the actual word of God and to be interpreted literally. Political ideology also

significantly impacted individuals' support for abortion. Liberals had the second-highest level of overall support for abortion, and conservatives had the second-highest overall opposition to abortion. Demographic factors had the weakest relationship to individual support for abortion.

From this research, government officials can gauge the public's opinions on matters relating to abortion, which in turn can help shape America's domestic policy agenda based on public attitudes, rather than on individual legislators' agendas within government. Political candidates running for public office can use the data presented in this research to focus on issues, that are important to a particular group of people in order to gain supporters, making these findings beneficial for any political candidate, party, or researcher. By means of empirical data, a quantitative analysis of the presented variables leads to comprehensive conclusions regarding attitudes toward abortion.

AFTERNOON SESSION | WELLNESS | YARBOROUGH AUDITORIUM

2:00 – 3:10 p.m.

Panel | Research in the Areas of Sport Science and Wellness

The Institute of Sports Science and Wellness aims to promote research in the areas of sports science and wellness on campus. We want to encourage collaborations between departments and between students and faculty. As such, we have invited a panel of students and faculty currently engaged in research

in the areas of physical and emotional wellness and sport performance to discuss their studies. The topics include stress and undergraduate students, self-determination theory and coaching, strength and power training on a golf swing, and reading retention and exercise.

POSTER SESSION | 2:00-3:10 P.M. | BERN'S STUDENT CENTER

Posters will be on display beginning at 9:00 a.m. in the Berns Student Center. Students will be available for questions during the afternoon poster session.

Renovation of Hendricks Science Atriums

Joseph Camire | Freshman; Engineering with a concentration in Industrial Engineering; Richmond Hill, Ga.

Anthony Orlandi | Junior; Engineering with a concentration in Industrial Engineering; Fayetteville, N.C.

Nathan Zauner | Freshman; Engineering with a concentration in Industrial Engineering; Salisbury, N.C.

Advisor: Dr. Denise Bauer

The Hendricks atriums are currently in a state of disuse and they are unattractive to those who view them. Based on the décor within each atrium, it seems they were once meant to be used as a study area. Our team feels it would be best to restore the atriums' aesthetic value in order promote a peaceful atmosphere that encourages students to utilize them. To accomplish this, our team

will first research what the limits are when it comes to altering the atriums. We will speak to those interested in the atriums' conditions to establish the main concerns and possible feasible solutions. Some preliminary ideas our team is considering are incorporating lighting within the atriums so that they can be better viewed at night, cleaning the atriums, pruning plants and trees, and also covering up the A/C units present. Replacement or refurbishing of seating and other outdoor furniture will modernize the atriums and eliminate the outdated appearance. Adding year-long, colorful plants will brighten up the atriums and give them a refreshing feel. By utilizing the engineering design process, we will explore these ideas and more before determining the most feasible change(s). The overall goal of our team is to rejuvenate the atriums and make them more appealing to students and faculty to use as they were once intended.

Willowheart LLC Alternative Service Pistol Cost-Analysis

Sean Provencher | Junior; Engineering with a concentration in Industrial Engineering; Fayetteville, N.C.

Malik Jenkins | Freshman; Engineering with a concentration in Industrial Engineering; New Bern, N.C.

Jaquez Dedeaux | Sophomore; Engineering with a concentration in Industrial Engineering; Fayetteville, N.C.

Thembela Shabangu | Sophomore; Engineering with a concentration in Industrial Engineering; Manzini, Swaziland

Advisor: Dr. Denise H. Bauer

The Willowheart LLC security firm is interested in seeking a replacement to its current service pistol, the Taurus PT92. Engineering economy principles of alternative cost-analysis will be applied to Option A, adopting the Smith & Wesson MMP M2.0 15-round; Option B, adopting the Glock 19; and Option C, remaining with the Taurus PT92. Factors that will

be considered beyond initial cost of the weapon itself include, but are not limited to, the cost of extra magazines and new holsters, anticipated maintenance costs, availability of parts and maintenance support, weapon life cycle, and cost of training to familiarize employees. A more abstract ranking approach will have to be taken for considering the likelihood of lawsuit due to inaccuracy or malfunction if the weapon must ever be deployed. Factors that cannot be ignored when establishing this likelihood include, but are not limited to, ergonomics, complexity (of operation), controllability (not only related to size, but also to trigger system), what we will refer to as “shoot-ability” (which will consist of various recoil and trigger related variables), and reliability/dependability. For all criteria that do not have a directly associated cost, tradeoff decision factors ranking best, median, and worst will be utilized to assess the three models of 9mm service pistol in relation to one another. When considering hard cost-data, current vendor sales, rebates, and swap deals will be factored into the favorability of the purchase as savings.

POSTER SESSION | 2:00-3:10 P.M. | BERN'S STUDENT CENTER (CONTINUED)

"Hennything" is Possible Atriums: Old Hendricks Atriums

Robert Evans | Freshman; Engineering with a concentration in Industrial Engineering; Hopkins, S.C.
Jaquez Dedeaux | Sophomore; Engineering with a concentration in Industrial Engineering; Fayetteville, N.C.
Max Baker | Sophomore; Engineering with a concentration in Industrial Engineering; Oviedo, Fla.

Advisor: Dr. Denise H. Bauer

An issue has arisen dealing with the atriums in the Hendricks Science Complex involving the living area of the turtles and the open space. Many people have stated that the atriums feel

uninviting, looks unappealing to the eye, and the turtles are living in poorly managed quarters. We will attempt to design a cleaner, better and more efficient living area for the turtles while making both areas more appealing and inviting. The cleaning and upkeep could make Hendricks into another social gathering space that would bring some educational value. New species of plants could be kept and more organisms could be found to coexist with the turtles. The Atriums could be used to show diversity and showcase some of the core values that Methodist University stands for. We will consult with the Department of Biology and students, faculty, and staff who use Hendricks Science to determine customer needs and help define our design alternatives. From there, we will continue through the engineering design process to select the best alternative that is best for the MU community including the turtles.



Economics of Changing Parking on the Methodist University Campus

Keith Hardie | Junior; Engineering with a concentration in Industrial Engineering; Oxford, N.C.
Tyler Ursuy | Senior; Mathematics; Miami, Fla.
Alex Kachler | Sophomore; Engineering with a concentration in Industrial Engineering; Tampa, Fla.

Advisor: Dr. Denise H. Bauer

After confirming that parking is a major issue plaguing the Methodist University Campus, we now plan to examine the costs of different potential solutions. We will be confirming rates from

construction companies, considering interest rates and the value of money over time, cost of eliminating or creating retention ponds, and potential additional costs of improving the drainage system. We have already generated potential solutions, designing locations for new parking lots and the number of spaces that could potentially fit in the new lots. Another potential solution we generated was implementing a shuttle system, where we would consider the costs of gas, initial purchase, salary for the driver(s), and maintenance for the vehicles. We will also examine the costs of altering the color-coded lot system (adding new signage) and also what costs will come if we were not to change anything. This will all be done while considering the changes that will be made during the 10-Year Plan.



Nimocks Fitness Center Solutions

Benjamin Johnson | Freshman; Engineering with a concentration in Industrial Engineering; Cary, N.C.
Demontre Wright | Freshman; Engineering with a concentration in Industrial Engineering; Andrews, S.C.
Luke Fenlon | Freshman; Engineering with a concentration in Industrial Engineering; Durham, N.C.
Jarvis Reynolds | Freshman; Engineering with a concentration in Industrial Engineering; Greenville, S.C.

Advisor: Dr. Denise H. Bauer

An area on the Methodist University campus that needs attention is the setup of Nimocks Fitness Center. At the request of Nimocks Center staff, we will examine various issues related to equipment placement to make Nimocks more enjoyable and efficient for users and staff. We will survey members of the community, talk to students and faculty that frequent the facility, and recall our own personal experiences. One area of particular interest to us is the water fountain placement in Nimocks Fitness Center; we would like to figure out a more efficient placement. We are implementing the engineering design process to gather data, develop ideas, and select the best alternative(s). We will be selecting our final ideas based on the following criteria: ideas that will be most efficient, how much each idea would cost, the level of inconvenience for the students, and how long it would take to implement each idea.

POSTER SESSION | 2:00-3:10 P.M. | BERN'S STUDENT CENTER (CONTINUED)**Cumberland Contradiction**

Hamza Boubacar Kassomou | Freshman; Engineering with a concentration in Industrial Engineering; Niamey, Niger
Patrick Gaddy | Freshman; Engineering with a concentration in Industrial Engineering; Fayetteville, N.C.
Khalil Raymond | Freshman; Engineering with a concentration in Industrial Engineering; Inglewood, Calif.

Advisor: Dr. Denise H. Bauer

A major issue on the Methodist University campus that has been complained about by residential students is the lack of decoration in the freshman residence hall lobbies. Our team of prospective engineers decided on two locations that appear to have the most

severe decoration concerns: Cumberland Hall and Sanford Hall. From personal experience and the opinions of some of the residential students, the halls, while meeting some basic social needs, lacks in any decoration to really make the lobbies feel more inviting. In addition, the lobbies don't have much in terms of entertainment for the students. Our main focus will be on adding decorations to the lobby areas such as posters or plants. We will also look at the present arrangement of furniture and other items to suggest possible changes. We will gather ideas from the various residential students and then form an improvement plan based on the wants and needs of the students, cost of the ideas, allowed space, and how long would it take to implement these ideas.

**Rearrangement of Nimocks Fitness Center**

Aiden Sherry | Freshman; Engineering with a concentration in Industrial Engineering; Fairfax, Va.
Emmanuel Allen | Freshman; Engineering with a concentration in Industrial Engineering; Springfield, Va.
Jacob Lowe | Freshman; Engineering with a concentration in Industrial Engineering; Angier, N.C.

Advisor: Dr. Denise H. Bauer

A reoccurring problem addressed by those who access Nimocks Fitness Center is the poor arrangement of the gym's equipment. Our team of engineering students has decided to focus on four key areas: the configuration on workout equipment, access and visibility of special equipment such as water fountains, cleaning stations, etc., ease of movement from one piece of

equipment to the next, and free flow of traffic in and out of the fitness center. We selected these four criteria based upon the suggestions of those involved directly with Nimocks and believe these components are the crucial pieces of the puzzle to creating a more efficient and pleasurable workout experience. Our preliminary ideas include incorporating the left-hand side of Nimocks (those who go to the gym now will notice that only the right side of the building is used for workout equipment), adding an additional section to the gym, and allowing for much better access in and out of the fitness center. In addition to these propositions, we believe that it is fully possible to configure the existing space of Nimocks into a more efficient gym area. We will judge these possible solutions by the following standards: cost of solution, inconvenience to students for the period of time required to implement the solution, and the time table of each possible solution.

**Cost Analysis for Parking Alternative Solutions at Methodist University**

Natasha Ng'ambi | Sophomore; Engineering with a concentration in Industrial Engineering; Lusaka, Zambia
Mohammed Mahdi | Sophomore; Engineering with a concentration in Industrial Engineering; Baghdad, Iraq
Busani Mhlanga | Sophomore; Engineering with a concentration in Industrial Engineering; Mbabane, Swaziland
Endashaw Tonja | Sophomore; Engineering with a concentration in Industrial Engineering; Addis Ababa, Ethiopia

Advisor: Dr. Denise H. Bauer

This project is a continuation of a previous project addressing the parking concerns on Methodist University campus. Our team came up with several ideas to improve the parking systems; the suggested solutions include constructing a parking garage, constructing parking lots within and around the perimeter of Methodist University campus where space is available, implementing a shuttle system, extending the current parking lots, and finally, creating biking paths and parking to implement a biking system. This year, we are in the process of providing an in-depth cost analysis of each of the suggested solutions with the use of engineering economy and materials engineering to evaluate the alternatives. This project is to help the university and students have a better understanding of the costs of improving parking on campus. Additionally, it could help the university make a better decision about how and when to implement any solution.

POSTER SESSION | 2:00-3:10 P.M. | BERN'S STUDENT CENTER (CONTINUED)

Cumberland Resident Hall Engineering Project

Luke Van der Meulen | Freshman; Engineering with a concentration in Industrial Engineering; Keymar, Md.

Isaiah Florez | Freshman; Engineering with a concentration in Industrial Engineering; Cameron, N.C.

Hailey Carlyle | Freshman; Engineering with a concentration in Industrial Engineering; Leland, N.C.

Vergil Stuart | Freshman; Engineering with a concentration in Industrial Engineering; Jacksonville, Fla.

Advisor: Dr. Denise H. Bauer

A major complication in the Methodist University community is the welcome feeling of residence halls as you walk into the

lobby. The lobby appearance is a widely common complaint and is becoming a bigger issue to residents of Cumberland. We asked why residents do not like to socialize and hang out in their own lobby and why they feel that it is a better option to go to other residence halls. The current layout of the lobby seems to be the concern from the general oral survey we conducted. Our team of prospective engineers has determined that many students do not have a desire to use their free time in their own living quarters because of the lack of appeal the environment presents. The lobby, with the design it has now, is cramped, unappealing and not creative as other resident halls such as Sanford and Garber. With our help, we plan to make Cumberland the appealing and go-to place for students, along with making the lobby more appealing for its own residents.



Nimocks Fitness Center

Noah Weaver | Freshman; Engineering with a concentration in Industrial Engineering; Greensboro, N.C.

Zvi Ferrari | Freshman; Engineering with a concentration in Industrial Engineering; Silver Spring, Md.

Jared Owens | Freshman; Engineering with a concentration in Industrial Engineering; Winston-Salem, N.C.

Advisor: Dr. Denise H. Bauer

An issue on the Methodist University campus that has recently become a concern is the layout of the Nimocks Fitness Center. Nimocks staff as well as users of the center wishes to see the

layout become more user friendly. Our team of prospective engineers decided that we needed to look at the current layout and ask students, faculty, and staff who use or work in the facility what they would like to see. We decided that the main locations that need to be addressed are the lobby, the free weight area, and the cardio area. We first need to determine which machines cannot be moved or changed so that we can work around those. Next, we will ask people coming in and out of Nimocks their opinions of what they would like to change. We will also take into consideration the ideas of the center staff and what they feel would better suit the layout of the building. Finally, we will take everything into consideration and determine what would work best for the MU community as well as the space available.



Bluestar Concentration Study

Lisa Kasamba | Junior; Applied Forensic Science & Justice Studies; Mbabane, Swaziland

Sarah Morello | Sophomore; Applied Forensic Science & Digital Forensics and Cybersecurity; Raeford, N.C.

Kristee Thomas | Alumna; Chemistry with a concentration in Forensic Science; Fayetteville, N.C.

Advisor: Professor Mark Vecellio

Bluestar is a chemical reagent commonly used by criminal investigators to search for latent bloodstains because of its ability to produce luminescence upon contact with hemoglobin in blood. The aim of this study was to investigate whether using a higher concentration of Bluestar may be beneficial to practitioners by reducing the possibility of blood becoming diluted as a result of Bluestar application. Less dilution of the blood allows a better chance at recovery of DNA.

In our study, 50 μ L of human blood was deposited on 10 black colored, cotton fabric samples and on 10 black colored tiles. All samples were allowed to air dry for one week. The tiles were then rinsed with water and scrubbed with a clean paper towel to simulate a suspect cleaning a crime scene. Five tiles and five fabric samples were treated with a standard concentration of Bluestar (two tablets mixed with four ounces of water), while the remaining five samples of each were treated with a double concentration Bluestar mixture. The onset time of luminescence between single and double concentration mixtures was not statistically significant. However, the duration of luminescence was significantly longer for the double concentration Bluestar for both the fabric and tile samples. These findings show that the use of double concentration Bluestar may be beneficial to practitioners since less solution may be required, thus reducing the possibility of blood dilution, which is important in the field of forensic science.

POSTER SESSION | 2:00-3:10 P.M. | BERN'S STUDENT CENTER (CONTINUED)**Food and Beverage Internship at Mirasol, Palm Beach Gardens, Fla.**

Rachel Carlton | Senior; Business Administration with a concentration in Resort, Club and Hospitality Management; Mount Olive, N.C.

Advisor: Professor Lauren Zimmer

During the summer of 2017, I had the opportunity to intern at The Country Club at Mirasol in Palm Beach Gardens, Fla. The intent of this internship was to gain practical experience within the country club industry, identify correlations between my academic experiences and my internship, in addition to developing a familiarity with different forms of business

communication. I had the opportunity to rotate through several different roles within the organization. I was able to serve as a Grille Room Server, Main Dining Server, Formal Dining (Solstice) Cocktail Server and Revive FOH. I was able to build on my food and beverage skills as applied to the club industry and step outside my comfort zone in order to develop confidence in my duties. I would urge future interns to research their potential internship site and to make sure the experience offered will meet your learning objectives, and that the internship site is in a region where you will be happy to work. I had an outstanding experience at the Country Club at Mirasol, and it definitely won a place in my heart. I learned a great many lessons; the greatest of all being the confidence in learning that I definitely want to work in the country club sector.

**Foundation Assistant for Brad Keselowski's Checkered Flag Foundation**

Alyssa Coffey | Junior; Sport Management with a minor in Resort, Club and Hospitality Management; Concord, N.C.

Advisor: Professor Lauren Zimmer

I love NASCAR and had the amazing opportunity to complete and internship with Brad Keselowski's Checkered Flag Foundation in order to learn more about event planning and public relations as it applies to the sport management industry. This experience challenged me to communicate with outside

entities and fundraise for wounded veterans and first responders during their road to recovery. I had the opportunity to interact with a unique fan base and lobby sponsors for their support. I regularly communicated on behalf of the general manager with the race team to ensure they were present for public relations activities. I also conducted event planning and coordination for the Checkered Flag Foundation. My supervisor challenged me to work with fundraising teams in different states and bring them together to meet common goals. These teams converged in Michigan for a charity event where I learned the importance of maintaining an open mind under pressure, to adapt, and always be willing to ask questions to ensure the successful completion of organizational objectives.

**Supply Chain Management and Accounting Internship for the Eaton Corporation**

Aunna Hinkle | Senior; Accounting with a minor in Business Administration; Miamisburg, Ohio

Advisor: Professor Lauren Zimmer

As an intern at Eaton Corporation, my goals were to develop skills in the area of logistics management and learn how the accounting department and logistics interact within the company. My responsibilities consisted of emailing, software engineering, pulling parts, scrubbing, catching obsolete and high risk parts (C-Trends), training other employees, working on projects and working with the accounting department. I went to meetings

to discuss results of projects completed, and to understand what that meant for the company and reached out to vendors to discuss any issues the company was having with late parts or parts on shortage. I learned the importance of speaking up and asking questions, and I learned how different the classroom experience is from real life. I was challenged to expand beyond my comfort zone. I hated calling people, and as soon as I made my supervisor aware of this, he immediately made me in charge of contacting vendors. As a result, I was able to overcome my fear, and now I can answer the phone as if it was a friend on the other end. I absolutely loved my internship, and I really enjoy what they have me doing now as a job. My one three-month internship turned into an experience that has prepared me for my future in accounting.

POSTER SESSION | 2:00-3:10 P.M. | BERN'S STUDENT CENTER (CONTINUED)

Liquid Colorimetric Analyzer

Francisco Javier Rafful Garfias | Sophomore; Computer Science;
Mexico City, Mexico

Advisor: Dr. O. Z. Hamzah

In the hospitality business, a firm's quality is defined by its consistent delivery of individual standards. The standards must be measurable in order to be effectively managed. Our project is based on a cooperative effort between two on-campus disciplines (computer science and resort management) to resolve issues encountered in the color quality quantification of nonalcoholic beverages such as tea or coffee. Our work resulted in the construction of Arduino-based color spectrometer measuring

the degree to which red, green and blue light is absorbed by a sample beverage. The color spectrometer readings are displayed on a LCD 4-line display panel indicating the ratio of the incident beam and the degree to which the beam is absorbed at three wavelengths. The data will be used to research the degree of color absorption as a function of beverage freshness. This resulting data may useful is creating a measurable color marker which could be used for quality control and product waste curtailment. The software allows for custom programming of the color spectrometer features without the need for elaborated hardware modification. The hardware was designed by the MU Resort, Club and Hospitality Program specifically for this interdepartmental project.



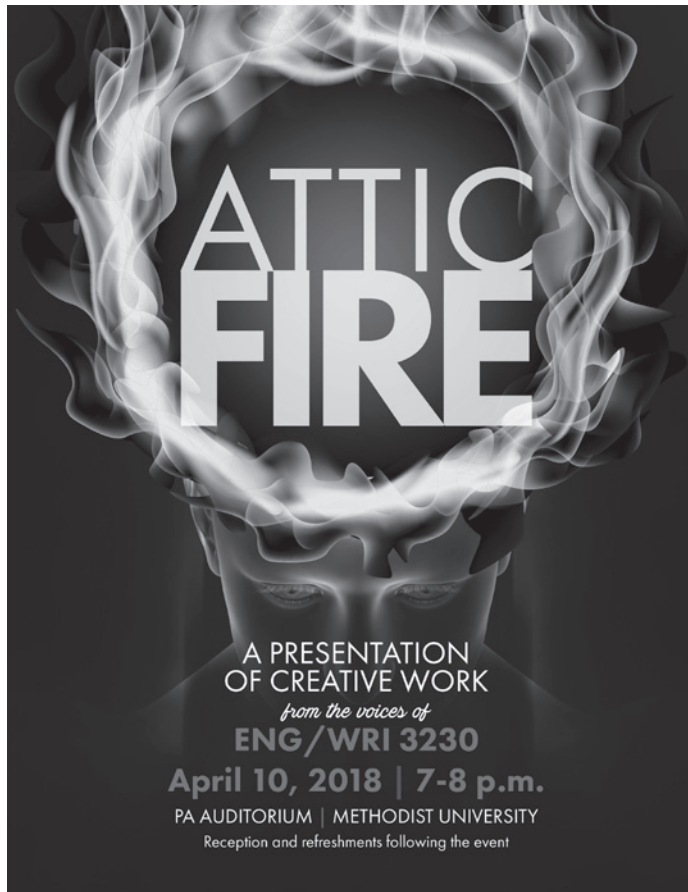
Disproportionality in Discipline of African-American Students

Kelsey Stonehocker | Junior; General Science; Lorimor, Iowa

Advisor: Dr. Jennifer Broome

One of the more enduring issues in American education is that of discriminatory discipline among K-12 students. Specifically at issue is racially disproportionate discipline, defined as consistently enforcing discipline more frequently and/or of more severity amongst students who do not identify as white. To fully

understand the implications, this study conducts a historical analysis of ways African Americans are depicted as criminals; this analysis is used to explain the implementation of punitive discipline systems that are more commonly enforced amongst schools with higher populations of African-American students. To combat this intolerance, this research suggests restorative discipline and culturally responsive pedagogy be utilized by the entire school system and the community to ensure African-American students equal educational opportunity instead of the "school-to-prison pipeline."



ATTIC FIRE

A PRESENTATION OF CREATIVE
WORK OF ENG/WRI 3230 STUDENTS

Tuesday, April 10, 2018 | 7:30 p.m.

PA Auditorium



Presentations

"Breaking the Ice"

by Victoria Banks, Newport, N.C.

"Fishing with Ghosts"

by Charles Canady, Fayetteville, N.C.

"Apeirophobia"

by Christopher Gogo, Boston, Mass.

"Insert Cooking-Related Title Here"

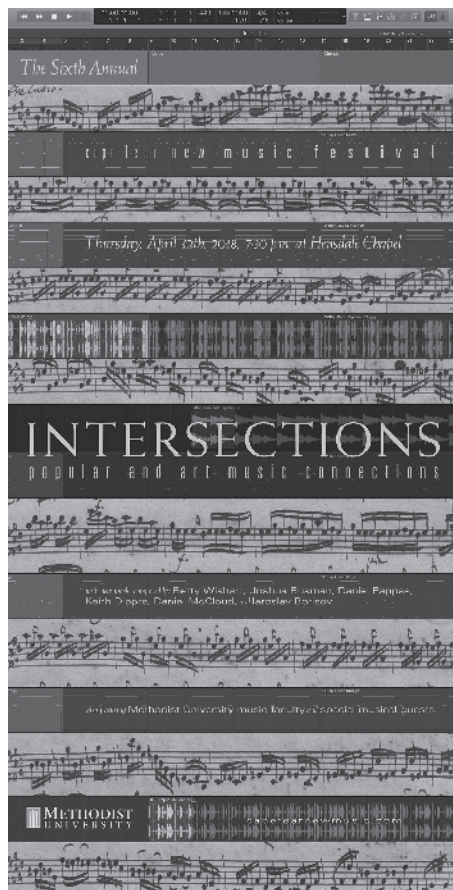
by Darien Jones, Hope Mills, N.C.

"Flower" and "Dear Lily"

by Suzanne Klang, Springfield, Mass.

"Mom versus No Shoulders"

by John Williams, Palm Bay, Fla.



THE SIXTH ANNUAL CAPE FEAR NEW MUSIC FESTIVAL CONCERT

"Intersections: Popular and Art Music Connections"

Thursday, April 12, 2018 | 7:30 p.m.

Hensdale Chapel



Special Presentations

April 11 | 1:00 - 2:00 p.m. | Reeves G5

- ◆ Michael Potts: "Darkness Audible: Heavy Metal Versions of Franz Schubert's Lieder"
- ◆ Keith Dippre: "Wanted: Rock Band to Moonlight as Chamber Group. Must Smell Like the Desert."
- ◆ Iaroslav Borisov: "Music as Always Something Unexpected"



AN UPDATE ON THE CENTER FOR RESEARCH AND CREATIVITY

Dr. Clay Britton, Director

The 2017-2018 academic year has been an exciting one for the CRC. The students, faculty, and staff of the University have embraced the mission of the center, and have truly taken advantage of all of the opportunities the center provides. A couple of highlights from this year include:

- ♦ Currently, students have been awarded nearly \$6,000 to assist them in their travel to conferences, or to purchase supplies and equipment for their projects.
- ♦ Volume IV of the Monarch Review: Methodist University's Journal of Undergraduate Research and Creativity was released. The submission period for Volume V has just closed, and should be released towards January of 2019.

This year's undergraduate research symposium represents one of the largest groups of students participating in oral and poster presentations.

The development and implementation of all of these projects takes a great deal of hard work. I would like to take the time to thank each of the members of the Advisory Board. They are:

- ♦ Prof. Daniel Bennett, School Science and Human Development
- ♦ Dr. Lori Brookman, *ex officio*
- ♦ Dr. Del Crisp, *ex officio*
- ♦ Dr. Cameron Dodworth, School of Arts and Humanities
- ♦ Dr. Hugh Harling, Chair of Internal Review Board
- ♦ Dr. Trey Hoyt, School of Heath Sciences
- ♦ Ms. Wendy Hustwit, Grant Writer and Sponsored Research Officer
- ♦ Dr. JD Knode, Reeves School of Business
- ♦ Dr. Jamie Robbins, School of Science and Human Development
- ♦ Dr. Eric See, School of Public Affairs
- ♦ Dr. Larry Wells, School of Arts and Humanities

I thank all of you, the Methodist University Community, for helping make the efforts of the Center for Research and Creativity a success.

