Scholars Day

PROGRAM & ABSTRACTS

Wesley College
Dover, Delaware

* April 18, 2019 *
About Scholars Day at Wesley College

Scholars Day has grown and become a signature annual event at Wesley College in Dover Delaware during which students present their research works and other creative activities from all disciplines to the entire community of friends and family members as well as faculty, fellow students, staff, industry leaders, members of government, and grant agencies that often attend the Scholars Day of festivities. The first Scholars Day took place on April 11, 2007. Upon approval by the then Dean of Academic Affairs (Dr. Paul DeGateongo), the Faculty Scholars Day Committee (then called Scholars Day Task Force) co-chaired by Dr. Jeffrey Gibson (then a new faculty member) and Dr. Bruce Allison organized it. The first Scholars Day began with an opening address at exactly 1:00pm on that day by the then President of Wesley College, Dr. Scott D. Miller. Thirty-five students mentored by sixteen faculty members made both oral and poster presentations on that occasion. Other members of the first Scholars Day Committee for that first year were Dr. Jessica James, Dr. Karen Panunto and Dr. H. Earl Roberts. Around the year 2010, Scholars Day was approved by the full faculty as a standing faculty committee whose members were no longer appointed but elected by the entire faculty.

Over the years and with the help of grant support from various grant efforts led by Dr. Malcolm D’Souza, the Scholars Day under the leadership of various Scholars Day committees has blossomed into a magnificent event. Various initiatives of the Scholars Day are made possible by the resources provided by the grant money. The introduction of Scholars Day T-shirts was a big milestone in the life of Scholars. It served both as incentive (to the students, faculty mentors, moderators, etc.) and advertisement of Scholars Day to the entire community.

As the Scholars Day festivities continue to grow, so does the participation and support from the surrounding community. This year Scholars Day is the venue to disseminate research findings from other colleges and organizations such as Delaware Technical College, Rutgers University, and Christiana Care Health Systems. This year we reached out to Delaware High Schools and to the Restoring Dover Planning Commission to elicit the participation and plant the seed for future Scholars Day festivities.

Scholars Day would not be a success without the countless volunteers of students, faculty and staff that step up to help on Scholars Day. Most importantly, Scholars Day would not be a success without the dedication and countless sacrifices made by the members of the Scholars Day Committee that plan and put together the Scholars Day celebration each year. They solicit and review applications and often go extra miles to organize a befitting Scholars Day event. For the Scholars Days of the following years, the Scholars Day Committee has been chaired by the following people: 2007 (Dr. Jeffrey Gibson & Dr. Bruce Allison), 2008 (Dr. Jeffrey Gibson), 2009 & 2010 (Dr. Jack Barnhardt), 2011 & 2012 (Dr. Frank Fiedler), 2013 (Dr. Alban Urbanas), 2014 (Dr. Valerie Perez & Prof. Elizabeth Marchioni), 2015 (Dr. Kraiwinee “Nok” Bunyaratavej & Dr. Derald Wentzien), 2016 (Dr. Brantley Craig), 2017 & 2018 (Dr. Agashi Nwogbaga), 2019 (Prof. Darla Davidson). All the Scholars Day Committee members for all these years are listed in the special “Thank You” section towards the end of this program booklet. Special thanks are due to Robert E. Clark II (President of Wesley College), Dr. Jeffrey Gibson (Provost/VPAA), and Dr. Malcolm D’Souza for their unwavering support of Scholars Day.

Finally, although Wesley College is a small liberal arts college, over one hundred students from various disciplines have been making presentations at Scholars Days each year. In recent years, it is noteworthy that a number of the undergraduate research activities are sponsored (in part) from grants from the State of Delaware, the NIH-NIGMS-INBRE, the NSF-EPSCoR, the Project WICCED, and the NSF S-STEM programs. Funding for Scholars Day was also provided by the Wesley College SGA.
Schedule of Events

Lunch for Presenters, Performers, & Volunteers CC 206
12:00-12:45

Welcome & Opening Remarks CC206
12:45 – 1:00 p.m.
Robert E. Clark II
President of Wesley College

Keynote Speaker CC206
1:00 – 2:00 pm
Dr. Brian Chad Starks
Speaker, Writer, & Critical Criminologist

Session I
2:10 – 2:50
Oral Presentations
Poster Presentations
Photography Exhibit
Community Garden Exhibit

Session II
3:00 – 3:40
Oral Presentations
Poster Presentations

Session III
3:50 – 4:30
Oral Presentations
Poster Presentations

Closing Ceremonies CC 206
4:45 – 5:30
Remarks from Darla Davidson, Chair of Scholars Day Committee
Invited Speaker: Dr. Jim McCargar

Oral Presentations in
Slaybaugh Hall 104, Cannon Hall 7, Cannon Hall 109, Cannon Hall 110

Poster Presentations in College Center Portico (North Circle)
In the event of rain, poster presentations will be in the College Center Lobby.

Photography Exhibit in CC 206
Keynote Speaker

Dr. BRIAN CHAD STARKS
SPEAKER, WRITER and
CRITICAL CRIMINOLOGIST
http://brianchadstarks.com/

Dr. Starks was born and raised in
“The Metro” – Columbia, South Carolina.
He attended Richland County public schools
and graduated from Columbia High School.
Dr. Starks attended Wofford College in
Spartanburg, South Carolina where he
played football and majored in sociology. For
more than 20 years, he has worked to build social justice
and equity for individuals, organizations and communities.
The former owner of B. Chad Bonding, Dr. Starks holds a Master’s degree in Criminal Justice from the
University of South Carolina and a doctorate in Criminology from the University of Delaware. Dr. Starks
defended his dissertation, “A Bail of Two Cities: Examining the First Criminal Court Phase – Atlanta vs.
Philadelphia,” in August 2012. In his dissertation, Dr. Starks examined the social organizational structure of the
University, and Benedict College in Columbia, South Carolina. Dr. Starks also serves as an Associate Director
with the Delaware NASA Space Grant Consortium where he works to increase minority student representation.
In 2014, Dr. Starks was awarded the Louis L. Redding Diversity Award from the University of Delaware. This
award honors individuals who have implemented diversity programs that resulted in a significant change to the
culture and climate of the university. In 2016, Dr. Starks received the NAACP Civil Rights award from the
Lynchburg, Virginia Branch. He was also inducted into the 2016 Wofford College Athletic Hall of Fame. Dr.
Starks is an active member of his community, serving on the Boards of Directors for Big Brothers Big Sisters
and Beacon of Hope. He is a proud member of the Omega Psi Phi Fraternity, Incorporated. As CEO of BCS &
Associates Consulting Firm, Dr. Starks travels around the country, speaking and teaching the truth about
implicit bias, cultural competency, and structural inequality.
Closing Ceremony Speaker

Dr. JIM MCCARGAR

ASSOCIATE DEAN, SCHOOL OF NATURAL SCIENCES, MATHEMATICS AND COMPUTING
PROFESSOR OF CHEMISTRY
Ph.D., Kent State University
B.A., The State University of New York at Potsdam

Contact:
(440) 826-2313, jmccarga@bw.edu

Dr. James W. McCargar is a professor of physical chemistry and the associate dean of the School of Natural Sciences, Mathematics and Computing. McCargar earned his bachelor’s degree from State University of New York (SUNY) at Potsdam and his doctorate from Kent State University. Before coming to BW in 1991, he held postdoctoral research appointments at the Kent State University Liquid Crystal Institute and at the University of Cincinnati. Within the field of chemistry, McCargar has co-authored several articles in the areas of solution thermodynamics, electrochemistry, spectroscopy and materials. He has been a visiting scientist at Kent State University and The University of Akron and was a summer research fellow at NASA–Lewis Research Center and Ohio Aerospace Institute. McCargar was selected as a 2003-04 American Council on Education (ACE) fellow. The ACE Fellows program is the signature leadership development program for higher education leadership. During his time at Baldwin Wallace, McCargar has received the Bechberger Award for Human Development and has twice been recognized with the Student Senate Faculty Excellence Award.

McCargar is interested in the scholarship of teaching and learning, specifically in the relationship between guided inquiry and open inquiry in the physical chemistry laboratory. Most recently, he has developed a guided inquiry-open inquiry approach to kinetic modeling of atmospheric reaction mechanisms.

RESEARCH INTERESTS
McCargar's research interests span a number of areas related to physical chemistry, chemical physics and chemical education. Within the area of physical chemistry, he is interested in the adsorption of molecules from aqueous solutions on various substrates and the solubility properties of pesticide metabolites in aqueous and non-aqueous systems. In chemical physics, he is interested in spectroscopy - the interaction of light with matter - and computational chemists - the use of computer algorithms to determine optimal molecular geometries, energies, molecular orbitals, vibrational modes and frequencies, etc.- to determine the structural and chemical properties of molecules.
Session 1: Oral Presentations
2:10-2:50 p.m.

Panel 1: Cannon Hall 7
Moderator: Dr. Alban Urbanas
Assessor: Rebecca Schröding

Megan Delawder
Mentor: Dr. Alban Urbanas

Medical Marijuana

The issue of legalizing medical marijuana has been debated for centuries in the United States. The original purpose of marijuana was for healing purposes. However, there has been an increased rate of addiction over the years that concerns society. Exploring this topic will open individuals to see different perspectives for and against legalizing medical marijuana with possible policies to help the United States.

Samantha Williams
Mentor: Jerry Mench

Nursing Interventions to Prevent Healthcare-Associated Infections among Pediatric Patients in Long-Term Care Facilities versus Pediatric Hospital Units

Infection prevention is a vital aspect of healthcare, with healthcare-associated infections (HAIs) causing patient harm, longer hospitalization, and increased expenses for hospitals. The pediatric population is particularly susceptible to these kinds of infections due to immature immune system development and lack of knowledge and education acquired to protect themselves when their healthcare providers do not. Nursing care on pediatric hospital units can be quite different than in pediatric long-term care facilities (pLTCFs), allowing for discrepancies in infection prevention protocols. This paper will examine journals that identify the protocols in place at different facilities (including hospital units and pLTCFs) used to combat the development of HAIs in the pediatric population.

Panel 2: Cannon Hall 110
Moderator: Dr. Albee Mendoza
Assessor: Dr. Tamala Paxton

Zachary Weitzel, Joe Fingles, Ben Mitzel, & David King
Mentor: Prof. Kraiwinee Bunyaratavej

Is FAANG stock the new Dotcom Phenomenon?

We will be discussing the dotcom bubble era, the dotcom burst and the FAANG stock performance in order to see if these stocks will have the same fate as the dotcom bust phenomenon. We will be researching the history of the dotcom bubble and burst, and why it is relevant still today. Throughout the literature review we will review articles written by analysts of today’s market to see if these FAANG stocks are in a bubble. In the process we will evaluate FAANG stocks through different techniques as analysis used for the dotcom bubble. The valuation methods we will use are valuation ratios that value whether FAANG stocks are overvalued or undervalued. We will be using three valuation ratios: Price-to-earnings ratio, Price-to-book ratio and then also
the Q ratio. Finally we will summarize our findings and results to draw conclusions about where FAANG stocks are heading and of investors should invest in these stock for the future.

Joseph Simmons, Alexandre Meza, & Wenjing Xie  
Mentor: Prof. Kraiwinee Bunyaratavej  

The Strategies of Day Trading

This paper explains what day trading is, the pros and cons of day trading, and evaluates some strategies used while day trading in the stock market. Day trading is a controversial topic, but we will argue why day trading can be effective through the use of four different strategies. Using a stock market simulation on StockTrak, we will be comparing our return percentages from before having a strategy to implementing a strategy. We hypothesize that we will have a better return percentage after using a strategy with day trading. This would be where we share our results and conclusion.

Panel 3: Slaybaugh Hall 104
Moderator: Dr. Brantley Craig  
Assessor: Dr. Ethan Hawkley

Christine Mctheny  
Mentor: Dr. Brantley Craig

Jedi Knights, Sith Lords, and Mystics

The journeys of both Luke Skywalker and Anakin Skywalker can be seen as representations of Evelyn Underhill’s “The Mystic Way.” Mysticism is a transcendental journey to become one with a divine force. Both Luke and Anakin begin this journey, and where Luke is successful in becoming one with “The Force,” and completing the Mystic Journey, Anakin ultimately fails. His failure is a result of his unwillingness to be controlled by The Force, because he wants to control it himself. This is the opposite of what a true mystic wishes to pursue. By becoming at odds with the divine spirit in the Star Wars universe, Anakin Skywalker becomes the well-known character of Darth Vader, the opposite of a true mystic. By using Luke and Anakin/Vader as an accessible illustration of Underhill’s work, one can understand the Mystic journey and apply her concepts to other contemporary works.

James Poole  
Mentor: Dr. Stephanie Holyfield

Maintaining the Pox Romana: Policies of the Roman Emperors in regards to the Christians

The classical view of Europe is deeply embedded in Christian tradition; however, two-thousand years ago, polytheism dominated European culture. Along the shores of Mediterranean Italy, the Roman Empire influenced the scope of religion in many ways. The development of Christianity was perhaps the greatest example. Whereas many recollect the cruelties Emperor Nero inflicted, few recall the shifting policies of Christian toleration up to the reign of Constantine. This oral presentation will highlight varying policies of a handful of emperors from the Antonine Dynasty, the reign of the Five Good Emperors, and the Tetrarchy preceding Constantine’s era. Each era will highlight at least one or two emperors who impacted the rise of Christianity in the Roman Empire, setting the stage for the Edict of Milan in 313 C.E. and the reign of Constantine. The presentation will demonstrate how imperial policy was malleable and in flux regarding the role of Christians in the Roman Empire.
The Impact of Poverty on Health

The purpose of our international field study is to explore the socioculture dimension of health and illness and to impact the healthcare of a global community. We will explore the geographical, educational, and socioeconomic construction that have affected the health of Guatemalans over several years. The effects of poverty, homelessness, and violence will also be examined. Our research prepares us to provide care in rural communities of Antigua, Guatemala. We will teach health education in public and private schools and to different families in the hills of Tabacal. Our team will minimize the effects of homelessness by building a house for a family in need, in addition, provide nursing care to patients at a local clinic to maximize health and wellness in the community. Our objective is to maintain consistent collaboration between Wesley College Nursing and our Guatemalan partners to positively impact the health of their communities, while enhancing our nursing education on global health and culturally competent care.

Michael Tolerico
Mentor: Prof. Marcella Legath


Vestibular, Ocular, and motor impairments are routinely reported in patients diagnosed with a mild traumatic brain injury. Currently, protocols are limited for elderly patients recovering from a concussion. A vestibular ocular motor screening (VOMS) will be conducted on elderly patients at Bayhealth Memorial Hospital, to bring to the surface concussion symptoms related to three systems in the body; vision, balance, and motor. The purpose of this paper is to create an individualized, Return to Home Protocol in connection with the results of the VOMS. Thus, reducing symptomatic patients and promote independence in daily activities. The VOMS will be implemented on 30 participants at Bayhealth based on the results of the VOMS; an individualized, Return to Home Protocol consisting of heart rate intensities, exercise interventions, education, and symptom management techniques will be given to physical and occupational therapists at Bayhealth to treat the 30 participants.
Skin to skin care (SSC) is a widely accepted intervention for neonatal infants in Neonatal Intensive Care settings. SSC is a holistic intervention that focuses on the common theme in pediatric nursing: family centered care. SSC is usually done in the form of kangaroo care; where the infant wears only a diaper and is placed on the parent’s bare chest with a blanket covering them. This presentation will compare outcomes of neonatal infants receiving SSC in the NICU setting to those who are not. Twelve nursing research articles, including primary and secondary research, were analyzed for their results and outcomes measured during skin to skin care. This presentation explores the outcomes associated with SSC, including improved temperature stability, sleep organization, maintenance of oxygenation, and improved parental bonding in neonatal infants compared to neonatal infants not receiving skin to skin care.

Emily Etkins, Jessica Dukes, & Maria Truong
Mentor: Prof. Marcella Legath

Health Care for the Homeless: Exploring the Lived Experience

The homeless population is largely underserved, and the quality of their health care should be addressed at a higher concern. In this study, a phenomenological design explored the perspectives homeless individuals have regarding their health care access and the quality of care received. Participants were recruited from a local men’s shelter located in Dover, DE. Participants were interviewed using a Likert scale to identify quality of health care experiences as well as a questionnaire to prompt open-ended discussions. The goal of the study was to determine if a gap in service delivery may exist and identify the view each individual has on the quality of their healthcare reciprocity of those services.

Sydney Hall
Mentor: Dr. Stephanie Stotts

Dendrochronological Analysis of Low Elevation Red Cedars Facing Potential Salt Intrusion

Salinification from rising seas can have significant negative impacts to coastal forests like those at the St. Jones Reserve in Dover, De. Dendrochronology, the study of environmental conditions through the analysis on annual tree rings, can be a tool to determine the impact of salt intrusion/stress on tree growth and mortality. The goal of this study was to develop a chronology from trees near the marsh/forest boundary with obvious signs of salinification (dead trees, limb death, presence of salt grasses). Fifteen red cedars were cored with an increment borer, and all rings were measured with a linear encoder. The data was processed for quality control and growth and climate trends were removed, producing a final chronology. Ultimately, an additional chronology using upland trees will be developed. Subtracting the low chronology from the upland chronology will produce a difference chronology that will provide insight about the impact of salinification on coastal forests.

Rachel Harman, Michelle Pipersburgh, Rochelle Bazil, Sydney Botsch, Shannon McCoy
Mentor: Prof. Darla Davidson

Quality Improvement in the Care of Newborns with Neonatal Abstinence Syndrome-Poster

Opioid dependence remains a serious global problem and is now more common in pregnant women. One-Third of the population entering treatment for opioid abuse and dependence are women in their child bearing years, causing an increase in the number of infants born addicted. Not all infants born to addicted mothers are receiving optimal care due to lack of disseminated evidence based practice. This quality improvement project involved preforming a comprehensive literature review. The review focuses on the specific needs that a newborn with neonatal abstinence syndrome (NAS) requires. Due to the current state of wakefulness and
irritability, high pitched crying, and many other symptoms NAS babies experience, the amount of attention they require needs to be constant. The literature revealed that treating the mother and baby together showed decreased use of morphine in the newborn, decrease length of stay and a decrease in NAS scores.

Joshua Short  
Mentor: Dr. Mark Mattesi

_The Relationship Between Coaching Styles and Athlete Motivation_

My research is entitled, The Relationship Between Coaching Styles and Athlete Motivation. My research is to find how athlete motivation is related to coaching style. The two coaching styles of interest in my study are democratic and autocratic coaching styles. My hypothesis is that a democratic coaching style will lead to greater athlete motivation than an autocratic style. I will be surveying two Wesley College athletic teams in an effort to collect and statistically analyze data by using a Coach-Athlete Motivation Questionnaire of self-report data from all players surveyed. A coaching style questionnaire will be administered to two head coaches to understand their style of coaching either autocratic or democratic. The results of my study could expand the literature on athletic motivation amongst college-aged athletes and the styles preferred of their coaches. My research will conclude that there is a relationship between an athlete’s motivational tendencies as it pertains to a particular style of coaching.

Kylea Lankford  
Mentor: Dr. Malcolm D'Souza

_Inductive Effects In Carbonyl Addition Reactions_

2,2,3,3,4,4,4-Heptafluorobutyl Chloroformate (C₅H₂ClF₇O₂) is used in treating conditions that are associated with diabetes. The compound aides in controlling the elevations of the beta-1 and beta-2 isozymes within the body. Protein Kinase C isoymes, beta-1 and beta-2, can be inhibited within the body through the use of several known compounds, but specifically 2,2,3,3,4,4,4-Heptafluorobutyl Chloroformate. Comparing the solvolysis of 2,2,3,3,4,4,4-Heptafluorobutyl Chloroformate and its parent, Butyl Chloroformate, we conclude that 2,2,3,3,4,4,4-Heptafluorobutyl Chloroformate follows an Addition-Elimination process in all solvents, including the highly ionizing TFE and HFIP mixtures. The l/m (bonds made/bonds broken) ratio for 2,2,3,3,4,4,4-Heptafluorobutyl Chloroformate signifies a much earlier tetrahedral transition state occurring and a stronger general base catalysis.

Sharron Gross  
Mentor: Dr. Mary Jenson

_Underrepresented Women in Developmental Psychology_

This poster will examine one of the first African American women to earn a Ph.D in Psychology, Ruth Winifred Howard. This poster will shine the light on some of the many achievements during her time as a woman in psychology. Originally interested in social work, through her participation in organizations such as the Cleveland Urban League and Cleveland Child Welfare Agency, she found a lack of concern and understanding in children in the surrounding community. Wanting to further her understanding of feelings, attitudes, and different behaviors, her interest in Psychology grew rapidly. Earning her Ph.D in child development psychology lead her to doing much more research. Although Ruth Howard did not come up with any known theories of her own, she brought greater insight on the faults of lower class society and spent her later years of her life trying to improve social development of lower classes and minorities.
Predicting Postpartum Readmissions for Hypertension

The purpose of this study is to determine the characteristics of women readmitted postpartum for hypertension to better identify those at risk to possibly prevent readmission and reduce associated health care costs. Preeclampsia is the leading cause of maternal and perinatal morbidity and mortality; however, postpartum preeclampsia is a specific disorder that occurs after delivery. This was a retrospective cohort study of women readmitted after delivery for hypertension during 2016-2017. Data from the CCHS data warehouse and electronic records were examined for demographics and treatment information. Of ~13000 women who delivered during the study period, 139 were readmitted for hypertension. These women were disproportionately African American compared to all African American deliveries. Seventy-eight percent were either overweight or obese. Cesarean delivery was disproportionately more common. African American ethnicity, obesity, cesarean delivery, any incidence of hypertension during labor or postpartum and fluid retention after deliveries are risk factors for readmission.

Alexa Henderson, Erin Graves, Megan Johnson, Zoe Buckworth, Alexis Satterfield, & Sameera Thompson
Mentor: Dr. Kathleen Neal

Florence Nightingale

Florence Nightingale is known as the founder of modern nursing because she had many great contributions to the field of nursing. One of Nightingale’s greatest contributions was her environmental theory. Nightingale’s environmental theory states that environmental factors such as noise, light, air, ventilation, and cleanliness contribute greatly to a patient’s health and recovery. The purpose of this project was to identify who Florence Nightingale was, give a background on her theory, identify her views in relation to clients, health, environment, and nursing, and the contributions of her theory still used in modern nursing practice. The information collected was gathered through online research databases and a primary source. Students eager to learn more about those who contributed to nursing as a profession today will gain knowledge through the work of Florence Nightingale. Nightingale contributed greatly to modern day nursing through her environmental theory and her work as a nurse.

Jessica Behorner, Jahni Love, Amanda Deputy, Joshua Hughes, & Dori Loukopoulos
Mentor: Dr. Kathleen Curran

Female Choice and the Rare Male Fruit Fly

Sexual selection is an important factor in species because it provides a variety of genetic combinations and traits in populations. In this experiment, we are testing to see if females have the ability to discriminate among prospect mating partners. Specifically, we are testing the rare male effect, which involves deciding if rare males have a mating advantage under controlled conditions when being compared to normal fruit flies. For the experiment, there will be two different trials. The first trial is a vial containing one virgin female fruit fly, eight male fruit flies from the white strain, and two wild type male fruit flies. In the second trial the vial will contain one virgin female fruit fly, eight wild type male fruit flies, and two male white strain fruit flies. The overall concept we are eager to determine is whether male mating frequency is proportional to male abundance.
Jordan Stevens, Caelli Clifford, Maryssa Roberts, Aaron Nelson, & Rex Chege  
Mentor: Dr. Kathleen Curran

*Color Perception in Honey Bees*

The purpose of this study is to examine the ability of honey bees to learn and identify colors. Also to evaluate the geometric shapes by allowing bees to forage while using artificial nectar guides. We are going to test the color perception of foraging honey bees outside by using artificial flowers which will be different colors.

Kayla Ryan  
Mentor: Dr. Robert Contino

*Dietary Considerations for Preventing Cardiovascular Disease*

Nurses play an essential role in patient education. An estimated 80% of premature heart disease and stroke are preventable, and dietary programs that support the reduction of cardiovascular risks should be included in patient teaching (Walter, 2013). This research outlines diets that nurses may suggest to patients who are at-risk for cardiovascular disease. The following four diets were evaluated through scholarly, peer-reviewed research journals and found to decrease risk for future ischemic stroke, myocardial infarction, and heart failure: the Dietary Approaches to Stop Hypertension (DASH) diet, the Mediterranean-style diet (MeDi), the National Institute for Health Care Excellence (NICE) diet, and the vegetarian diet. The major similarities and differences between these four diets are also highlighted. This includes but is not limited to the recommended consumption of fruits, vegetables, meats, saturated fats, and alcohol. An evidence-based dietary plan has a strong potential to decrease patient mortality by preventing future cardiovascular events.

Eleni Lyssikatos, Gianna Galeotafiore, & Albert Cianfrini  
Mentor: Marcella Legath

*Wesley College Masters of Occupational Therapy: Helping Students Take the High Road When Coping with Emotional Behaviors*

The study’s purpose is to explore the potential impact education and implementation of self-regulation techniques may have on students that lack the ability to self-regulate in comprehensive classroom settings, therefore impacting overall academic performance. The design of the research project is experimental and observational. The experimental design reflects the manipulation of independent and dependent variables after education and implementation of regulatory techniques within the classroom. This design is measured by student outcomes of self-direction versus teacher-directed regulation. The observational design reflects the student’s ability to self-direct and engage in self-regulation techniques, which on a larger scale but not inclusive within the study’s measurements, will correlate to student’s overall academic performance. The research design will help determine what regulatory techniques are most effective for students at High Road School of New Castle County and overall self-regulation techniques that promote positive behavior for students of various diagnoses and mental health disorders.
Eileen Purcell
Mentor: Eileen Scanlon

Impact of Parental Substance Abuse on College Student’s Occupational Performance

The vast amount of literature on substance abuse focuses on the individual with the substance abuse disorder with little attention of the impact on the family members, more specifically their level of performance in their associated occupations. The purpose of this research is to examine college-aged students who live with a parent with active substance abuse and their level of performance in their primary role as a student. To capture a view of this complex issue, guided by the ecological systems model, the Burden Assessment Scale is utilized to measure the subjective and objective consequences of living with a parent with a substance abuse disorder. The findings of the research will shed light on the social, emotional, and personal impacts of living with a substance abuser and can help the field of occupational therapy by adding new information that can help guide practice areas in mental health and family systems.

Jeremy Wirick, Katelynn Fry, Daquay Harris-Winbush, Kylea Lankford, & Madison Siminari
Dr. Kathleen Curran

Color Perception in Honeybees

Honeybees are the world’s most important pollinator; they are responsible for the pollination of over one-third of food consumed daily. In order to pollinate efficiently, honeybees need to be able to distinguish between different flowers with different pollen contents, both by the shape and the color of the flower. Honeybees and other insects see wavelengths ranging from 300 nm to about 650 nm, but just because an animal can detect various wavelengths of light does not mean that they are able to differentiate between different colors. In order to assess their ability to see color, a group of subjects conditioned to feed at small dishes of honey on blue backgrounds will be observed at a setup of different colored backgrounds. If they can perceive blue they will feed them first.

Tymira Holman
Mentor: Prof. Charlisa Edelin

Mass Incarceration: Racial Disparities, Poverty, Mental Illness and Policing Tactics

The United States is the mass incarcerator of the world, as a result of holding only 5% of the world’s population but 25% of the world’s prisoners. The major factors that contribute to mass incarceration are racial disparities, poverty, mental illness and policing tactics. 13th, a documentary directed by Ava DuVernay, highlighted how African Americans are disproportionately represented with 2.2 million people behind bars and 60% of those individuals are people of color. The documentary also exposed how events such as the War on Drugs and the Reagan era enforced harsh police tactics such as 3 strikes law and mandatory minimum sentencing. Ultimately, mass incarceration of people of color, poor people and mentally ill people has led to privatization of prisons, which contributes to monetary gain for various government agencies.

Katherine King
Mentor: Dr. Jack Barnhardt

The Affects of Sleep on Elementary-Aged Children
Sleep is a basic physiological need for all, including children, who need at least nine hours per night. It is important to recognize poor sleeping patterns early so that they can be corrected before they lead to more serious health problems. Fortunately, sleep disturbances in children can be reliably identified by asking them about their perceptions of their own sleeping habits. Therefore in this study, 114 fifth graders were asked questions about the amount and quality of their sleep (predictor variable) and their current mood (criterion variable). Packets were distributed, each consisting of a coloring sheet and five copies of the survey. Teachers had students complete one survey every morning for one school week. The packets were then collected and scored based on the quality of the students’ sleep and the quality of their moods. The findings and their implications will be discussed.

**Austin Lonski**  
**Mentor:** Dr. Malcolm D'Souza

*Correlation analysis determines mechanistic pathway and the presence of general base catalysis*

Linear free energy relationships are important tools to elucidate pathways of organic reactivity. In particular, for structure-reactivity relationships in carbonyl substrates with differing solvents, the quantitative information gained from the application of the two-term Grunwald-Winstein equation is shown to be useful in predicting the transition-state bond-making (l) and bond-breaking (m) processes. In this project, we analyze 3 aryl chloroformates; phenyl chloroformate, (1), 4-methoxycarbonyl phenyl chloroformate (2), and 3-(trifluoromethyl)phenyl chloroformate (3) in a variety of pure and binary aqueous-organic solvents. A comparison of the reaction rates in pure ethanol demonstrates that the inductive effect is dominant, and k3 is 2 times faster than k2 and 18 times faster than k1. In addition, for 3, 2, and 1, the Grunwald-Winstein l/m ratios were found to be 4.1, 3.2, and 2.9 respectively. These ratios are indicative of a principal carbonyl-addition process where general-base catalysis increases in the sequence, $3 > 2 > 1$.

**Christine Roe, Alena Brown, Caitlin Owusu-Mensah, Kayla Heinicke, & Cody Simet**  
**Mentor:** Dr. Kathleen Curran

*Bean Beetle Relationship Between Fecundity and Oviposition Site and Bean Preference*

Callosobruchus maculatus, known as bean beetles, is an invasive species known to lay eggs on legumes. Precautionary measures must be taken during the importation of legumes from foreign countries to prevent the introduction of this species in the U.S. The purpose of this study is to determine the relationship between female fecundity and the availability of oviposition sites; female preferences when given choices among different types of beans. The three different experiments run were to determine the site preference among mung beans based on quantity of the bean in a petri-dish, the site preference among different bean species containing ten of each bean in a petri-dish and the birth success rate for different bean species containing one-hundred beans in each petri-dish. In each experiment we used one female to two male bean beetles. The different bean species used were mung, lentil, kidney, cowpeas, black and lima.

**Kalani Hollman, Jasmin Evans, & Amara Hill**  
**Mentor:** Dr. Gwen Pursell

*The Role of Birth Order and Perceived Parental Favoritism in Academic Success, Stress Management, and Use of Coping Strategies*

Research suggests that parental expectations differ by birth order of children. Parents have higher expectations for first-born children. These expectations may have an impact on first-born’s behavior. For example, first-borns outperform their siblings in leadership roles, years of schooling, and prestige of occupation. Perception of
parental favoritism also appears to impact behavior. Perception that one is not favored has been associated with poor mental health. Given that parental expectations differ by birth order, with first-borns experiencing the most pressure, it is possible that the experience of stress and coping may differ by birth order. Perceptions of parental favoritism may also be associated with stress and coping. This project will examine associations between birth order, stress management, and coping strategies. General associations between academic success, self-esteem, and coping strategies will also be examined. The sample will consist of 55 participants. Data will be collected using self-report questionnaires. Results will be discussed.

Jeremy Wirick, Rachel Piper, & Khadijah Bland  
Mentor: Dr. Malcolm D'Souza

Evaluating the Long-term Environmental Impacts of Carbamic Acid Derivatives

The application of agricultural chemicals leads to carbamate ester contamination in soil. N,N-diisopropyl- (1) and N,N-diallyl- (2) carbamoyl chlorides are found in compounds used for controlling harmful organisms. Their environmental accumulation poses a potential ecosystem risk due to direct or indirect exposure. For substrates 1 and 2, detailed kinetic studies using advanced techniques first determined their pseudo-first-order rate constants which were then used in linear free energy relationships to understand the (mixed) solvent effects. For 1 and 2, we obtained l/m (bond making/bond breaking) ratios of 0.73 and 0.57 respectively. The ratios are useful for assigning (breakdown) mechanisms. Soil microorganisms are capable of metabolizing carbamates and can easily adapt themselves to metabolize the different types of carbamates. The ability of Escherichia coli to grow in the presence of substrates 1 and 2 were determined. While no effects were observed when grown in complex media, some suppression of growth was observed when grown in minimal M9 media.

Session I: Photography Exhibit
2:10 – 2:50p.m. (all afternoon)

College Center 206  
Moderator: Dr. Ron Douglas

Elizabeth Martinez  
Mentor: Dr. Ron Douglas

Mental Illness is Not Black and White

My photo book, Mental Illness is not Black and White, focuses on mental illness in college students. The book draws attention to disorders that are most prevalent among college students. I use photographic realism and surrealism to illustrate emotional states described by people who experience depression disorders, anxiety disorders, and eating disorders. These photos are inspired and created by anonymous testimony from actual college students who experience these disorders, and who were willing to discuss their illness with me. I incorporated text from the Diagnostic and Statistical Manual of Mental Disorders (DSM 5) to give a more medical perspective. The photo sets consist of photos that are inspired by realist photography, while the others bring testimonies to life using surrealism. There are 14 photos in total.

Session I: Garden Exhibit
2:10 – 2:50p.m. (all afternoon)

Wesley College/Restoring Central Dover Community Garden
Combating Climate Change Through Vertical Gardening

Students in Wesley College’s Frontiers of Science: Climate Change course have spent the semester learning about the causes and consequences of climate change. Climate change is often considered a wicked problem, or problem that seems impossible to solve due to extreme complexities. Students are often motivated but unsure of how they can make a difference. Surprisingly, our food choices can contribute to climate change. The average meal in the United States travels 1,500 miles to get from farm to plate, leaving a substantial carbon footprint. Growing food locally can make a tremendous difference, but many people, particularly students, don’t have the space to garden. The students worked as teams to research vertical gardening and designed and built a vertical gardening structure. Their finished projects are displayed in the Wesley College/Restoring Central Dover Community Garden.

---

**Session II: Oral Presentations**

3:00 – 3:40 p.m.

**Panel 1: Cannon Hall 7**
Moderator: Dr. Alban Urbanas
Assessor: Rebecca Schroding

Michael Grosstephan
Mentor: Dr. Alban Urbanas

Charitable Donations and Governing Policies
My presentation will review the social, political, and ethical dimensions of charitable giving. I will explain the numerous ways individuals can request and collect monies or material gifts directed to charities. I will present and explain what relevant policies are in place, both locally and federally, to oversee or tax these items. I will examine the effectiveness or visible flaws in contemporary policy and the possibility of rewriting or replacing existing guidance. I will also identify effective practices and those subject to abuse. Finally, I will suggest approaches to measure policy effectiveness via current or proposed legislation.

James Griffith
Mentor: Dr. Saharat Pongsree

What have we learned from the 2008 Financial Crisis?

For years, economists have debated the root causes and appropriate solutions to The Great Recession. The financial crisis was rooted in the housing market and eventually spread to Wall Street institutions using speculative derivatives. One can only question why the housing market experienced such a boom because only claiming ‘predatory lending’ practices and ‘Wall Street’ greed isn’t enough; we must find out the inherent incentive(s) that caused mortgage lending to rapidly increase. An economic framework, the Austrian Business Cycle Theory, serves as a practical and justified way of evaluating such economic events in a way that promotes and protects the property rights of all individuals. By using the ABCT as a guide to find what we have learned from the financial crisis, we can better understand America’s false image as a geo-political superpower.

Panel 2: Cannon Hall 110
Moderator: Dr. Albee Mendoza
Assessor: Dr. Gwen Pursell

Phillip Moore
Mentor: Dr. Yu Tian

AWS for Digital Marketing

Amazon Web Services (AWS) is the answer to cloud computing and analysis for many companies. Why do so many use AWS for web hosting instead of other websites (such as GoDaddy.com)? The answer may lie in the 23 product categories and 177 different Internet and cloud products that Amazon offers. All of the products and services by AWS are an Added Value (AV) for the companies that choose to partner with Amazon. Whether it is a monetization platform helping publishers with advertising revenue or an ad agency managing campaigns, AWS enables the speed and efficiency to innovate at scale for the digital marketing business. Use real-time analytics to improve customer loyalty and engagement by delivering highly targeted, relevant and personalized solutions in the moments that matter the most. We study three businesses (in three different industries) to understand how AWS analytics help companies target, acquire and retain their customers.

Jalisa Henderson & Haneefa Weems
Mentor: Dr. Yu Tian

Charlotte Russe--Past, Present and Future

Charlotte Russe (CR) is a women’s clothing store that is known for their jeans and shoes selection. The competition includes Forever 21, Fashion Nova, Pretty Little Thing, and some fast fashion juggernauts (Zara, HSM) Recently, the company has filed for Chapter 11 bankruptcy and plans to close 94 stores to settle some of
their debt. Besides the failure to respond to the rapidly evolving fashion trends and latest styles, CR also missed the mark on connecting with teens and young adults using some digital and social media marketing tactics. In this research, we study the success cases of “on-trend, fast-fashion business model” of CR’s competition. We propose that CR to develop original content for its online business and employ Influencers to engage its core customers. This presentation also provides specific examples of the effectiveness of digital and social media marketing tactics.

Panel 3: Slaybaugh Hall 104
Moderator: Dr. Agashi Nwogbaga
Assessor: Dr. Tamala Paxton

Caitlin Owusu-Mensah, Nahlah Alsogaih, Markland Bailey
Mentor: Dr. Agashi Nwogbaga

Fighting Obesity Statistics with Fitness Exercises and Math

Obesity is a global concern. According to the World Health Organization (WHO), worldwide obesity has almost tripled since 1975. Here in the US, the Center for Disease Control and Prevention (CDC) reports that obesity is common, serious, and costly. This is not surprising because many people struggle with their weights for a number of reasons. Therefore, it is important to know how to deal with this situation. Whereas nutrition and good sleep are important in dealing with obesity, the focus of this study is on how to stave off and deal with obesity using common fitness exercises and simple math. What about those who have already tried different exercises but are unable to achieve their fitness goals? This study also provides strategies for getting and staying motivated despite any setbacks.

Eduine Legros & Megan Delawder
Mentor: Dr. Agashi Nwogbaga

US Census 2020 and Statistics in our Lives

Statistics is everywhere in our lives. In particular, US Census generates humongous quantities of statistical data that are used to make vital and numerous decisions that in turn affect every facet of our lives. Such decisions include decisions about public safety and emergency preparedness, business startups and expansions, location of educational and scientific infrastructures, political representation, and many more. U.S. Census comes every ten years and 2020 is the next U.S. Census year. In this study, we examine census statistics and discuss the importance of census statistics to various segments of our society. We also include simple steps each one of us can take to enhance the full utility and potential of census data for everyone including those not yet born.

Panel 4: Cannon Hall 109
Moderator: Dr. Jack Barnhardt
Assessor: Dr. Julie Fisher

Colin Correia
Mentor: Charlisa Edelin

The Modern Criminal: Accessing and Using the Dark Web and Cryptocurrency

Through technological advancements, criminals are moving their prospective businesses from the street corner to the web. Utilizing and embracing the dark web and cryptocurrencies, these criminals can reach customer
bases, and levels of success, which would be unattainable while using conventional methods of sale and distribution. The dark web provides the perfect marketplace for anyone who is seeking to attain an illicit good or service, while cryptocurrencies, such as Bitcoin, are providing the necessary and anonymous medium to fund the trade. Together, the dark web and cryptocurrencies are revolutionizing and modernizing illicit business, rapidly becoming the preferred platform in which criminals conduct their offenses.

Rebecca Herrera  
Mentor: Dr. David Laganella

Punk's Not Dead

Punk is not dead and I claim to show the current reflections in today’s society both in America and across the world. A historical overview will show what Punk was like when it first started in New York and London. Though Punk ended in 1979, it was one of the biggest musical topics that broke off into new sub-genres that are still around today, such as pop-punk, grunge, and hard-core punk. Along with these new sub-genres, the punk influence is shown in modern day social- activism movements like art life, economic inequality, and social mobility. The aesthetics of punk fashion can also be seen in today’s society with the way people dress. Also punk attitude can be found in the business world or other economic sectors with the “do it yourself” attitude.

Session II: Poster Presentations

3:00 – 3:40 p.m.

Location: College Center Portico (North Circle)

Joshua Hughes  
Mentor: Dr. Derald Wentzien

Athlete V. Non- Athlete GPA Comparison

In this research I will be taking data of a graduated class of a selected high school and comparing the data between students who were athletes and non-athletes. In this research the mean athlete and non-athlete Grade Point Averages (GPAs) will be calculated and compared to analyze the effect of athletic participation on academic performance. Is the privilege to play a sport enough to boost the GPA’s in students compared to those students who don’t play a sport. An SAS statistical test will be run with the data acquired from said high school displaying the difference in GPA’s between the student athletes and non-athletes.

Cole Grider  
Mentor: Dr. Derald Wentzien

The Analysis of Card Games using Probability and Statistics

This project will review how statistics and probability theory factors into decisions made while playing and during deck construction in trading card games, such as Pokemon, Yu-Gi-Oh, and Magic: The Gathering. Probability theory will be used to analyze decisions such as how many of a card will be placed in a deck based on it's importance and the constraint of how many are allowed in a deck, and how likely you are to see a given card or cards during a game based on how many cards have already been played.
**High School Location of Wesley College Students**

Members of the Cannon Scholars program at Wesley College have recently started visiting high schools in Delaware to promote our STEM programs and recruit future Wesley STEM students. To target these recruiting efforts, this project generates a spatial analysis of Wesley “feeder” schools. Non-identifying information regarding the graduating high school for all current Wesley students was obtained from the college. Using ArcGIS pro and school location information downloaded from the United States Geological Survey, a graduated symbol feeder map for the state of Delaware and a list of schools near Wesley with few recruits will be generated. All results will be shared with the Cannon Scholars program and the admissions office.

**Anthony Calcutta**  
Mentor: Dr. Derald Wentzien

*Top 3 Most Dangerous Pesticides in Apples, Oranges, Broccoli and Asparagus Through the Years 2006-2016*

Pesticides are different types of chemicals made by man to stop the growing of bacteria or kill any type of organism causing harm to fruits, vegetables, meat, protein or genetically modified food. With the formation of pesticides and using them they propose a lot of risks involving human health and the environment, which brings up questions for concerns. This project involves apples, oranges, broccoli and asparagus and how the three most dangerous types of pesticides used on them can cause health risks from birth to defects to causing environmental risks to the environment, will be conducting research through years 2006-2016 in order to have reliable data over the last 10-years. Want to find a trend through statistics to see over the 10-year span how drastically did the top 3 pesticides reach the top and what harm they can cause to human health or the environment.

**Rachel Piper & Khadijah Bland**  
Mentor: Dr. Stephanie Stotts

*Potential Impact of Income on Coronary Artery Disease Related Deaths*

Coronary Artery disease is caused by plaque buildup in the arteries which inhibits blood flow, typically caused by an unhealthy diet. In the United States, health related medical problems are on the rise due to the increasing cost of healthy food. People tend to turn to processed frozen meals over fresh fruits and vegetables. This study tests the hypothesis that states with lower income will have higher rates of death caused by coronary artery disease. A spatial analysis was completed in ArcGIS Pro using death rate data from the Center for Disease Control and income data from the United States Census. State level maps of both variables were generated using ArcGIS Pro, and a statistical analysis was used to compare coronary related death rates between high and low income states.

**Katie Glidden**  
Mentor: Dianitza Runser

*Role Strain of Family Caregivers of Dementia and Effect on Quality of Life Abstract*

This poster presentation presents a systemic review of primary sources that show the need for interventions to improve the quality of life of dementia caregivers. Studies retrieved data using interviews and questionnaires.
that focused on different types of strain the caregivers experienced related to their home lives, dependence of care receiver, resources available, economic class and stress. Findings indicate that there is an increase in role strain and adverse health effects of dementia caregivers when there is a decrease in support, resources, and an increase in care demands of the patient. Limitations within these studies included small sample sizes from a single care facility in one area. Other limitations include that results found using self-report and follow up phone interviews. This has clinical relevance because healthcare providers need to be informed of clinical manifestations of role strain and the adverse health effects that accompany a person experiencing it.

Jenna Gruwell & Mariah Payne
Mentor: Danielle Archambault

Environmental Aspects Affecting Study Efforts and Motivation in College Students

Occupational therapy is a developing field in which therapists interact with clients of various capabilities to increase functionality. Occupational therapists focus on functional abilities and their impact on occupations, which includes education. One way in which functionality and education is impacted is through mood-setting and motivational aspects of the study environment. The purpose of this study is to explore student perceptions of the aesthetics in a student study center and how this may impact students’ attitudes toward studying. The authors will use a survey and receive approval from Wesley College IRB to examine students’ attitudes toward their study environment. The results from this research study will be utilized in the 2019-2020 academic school year to catalyze a renovation to the school’s Academic Success Center.

Omasan Uyebi
Mentor: Dr. Malcolm D’Souza

Fantasizing Ethereal Chemistry in Delaware

To coincide with the 2018 Chemistry is Out of this World ACS Chemistry-Week theme, six Wesley College (Wesley) Organic II students fashioned experiments and hands-on activities for approximately 350 K-8 students during a day-long Delaware (DE)-ACS Section sponsored event. Through the DE-EPSCoR and DE-INBRE program sponsorship, the Wesley participants exhibited fun, space-themed, scientific principles in the construction of dry-ice comets, galaxy bottles, lava lamps, and UV-bracelets. Such engaging activities allowed the primary and middle school participants to learn about the importance of collaborative engagement, thoughtful questions and approaches, and the substances of failure in science. In addition, the Wesley students fostered new connections, gained significant appreciation of basic science, and became adept at finding available resources.

Cassandra Miller
Mentor: Dr. Stephanie Stotts

Development of a Pre- and Post- Test Mechanism to Evaluate Student Understanding of the Scientific Method

The scientific method is a useful guide that to help solve problems through a reasonable, thoughtful approaches to complex questions and is taught in Wesley College’s Frontiers of Science courses. The purpose of this project was to develop a pre-test/post-test to assess student understanding of the scientific method. Three pre-tests and post-tests were created through consolidating questions from reliable websites with different scenarios, true/false, multiple choice, and matching questions about the scientific method. Each test is one page long varying between eight and eleven questions. These exams will be consolidated and included in an education unit being developed by Wesley College students and ANP technologies. The exam will be administered to
assess the effectiveness of the unit for increasing the understanding of the scientific method and may eventually be included in all Fronteirs of Science courses.

Jeremy Wirick, Austin Lonski, Osama Mahmoud, & Matt Dina
Mentor: Dr. Stephanie Stotts

Spatial Analysis of Opioid Mortality and Income

Opioid mortality has been an increasingly prevalent issue in the United States for the past two decades. Previous studies have speculated on a correlation between income and opioid related mortalities. The current study provides a state level spatial analysis of opioid mortality rates in the United States with a county level analysis for the state of Delaware using Geographic Information Systems (GIS). Correlations between average household income and opioid mortality rate are assessed. Additionally, a differential map displaying the age adjusted mortality rate for the years 1999 to 2007, and 2007 to 2016 is generated, displaying the sharp increase in opioid mortality. The data used in the study was collected by the Center for Disease Control, and obtained using the CDC WONDER database tool; household income information was gathered through the use of the US census bureau.

Savanah Love
Mentor: Dr. Stephanie Stotts

Climate change and the Philadelphia Flower Show: Regional Trends of Exhibit Patron Views on Climate Change

The Philadelphia Flower show hosts thousands of people every year to show off floral displays from various groups with a theme. The 2019 theme was “Flower Power”. Herban Apotheke, an urban apothecary was a display hosted by the University of Delaware that conveyed how flowers and herbs heal our bodies medicinally and bring benefits to the land. One focus of this exhibit was climate change adaptation as climate change has caused rising temperatures. Due to the heat island effect, urban areas experience more consecutive days over 95*F, but gardens can help alleviate rising temperatures. For this project, Global Warming’s “Six Americas Short Survey” was administered to people attending the Herban Apotheke and a map was generated using ArcGIS Pro to examine regional trends in exhibit goers’ climate change attitudes. The results of this study will help exhibitors to quantify the reach of their exhibits.

Alexander Jean Francois, Logan Minner, & Aditya Bajaj
Mentor: Dr. Kevin Shuman

Environmental Temperature and pH Effects Growth of Bacterial Isolates

The growth of a microorganism is dependent on environmental factors such as temperature and pH. Temperature and pH control development and virulence of different microorganisms such as archaea, bacteria, and fungi. Bacteria grow best at temperature and pH conditions that closely match the environmental conditions from which they were isolated. Bacteria are categorized based on their optimal temperature as mesophiles (20-45oC), thermophiles (>45oC), and psychrophiles (<20oC) and their optimal pH as neutrophiles (pH = 6.5 – 8.5), acidophiles (pH < 6.5), or alkaliophiles (pH > 8.5). Unknown bacteria, isolated from Winogradsky columns, were grown in varying temperature and pH conditions. In order to characterize the microbial growth based on temperature and pH, the optical densities of the microbes were obtained using a Thermo Spectronic Genesys 5 (336001) UV-Visible spectrophotometer. Based on the results, the bacterial isolates were characterized as mesophiles and either neutrophils or alkaliophiles.
Emily Johnston, Taryn Schweizer, Lassandra Morgan, & Sean Hunt  
**Mentor:** Dr. Varleisha Gibbs

*Introduction of 3D printing into Wesley College Pro Bono Clinic: An Emerging Practice Investigation*

In recent years, 3D printing has gained popularity within the healthcare field. However, very little research has been conducted in the field of occupational therapy. This study explores the application of 3D printing within the Wesley College Pro Bono Clinic and Masters of Occupational Therapy Program. An exploratory and qualitative research design is used and research is divided into two phases. Phase One utilizes a case study design to explore the effects of 3D printed assistive technology on caregiver burden through occupational therapy interventions. Once this phase is completed, researchers will provide an educational seminar on 3D printing to Wesley College Masters of Occupational Therapy students and faculty. Phase Two utilizes a phenomenological design with pre and post surveys to identify participants’ positions on the utilization of 3D printing within the field of occupational therapy.

Lilly Neff  
**Mentor:** Dr. Kevin Shuman

*Pigments Extracted from Winogradsky Columns Created with Samples from the St. Jones River System (Dover, DE)*

Winogradsky columns simulate microbial ecosystems composed of interacting species found in the environment while allowing for the study of different groups of microorganisms based on additive chemical conditions. Water and soil samples were collected from two sites along the St. Jones River System to create Winogradsky columns. Site one was stagnant water, whereas site two displayed constant flow through the area. Water samples were isolated from the Winogradsky columns. Pigments were filtered and extracted from the water samples of the Winogradsky columns using methanol extraction or direct placement of cells in the cuvette. The pigments were analyzed using a Shimadzu UV-1800 Spectrometer to determine the distribution of photosynthetic pigments within the water system. After fourteen weeks of growth, a large variety of coloration is observable in the Winogradsky columns including red, purple, rust orange, green, and white.

Emily Willis & India Whitehead  
**Mentor:** Dr. Dawnn Thomas

*Guatemalan Caregiver Training in an Orphanage for Children with Disabilities*

An educational program for paid caregivers in a Guatemalan orphanage was created, utilizing a qualitative, ethnographic study. This population was chosen since over 500,000 orphans in Guatemala are cared for by caregivers and international adoption is currently closed (The 8 million, n.d.). Kelly’s House, in Zacapa, Guatemala, is a home catering to orphaned children with disabilities. On average, caregivers in orphanages are responsible for up to 20 children (The 8 million, n.d.). At Kelly’s House, caregivers work 24-hour shifts, followed by 48 hours off. With this schedule, caregivers typically work two to three days a week, making it difficult for the children to form sufficient child-caregiver attachments. To gather data, caregivers were given pre- and post-questionnaires, and a handout with information regarding occupational therapy, caregiver stress, child-centered care, and positive child-caregiver attachments. The data collected showed 25 caregivers scored a mean of 9.45 in relation to how helpful the education was.
Alexa Hendrickson  
Mentors: Prof. Darla Davidson & Prof. Marian Passanante, Rutgers School of Public Health  

PHocus Sleep Health Evaluation  

Adequate sleep is a crucial determinant of health, development, and wellbeing. Adolescents may be getting less than the recommend amount of sleep due to caffeinated drinks, perceived tiredness, gender, location, grade level, and race. The purpose of the project is to examine the sleep patterns of PHocus participants and compare the data to results of prior research studies on this topic. PHocus (Public Health: Outbreaks, Communities, and Urban Studies) is a one-week public health summer camp for high school students hosted by Rutgers School of Public Health. PHocus high school students were requested to complete a sleep diary (approved by Rutgers IRB). The study design used is descriptive to give a simple analysis of adolescent sleep patterns. SAS 9.4 will be used to perform a univariate and bivariate analysis. The analysis of this data will provide a fuller picture of sleep habits among these high school students.

Kassandra Rodriguez, Anthony Calcutta, Bryce Haraldsen, & Allison Mills  
Mentor: Dr. Stephanie Stotts  

Nation-wide Comparison of Children (19-35 Months) Vaccinations from 2008 to 2014  

Vaccinations are an important part of keeping people, especially children, healthy and protected from serious diseases. Recently, there has been a growing “Anti-Vax” movement encouraging parents to opt out of vaccinations. The goal of this project was to determine if vaccination rates decreased between 2008 and 2014 in children 19 months to 35 months and to identify regional trends. Data was collected through the National Immunization Survey (NIS) for flu, measles, and TDaP. Using ArcGIS Pro, a map of changes in state wide immunization rates for the United States was generated for each of the vaccinations of interest. The maps were then visually interpreted to identify regional trends.

Katelyn Fry, Joseph Howard, & Katelyn Null  
Mentor: Dr. Kevin Shuman  

Effectiveness of Antibiotics on Growth of Bacterial Isolates from the St. Jones River (Dover, DE)  

Antibiotics have been historically effective in treating a wide range of bacterial diseases and infections. Over time, the rate of antibiotic resistance development has increased. Resistance has been occurring naturally for thousands of years as antibiotics are manufactured from bacteria and fungi in soil. Microorganisms can become resistant to multiple antibiotics and are thus known as multi-resistant organisms or MROs. These resistant bacteria exchange plasmids within soil environments which allow for more microbes to become resistant to antibiotics. Bacteria isolated from sediment from the St. Jones river (Dover, DE) were characterized for their abilities to grow in the presence of several antibiotics including: Ampicillin, Streptomycin, Tetracycline, Rifampin, and Chloramphenicol. Results show that Chloramphenicol and Tetracycline were the most effective antibiotics, as they displayed the largest zones of inhibition and were the only antibiotics to which all bacterial isolates were susceptible. Bacterial isolates were most resistant to ampicillin and rifampin.

Samantha Williams, Trevor Derr, Rebecca Dvorak, Kylie McCafferty, Paige Moore, & Samantha Fox  
Mentor: Prof. Darla Davidson  

Complimentary and Alternative Therapy Use During Labor and Delivery
A growing body of clinical evidence has suggested that complementary and alternative medicine (CAM) use during labor and delivery is associated with positive effects such as decreased use of epidural analgesia, decreased use of parenteral pain medications, and overall decreased patient perception of pain. Our research compiled data from five studies that focus on complementary and alternative therapies such as water immersion, aromatherapy, hypnobirthing, massage therapy, and acupuncture. These studies highlighted both how CAM therapies work on their own and in addition to standard pharmacological interventions. The study results explore how these therapies affect the birthing process and discuss the benefits, risks, and barriers in relation to the different CAM methods.

Lillian Ruth, Fabiola Rosa, Kayla Knox, and Helen Kunzweiler  
Mentor: Darla Davidson

*Imogene King: Theory of Goal Attainment*

The nursing process is a framework that is taught nationwide as a guideline for nursing practice. Throughout the years, various nursing theorists have adapted their own concepts of the nursing process to increase the depth of these precepts for nursing care. Imogene King developed the Theory of Goal Attainment in order to further discuss the importance of the nurse-patient relationship with the ability to attain specific goals. The Theory of Goal Attainment, along with other nursing theories, has allowed for nursing care today to be increasingly advanced. This project explored King’s contribution to nursing. The purpose of this project was to learn how King’s theory can be used to guide nursing practice as well as to educate fellow peers, faculty, and others within the nursing community on the impact of King’s work on the current and future generation of nurses.

**Session III: Oral Presentations**  
3:50-4:30 p.m.

**Panel 1: Cannon Hall 7**  
Moderator: Kristin Temple  
Assessor: Rebecca Schröding

*Alena Brown & Cassandra Dieter*  
Mentor: Dr. Kathleen Curran

*Looking for the Asian Long Horn Tick. A county by county distribution of three tick species, on White-Tailed Deer in Delaware.*

Haemaphysalis longicornis, the Asian long horned tick, is an exotic tick originally from Asia. In 2017 it was found in New Jersey, and has since spread to Maryland, Virginia, and other states as well. Biologists are trying to determine where these ticks occur, and what hosts they infest. During the fall hunting season in Delaware we examined harvested deer through hunters for the presence of this exotic tick. This presentation will discuss the biology of the ticks found at the check stations we visited in New Castle, Kent and Sussex counties. The three-tick species collected were; Amblyomma americanum, Ixodes scapularis, and Dermacentor variabilis. This study will talk about county distribution, and the distribution of ticks by host gender. Although we did not collect Haemaphysalis longicornis this past fall this presentation will aim to provide a better understanding of the potential impact this exotic pest may have in Delaware.

*Shelbi Hilling & Brittany Stokes*  
Mentor: Prof. Beth Roros
What are the Benefits of an Occupational Therapy Designed Intergenerational Program on At-Risk Youth and Older Adults in the Community?

This research seeks to determine the benefits of an occupational therapy designed intergenerational (IG) program, and the impact it can have on vulnerable populations. The participants include at-risk high school students from Communities in Schools of Delaware (CISDE) and older adults age 60+ residing in Sussex County, DE. The IG program is divided into eight, 40 minute sessions that focus on the promotion of resilience and connection among the two populations. A mixed method design will be used. The quantitative pre and post assessments administered to measure outcomes will be the Child and Youth Resilience Measure (CYRM) and the Quality of Life (QOL) scale for older adults, combined with observation and a qualitative unstructured interview at the end. We anticipate the development of resilience and other protective factors in the at-risk youth, while providing a sense of purpose or meaning for the adult ultimately increasing their quality of life.

Panel 2: Cannon Hall 110
Moderator: Dr. Yu Tian
Assessor: Katharine McKinney
Althea Mignone & Sarah Fryer
Mentor: Dr. Yu Tian

Instagram Influencers Impact

During the shift from traditional to digital marketing, a new medium has been introduced - Instagram Influencer. An Influencer is someone who has a large number of followers on a social media platform. This influence empowers him/her to reach the followers and advise them on what brands, styles, and ideas to invest in. Influencers have gained much leverage in the past five years. They help to connect companies with their targeted consumers in the digital age. Companies often send Influencers products/samples, invite them to vacations (all expenses paid, in many cases) or pay them to ‘consume’ their brands. Followers can witness the experiences or the journey. We analyze the benefits of utilizing Influencers and its negative impacts on conventional marketing functions. This research also showcases three Influencers with analytics of the products they have shown on Instagram.

James Hall
Mentor: Dr. Yu Tian

200 services, $2.1b/month in revenue—An analysis of video streaming industry

In recent years, we have witnessed the trend of ‘cord cutting’ and the spike of streaming services. Netflix spearheaded the industry with it vast collection of contents. But it’s first mover advantage is challenged by Youtube, Hulu and Amazon Prime Video. These four leading services compete fiercely on premium contents, live TV, sport events and original contents. In an effort to attract subscribers and generate more revenue, content providers are also launching their own services. Disney is developing ‘Disney Plus’ and withdrawing its content from Netflix and other services. All major TV networks now offer streaming of their exclusive contents with different tiers of fees. I study the position of these services and how they target potential subscribers with different entertainment preferences. This research addresses the power of real time digital marketing (observing, collecting, analyzing, segmenting, ‘pushing/pulling’) and the importance of studying consumer behavior over time to guide future content-strategies.
Panel 3: Slaybaugh Hall 104
Moderator: Charlisa Edelin
Assessor: Erin Perchiniak

Brianna Milliner
Mentor: Prof. Charlisa Edelin

The Effects of Fallibility of Memory on Eye Witness Testimony

Mistaken eyewitness identification contributed to about 70% out of more than 350 wrongful convictions in the United States. Eye witness testimonies have their downfall since they are susceptible to influences and biases. Those influences and biases can create false memories to form which are unreliable since they are not true. Cross-Racial Identification can also affect memory in the sense that individuals look at the wrong characteristics or cues when trying to identify another race. A well-known case would be Ronald Cotton and Jennifer Thompson as she accused him of rape and was positive that he was her perpetrator. Based on her testimony alone Ronald spent over 10 years in jail until he was exonerated by DNA evidence. Not all hope is lost for those who are wrongfully convicted thanks to the Innocence Project who not only freed Ronald Cotton but also freed around 361 other individuals who were wrongfully incarcerated.

Taylor Rehnolds
Mentor: Dr. Stephanie Holyfield

Abraham Draper Letters

A collection of American Civil War Letters written by Abraham Draper, a Sergeant in the 4th Delaware Volunteer Infantry. Abraham would enlist in April of 1861 to join the 1st Delaware, a 90-Day unit in the state used in large part for guard duty. When the three-months service ended, Abraham would wait out the winter of 1861-1862 and enlist in the 4th Delaware in the spring of 1862. The collection of letters are written to his wife, Anna Draper, who resided in Newark while Draper was away in the war. Unfortunately, Abraham would die of Typhoid Fever in January of 1863, and aside from the correspondence that was written between the Captain of his Company and his wife, no recollection is known as to where he is buried. The collection came up on eBay in December, and upon learning of it's sale, I raised $1500 on GoFundMe.com in two days to acquire the collection and donate it to the Delaware Public Archives. The Transcription of the letters is now my Honors Thesis.

Panel 4:  Canon 109
Moderator: Dr. Paul Olson
Assessor: Dr. Julie Fisher

Amara Hill
Mentor: Dr. Angela D’Antonio & Dr. James Wilson

Music, Memory, and Contentment

Music Therapy assists people deal with life problems, such as anxiety, depression, physical and mental illnesses, and memory loss. It can help a person heal emotionally, physically and mentally (Odell-Miller, 2016). Reminiscence Therapy with older adults involves discussion of past experiences and story-telling. It often employs senses such as touch and sound to elicit memories and emotions and increase a sense of well-being. It can help those with dementia remember people and events (Dempsey et al., 2012). Music and memory therapy used together is effective in treating memory illnesses. (Istvandity, 2017). Integrating life review and
experiences with music can also benefit older people in their everyday interactions with family members and caregivers by improving memory and increasing positive feelings (Zafra et al., 2018). In the present study, twelve elderly volunteers are interviewed over three sessions. They are asked about favorite songs from their youth and their feelings of contentment associated with the music they choose.

Justyn Cox & Raevyn Reader
Mentor: Dr. Cynthia Newton

Analysis of the 2018 Midterm Elections in Delaware

The 2018 midterm election saw a number of irregularities as it concerns turnout and other factors. To further understand why this may be the case one must analyze national and state data, along with collecting data to get a better understanding of the causes of the record turnout and participation.

<table>
<thead>
<tr>
<th>Session III: Poster Presentations</th>
</tr>
</thead>
<tbody>
<tr>
<td>3:50 – 4:30 p.m.</td>
</tr>
</tbody>
</table>

Location: College Center Portico (North Circle)

Shelley Mead
Mentor: Dr. Tamala Paxton

Risk Factors Contributing to Childhood Obesity and Its Long-term Effects: A Literature Review.

The purpose of this study is to conduct a literature review and evaluate the factors that contribute to childhood obesity, inadequate nutrition, and long-term effects of the conditions. A systematic review of the literature from January 2011 to November 2018 using the MEDLINE and CINAHL databases to examine factors contributing to childhood obesity and its effects on chronic illnesses such as hypertension was undertaken. It was found that the factors contributing to childhood obesity include the female gender, neighborhood safety, parent body mass index, nutritional status, physical activity, and depression. Long-term effects of obesity include hypertension, type two diabetes, and cardiovascular disease. Nurses should use the information presented to guide their practice and move beyond targeting only nutritional status to a discussion of fears, anxieties, patient questions, and goals; provision of dietary education in line with the patient’s socioeconomic status; and education of physical activity considering the patient’s available resources.

Cindy Guevera, Mikayla Tabb, Angela Smith, Mariah Gunn, & Chyna Foster
Mentor: Dr. Robert Contino & Prof. Dianitza Runser

Virginia Henderson

Virginia Henderson was born on November 30th, 1897, in Kansas City, Missouri. After her contributions as a nurse in World War I, and becoming a nursing educator, she proved to be a major nursing influence throughout all aspects of nursing. She shaped the views on patient care, health, environment, nursing education, and implementing new nursing strategies. She developed the Need Theory that stressed patient independence, a holistic view, and the importance of a nurse-patient relationships. She also devised her own fourteen components of patient health, which focuses on the patient’s basic human needs. A few examples include, respecting patient’s culture and spiritual faith, maintaining a supportive environment, and providing optimal
comfort. In nursing today, her ideas have helped change the setting in many health care practices, through her essential beliefs of integrating a strong nurse-patient bond.

**Sydney Hall**  
**Mentor: Dr. Stephanie Stotts**

*Superfund National Priority Sites of Delaware*

The Comprehensive Environmental Response, Compensation and Liability Act (CERCLA) was amended in 1980 by Congress in response to damaging practices regarding the disposal of hazardous waste and is otherwise known as superfund. The goal of the superfund program is to identify responsible parties, remediate contamination, and preserve human and environmental health for contaminated sites with known risk to human health. The goal of this project is to complete a spatial analysis of superfund sites in Delaware, including all sites that have been or are currently on the Superfund National Priorities List and examine the primary land use in the vicinity. Data for this project was downloaded from the State of Delaware and the Environmental Protection Agency. The results include a map of superfund sites in the state and a comprehensive list of the associated land use within a 0.5-mile radius of each site which will bring awareness to environmental threats.

**Kailin Clark**  
**Mentor: Dr. Albee Mendoza**

*Commuters vs. Residents: Advantages, Disadvantages, Challenges, and Support Systems*

College students may choose to live on campus (i.e., resident) or off campus (i.e., commuter). It is often believed that residents are more involved with professors, with peers, and with campus activities. The main purpose of this presentation is to describe a research study which determined differences between resident and commuter students among a number of variables including living situation, work hours, GPA, and grit. There were three groups: (1) students who live off campus without family, (2) students who live off campus with family, and (3) students who live on campus. Through statistical analysis of variables in an existing data set, several interesting findings were noted (e.g., there was a significant difference in work hours amongst the three groups). This presentation will discuss the perceived and actual differences between resident vs. commuter students, procedures of the study, implications of the study’s findings, and future directions for research.

**Teaghan Vogelsang, Christian Rodriguez, Logan Minner, Quininishia Jervey, & Aditya Bajaj**  
**Mentor: Dr. Kathleen Curran**

*Nest Predation in Birds: Nest Distribution*

Bird nests are common targets for predators to consume eggs and nestlings. This issue has many scientists and wildlife managers concerned. These actions have effects on birds’ fitness and reproductive success. To test the predation rates, we are creating artificial nests and eggs. For this study, a total of 20 nests will be placed 10 meters apart to be used between two trials. Trial one will consist of eggs in nests that are placed singularly on trees and ground while the second trial will have eggs placed in groups on trees and ground. Furthermore, both trials will be conducted for one whole week with results collected at the end of the week. Therefore, it is predicted that the nests on the ground that are singularly placed will be disturbed more than the nests singularly placed in trees and those in groups on both the ground and in trees.
**Female Choice and the Rare Male Effect of Drosophila Melanogaster**

Fruit flies are a model organism used to help scientists understand biological processes. Sexual selection is an individual’s ability to choose mates. Mate choice is the ability of individuals to discriminate differences between prospective mates and choose accordingly. Variability in a population is maintained when the female is attracted to a male with a rare phenotype. Each set up will consist of two females placed in two separate culture vials. In the first vial, eight ebony and two wild-type males will be placed with the female. In the second vial, eight wild-type and two ebony males will be placed with the female. The vials will be observed for copulation, and observations validated by counting the offspring. The female fruit fly should copulate more frequently with the two males in the vial demonstrating the rare phenotype. Results will be analyzed to determine if male mating frequency is proportional to male abundance.

**Jenna Baratta, Christian Klumpp, & Suzanne Reynolds**

**Mentor:** Dr. Varleisha Gibbs

**Food Protein-Induced Enterocolitis Syndrome and Its Relationship to Sensory Deficits**

This study will use an exploratory research design to identify the direct correlation between children with a diagnosis of Food Protein-Induced Enterocolitis Syndrome (FPIES) and sensory deficits. Currently, no literature exists examining the relationship between the two. Researchers will use triangulation through conducting surveys, leading a focus group, and play-based observation to generate qualitative data. Variables include specific sensory behaviors exhibited by children with a diagnosis of FPIES, focus group responses, and other observations during the play group. Once data is collected, researchers will use this information to inform further treatment and develop a vision for occupational therapy’s role in facilitating greater occupational performance for this population.

**Cristina Costanza, Sara Wixson, & Victoria Restrepo**

**Mentor:** Dr. Varleisha Gibbs

**“Gibb’s Self Regulation and Mindfulness for Children Exposed to Trauma”**

Children exposed to trauma may present with negative behaviors in response to the inability to cope with emotions. The Gibb’s Self-Regulation and Mindfulness (SAM) program will be implemented in 30 minute group sessions to provide children with strategies to identify emotions to improve performance in the classroom. The Gibb’s SAM program provides lessons to teach children about their brain and body to build skills to self-regulate. The program will take place at High Road School, which is a special education program aimed at strengthening each student’s academic skills and emotional abilities. Sessions will focus on self-regulation and mindfulness activities for the children based on the Gibb's SAM program. The sessions will include occupation based and mindful activities, such as cooking, tabletop, and preparatory respiratory tasks provided in the Gibb's SAM manual. Outcomes of the program will be measured by a teacher’s questionnaire regarding the child’s performance.
Julianna Neel  
Mentor: Dr. Derald Wentzien  

Suicide in Correlation with Demographic Information

The purpose of this project will be to analyze the relation between suicide rates and demographic information. I will be analyzing suicide rates in all 50 states and the District of Columbia, ranging from the years 1999 to 2017, as well as the average household income from the same dates, my data was retrieved from the Centers for Disease Control and Prevention and the Census Bureau. In addition, I will also look at Delaware’s data in contrast to the rest of the 49 states and the District of Columbia. I will be using SAS to analyze my data as well as to construct a correlation to find if wealth or lack thereof, is connected either directly or indirectly to suicide rates in the United States.

Janae Jones – See Addendum  
Dr. Derald Wentzien

How Have Hate Crimes Driven by Race and Sexual Orientation in America Changed Over the Past 10 Years?

The Federal Bureau of Investigation defines a hate crime (also known as a bias crime) is a criminal offense committed against a person, property, or society that is motivated, in whole or in part by the offender’s bias against a race, religion, disability, sexual orientation, or ethnicity/national origin. This is the difference between a hate crime and any other crime. My research will be gathered from across the entire country. I want to learn how hate crimes have changed over the past 10 years and my research will focus on the crimes committed based on race and sexual orientation. My data only allows me to analyze hate crimes from 2007-2017. By studying the entire United States, I have a better chance of recognizing change or lack thereof. My research will compare the number of incidents, victims, and known offenders year by year to make any increase or decrease obvious. See addendum for change of time.

Aleya Cummings  
Dr. Derald Wentzien

Number of Children Receiving Measles Vaccination vs. Number of Cases of Measles Per Year

Measles was considered eliminated in the United States between the years 2000 and 2011, but over the past few years the disease has resurfaced in the United States due to parents not vaccinating their children. Taking notice to this trend, this project will analyze the correlation between the number of children being vaccinated for measles and the number of measles cases found in the Northeast Region of the United States from the years 2012-2018. The data for this project will be downloaded from the Centers for Disease Control and Prevention (CDC). Using Excel and SAS programming, graphs and correlation tables for each of these years and states will be generated, and then compared to National rates. The results will hopefully convince parents in the Wesley College area to become more informed and vaccinate their children.

April Mahoney  
Mentor: Dr. Gwen Pursell

Sudden Parental Loss in Childhood: Traumatic Response, Developmental Outcomes & Therapeutic Techniques

In today’s society, trauma is not an uncommon experience for children and adolescents. Traumatic experiences can take many forms such as exposure to natural disasters, abuse, community violence, conflict in the family, and parental hospitalization. One of the most devastating and traumatic experiences a child can have is the death
of a parent. According to national grief statistics, one out of every 20 children, age 15 or younger will lose one or both parents (Owens, 2008). This project will explore different aspects of parental loss, protective factors, and risk factors associated with traumatic response, specifically, PTSD. Immediate and long-term consequences of trauma will be discussed. Research suggests that long-term outcomes may be far reaching including difficulties with academic/career planning, maintaining employment, peer difficulties, depression, anxiety, and low self-esteem. (Brent et al., 2012). Finally, treatment options will be presented with an emphasis on trauma-focused cognitive behavior therapy.

Amalia Hartman, Gabriella Minelli, Michelle Mandak, & Ashley Craig
Mentor: Prof. Marcella Legath

Congestive Heart Failure: Occupational Therapy’s Interprofessional Collaboration Towards Healthier Hearts

Congestive Heart Failure (CHF): Occupational Therapy’s Interprofessional Collaboration Towards Healthier Heart is a quantitative study utilizing a convenience sample of patients with CHF, who are admitted at BayHealth Hospital, Sussex Campus in March 2019. No more than fifty participants are involved in this study, which is comprised of two treatment sessions. The first treatment session includes client and family education on CHF guidelines, energy conservation strategies and general kitchen safety techniques. The second session will consist of the guided participation with the client in meal preparation, with education on nutritional substitutes and kitchen reorganization techniques. Two outcomes are measured to determine the impact of the holistic treatment approach, which include rates of readmission within thirty days of hospital discharge and Diet Self-Efficacy Scale (DIET-SE) score. It is hypothesized that the study will show higher DIET-SE scores and subsequently decreased admissions for patients with CHF, which will elicit decreased hospital costs.

Katelyn Fry & Cassandra Miller
Mentor: Dr. William Kroen

Developing and Assessing an Environmental-Testing Based Education Module to Promote the Scientific Process

In today’s rapidly-evolving career climate, there is an increased need to foster student understanding and appreciation of the scientific method, as well as the higher-order cognitive skills that accompany this process. By partnering with ANP Technologies, a Delaware company that produces products relating to environmental monitoring, I developed a classroom-ready educational module around the NIDS ACE Rapid Pesticide Test. This module uses a sequence that prompts students to engage, explore, explain, and evaluate while meeting various concepts within the Next Generation Science Standards. It combines written handouts that define and describe pesticides, captivating video resources, and lab instructions to guide students in the development in their own experiments using the ANP product. To assess the success of the module on student learning, pre- and post-tests, which combine experimental design prompts and multiple-choice questions, have been developed, administered, and analyzed.

Kirklin Mitchell
Mentor: Prof. MaryAnn Yaeger – Delaware Technical Community College

Measuring the Efficacy of Essential Oils on Inhibiting Microbial Growth

There has been a rise in groups of people that are wary of modern medicine and have taken to homeopathic remedies for management of illnesses. One such set of homeopathic remedies is that of essential oils; volatile chemical compounds extracted from plants. Attempting to treat bacterial infections with essential oils could be dangerous to public health as they are not yet proven effective, possibly increasing opportunities for pathogens
to spread. The experiment will test how well various essential oils act as antimicrobial agents against bacteria and yeast. This will be done via a disk-diffusion technique on a Mueller Hinton Agar, analyzing zones of inhibition to determine the inhibition each oil exhibits. The results of the procedure will show if these essential oils can effectively act as antibiotic agents. Ideally the results will inform those relying on essential oils as antibiotics consider how effective they are compared to modern medicines.

Amarillis Velez  
Mentor: Prof. MaryAnn Yaeger – Delaware Technical Community College

Evaluating Benefits and Drawbacks of Various Diets

Over two out of every three Americans are either obese or overweight. (Center for Disease Control, 2017) This is a huge problem that Americans face. Americans spend an average of 60 billion dollars every year on different dieting plans, techniques, and products. (Robert Wood Johnson Foundation, 2018) This number does not include the cost of health that care many Americans face due to diseases related to malnutrition. Diet and nutrition greatly influence health. This project will examine and compare various diets and diet tools, like the vegan, vegetarian, ketogenic, My Plate, and the average American diet, and evaluate their pros and cons.

Jontae Hankins & Anthony Anastasi
Mentors: Dr. Ryan Hubble & Dr. Amy Strickland

Student Athletes and Mental Health: An Exploration of Future Hurdles to Student Prosperity

Mental health is a significant factor for the development and performance of student athletes. Specifically, depression is a unique aspect of mental health that could affect athletic performance. This is an important topic to discuss because student athletes could be affected by depression. The significance of this research is to examine the prevalence of depression in student athletes based on the current literature. A systematic review will be conducted to assess the prevalence of depression in student athletes based on the current literature. Pubmed and EBSCOHost will be the primary databases used for article acquisition.

Dana Van De Vaarst & Leah Snyder  
Prof. Dawnn Thomas

Caregiver Burden Across the Globe: Does Culture Influence Burden?

Caregiver burden is stress experienced by caregivers, brought on by the challenges of caring for those with physical, mental or age related disabilities (Jaisri, 2014). Occupational therapists work with caregivers by providing client-centered strategies to make caregiving easier. The researchers of this study recently traveled to Kenya to observe how caregiver burden is manifested in comparison to observances in the United States. This led to the hypothesis that culture influences caregiver burden. This study, a survey design, aims to determine the most frequent causes of caregiver burden across a variety of cultures. Students and faculty from Wesley College will voluntarily and anonymously answer questions pertaining to personal and observed symptoms of burden, location where burden was noted, and main factors believed to contribute to burden. This research will educate the public on the critical needs of caregivers and how occupational therapy can address caregiver burden.
Amara Hill & Jasmin Evans  
Mentor: Dr. Gwen Pursell

*The Role of Body Image and Self-Esteem in Risky Sexual Behavior and Romantic Relationships Among College Students*

It is well-known that many young women suffer from negative body image, body dissatisfaction and in turn, low self-esteem. Past research suggests that low self-esteem is associated with risky sexual behavior whereas body dissatisfaction and negative body image contribute to either risky sexual behavior or sexual avoidance. To date, less is known about how these negative perceptions and behaviors impact the quality of romantic relationships (e.g., trust, commitment and intimacy). Additionally, few studies have considered associations between men’s body perceptions, risky sexual behavior, and romantic relationships. It is hypothesized that women who have high self-esteem and negative body perceptions will engage in sexual avoidance whereas women with low self-esteem and negative body perceptions will engage in risky sexual behavior. Exploratory analyses will consider gender differences. Approximately 25 college students will be asked to complete questionnaires pertaining to body image, risk-taking, and romantic relationships. Results and implications will be discussed.

Destynee Roberts & Ayowuumi Kuforiji  
Mentor: Dr. Mary Jenson

*The History of Psychology and the Law: Segregation and Psychology*

This poster will examine two influential women in the history of psychology; specifically pertaining to the issue of segregation. These women are Inez Prosser and Mamie Phipps Clark. While their studies shared similar results regarding African American children in education, their views on segregation differed in that Inez Prosser believed that African American children would benefit from segregation as opposed to Clark whose research was used to support desegregation.

Lilly Neff  
Mentor: Dr. Malcolm D’Souza

*Undergraduate Research and Volunteer Projects Inform and Accelerate the Wesley STEM Programs Decision-making Processes*

To enhance a truly integrated STEM curriculum, Wesley College strengthened diverse academic equity by implanting data-science as cornerstone undergraduate research projects. To increase student-engagement and disseminate our high-impact STEM-education successes, an Undergraduate Research Center for Analytics, Talent, and Success was developed. To engage the community, STEM undergraduates established a Science Club to demonstrate hands-on science experiments. To explain the learning mechanisms in which integrated STEM experiences support outcomes, this poster emphasizes curriculum design for incoming STEM freshmen who place into Pre-Calculus math or lower. To show that engagement with STEM college students as role models have a positive impact on high-school student interest, we provide examples where Science Club members pose challenges and show different perspectives on everyday items. Furthermore, to streamline laboratory documentation and hazardous-waste workflows, an online platform was implemented resulting in major savings. In summary, Wesley project outcomes allow for coordinated interventions in student well-being and success.
De’Mari Barnett  
Mentor: Dr. Albee Mendoza

Positive Psychological Aspects of Gaming

Do you play video games? Are you a gamer? Are you tired of hearing that all video games lead to negative outcomes (e.g., violence and aggression)? The purpose of this presentation is to build awareness of positive psychological aspects of gaming. With evidence from scholarly, peer-reviewed articles, it was found that there are motivational (e.g., develop persistence), social (e.g., enhance relationships), cognitive (e.g., increase literacy), and emotional (e.g., improve mood) benefits of video games. This presentation will (1) explain different types of video games, (2) define four benefits of gaming, (3) identify specific populations of gamers, and (4) discuss the process in which these benefits occur.

Anna Kuegler  
Mentor: Eileen Scanlon

What is the perceived professional identity of recently graduated and current occupational therapy students following the curriculum of a newly accredited Master’s of Occupational Therapy program?

Occupational therapy (OT), works with individuals of all ages and varying diagnoses to participate in meaningful activities. Historically, OT struggled to establish a definitive scope and definition, leading to role ambiguity. While the profession continues to strengthen, there are regions that remain underrepresented, specifically Delaware. This study aims to explore the perception of professional identity in recently graduated and current OT students enrolled in the only Master’s of OT program in Delaware. To capture the student’s perception, guided by the self efficacy theory, three cohorts from Wesley’s Master’s of OT program will be assessed, utilizing the Professional Self Identity Questionnaire (PSIQ) to determine differences in professional identity throughout program progression. The PSIQ measures curricular features that contribute to development of self identity by assessing three factors: profession specific task, generic attributes, and interpersonal task. Findings will indicate the perception of professional identity in current roles as OT practitioners from Wesley.

Closing Ceremonies  
5:30-6:00 p.m.  
College Center 206
Mentors, Presenters, Moderators, Assessors, Committee Members, ETC.

Mentors

Mentors with asterisks * beside their names are five-star mentors. Five-star mentors are current mentors who have mentored students in undergraduate research for five or more Scholars-Day years. Some of them are actually ten-star mentor-generals who have mentored for ten or more Scholars-Day years.

Archambault, Danielle – p. 21
Barnhardt, Jack – p. 13
Bunyaratavej, Kraiwinee – p. 6, 7
Chichester, Melanie – p. 11
Contino, Robert – p. 12, 28
Craig, Brantley – p. 7
Curran, Kathleen* – p. 11, 13, 14, 25, 29, 30, Addendum
D’Antonio, Angela – p. 27
Davidson, Darla* – p. 9, 24, 25
Douglas, Ron – p. 15
D’Souza, Malcolm* – p. 10, 14, 15, 21, 34
Edelin, Charlisa – p. 13, 18, 27
Gibbs, Varleisha – p. 23, 30
Holyfield, Stephanie – p. 7, 27
Hubble, Ryan – p. 33
Jenson, Mary – p. 10, 34
Kroen, William – p. 32
Laganella, David* – p. 19
Legath, Marcella – p. 8, 9, 12, 32
Matts, Mark – p. 10
McElligott, Margaret – p. 8
Mench, Jerry – p. 6, 8
Mendoza, Albee – p. 29, 35
Neal, Kathleen – p. 11
Newton, Cynthia* – p. 28
Nwogbaga, Agashi* – p. 18
Passanante, Marian – p. 24
Paxton, Tamala – p. 28
Pongsree, Oak – p. 17
Pursell, Gwen – p. 14, 31, 34
Roros, Beth – p. 25
Runser, Dianita – p. 8, 20, 28
Scanlon, Eileen – p. 13, 35
Shuman, Kevin – p. 22, 23, 24
Stotts, Stephani* – p. 9, 16, 20, 21, 22, 24, 29
Strickland, Amy – p. 33
Thomas, Dawnn – p. 23, 33
Tian, Yu* – p. 17, 26
Urbanas, Alban – p. 6, 16
Wentzien, Derald* – p. 19, 20, 31, Addendum
Wilson, James* – p. 27
Yeager, MaryAnn – p. 32

Mentors

Mentors with asterisks * beside their names are five-star mentors. Five-star mentors are current mentors who have mentored students in undergraduate research for five or more Scholars-Day years. Some of them are actually ten-star mentor-generals who have mentored for ten or more Scholars-Day years.

Archambault, Danielle – p. 21
Barnhardt, Jack – p. 13
Bunyaratavej, Kraiwinee – p. 6, 7
Chichester, Melanie – p. 11
Contino, Robert – p. 12, 28
Craig, Brantley – p. 7
Curran, Kathleen* – p. 11, 13, 14, 25, 29, 30, Addendum
D’Antonio, Angela – p. 27
Davidson, Darla* – p. 9, 24, 25
Douglas, Ron – p. 15
D’Souza, Malcolm* – p. 10, 14, 15, 21, 34
Edelin, Charlisa – p. 13, 18, 27
Gibbs, Varleisha – p. 23, 30
Holyfield, Stephanie – p. 7, 27
Hubble, Ryan – p. 33
Jenson, Mary – p. 10, 34
Kroen, William – p. 32
Laganella, David* – p. 19
Legath, Marcella – p. 8, 9, 12, 32
Matts, Mark – p. 10
McElligott, Margaret – p. 8
Mench, Jerry – p. 6, 8
Mendoza, Albee – p. 29, 35
Neal, Kathleen – p. 11
Newton, Cynthia* – p. 28
Nwogbaga, Agashi* – p. 18
Passanante, Marian – p. 24
Paxton, Tamala – p. 28
Pongsree, Oak – p. 17
Pursell, Gwen – p. 14, 31, 34
Roros, Beth – p. 25
Runser, Dianita – p. 8, 20, 28
Scanlon, Eileen – p. 13, 35
Shuman, Kevin – p. 22, 23, 24
Stotts, Stephani* – p. 9, 16, 20, 21, 22, 24, 29
Strickland, Amy – p. 33
Thomas, Dawnn – p. 23, 33
Tian, Yu* – p. 17, 26
Urbanas, Alban – p. 6, 16
Wentzien, Derald* – p. 19, 20, 31, Addendum
Wilson, James* – p. 27
Yeager, MaryAnn – p. 32

Presenters

Agyeman, Lisa - Addendum
Alsogaih, Nahlah – p. 18
Anastasi, Anthony – p. 33, Addendum
Bailey, Markland – p. 33
Bajaj, Aditya – p. 22, 29
Baratta, Jenna – p. 30
Barnett, De’Mari – p. 35
Bazil, Rochelle – p. 9
Behorner, Jessica – p. 11
Bland, Khadijah – p. 15, 20, Addendum
Botsch, Sydney – p. 9
Brown, Alena – p. 14, 25
Buckworth, Zoe – p. 11
Byler, Abigail - Addendum
Calcutta, Anthony – p. 20, 24
Chege, Rex – p. 12
Cianfrini, Albert – p. 12
Clark, Kailin – p. 29
Clifford, Caelli – p. 12
Correia, Colin – p. 18
Costanza, Cristina – p. 30
Cox, Justyn – p. 28
Craig, Ashley – p. 32
Cummings, Aleya – p. 20, 31
Dawson, William - Addendum
Delawder, Megan – p. 6, 18, Addendum
Deputy, Amanda – p. 11
Derr, Trevor – p. 8, 24
Dieter, Kassandra – p. 25
Dina, Matt – p. 22
Dukes, Jessica – p. 9
DVorak, Rebecca – p. 24
Enge, Lily - Addendum
Etkins, Emily – p. 9
Evans, Jasmin – p. 14, 34
Fingles, Joe – p. 6
Foster, Chyna – p. 28
Fox, Samantha – p. 24

Presenters

Agyeman, Lisa - Addendum
Alsogaih, Nahlah – p. 18
Anastasi, Anthony – p. 33, Addendum
Bailey, Markland – p. 33
Bajaj, Aditya – p. 22, 29
Baratta, Jenna – p. 30
Barnett, De’Mari – p. 35
Bazil, Rochelle – p. 9
Behorner, Jessica – p. 11
Bland, Khadijah – p. 15, 20, Addendum
Botsch, Sydney – p. 9
Brown, Alena – p. 14, 25
Buckworth, Zoe – p. 11
Byler, Abigail - Addendum
Calcutta, Anthony – p. 20, 24
Chege, Rex – p. 12
Cianfrini, Albert – p. 12
Clark, Kailin – p. 29
Clifford, Caelli – p. 12

Page 36 of 41
Frangia, Anna – p. 8
Francois, Alexandra Jean – p. 11, 22, 30
Fry, Katelynn – p. 13, 24, 32
Fryer, Sarah – p. 6, 26
Galeotafiore, Gianna – p. 12
Glidden, Katie – p. 20
Graves, Erin – p. 11
Grider, Cole – p. 19
Griffith, James – p. 17
Grosstephan, Michael – p. 16
Gruwell, Jenna – p. 21
Gun, Mariah – p. 28
Hall, James – p. 26
Hankins, Jontae – p. 33
Haraldson, Bryce – p. 24
Harman, Rachel – p. 9
Harris-Winbush, Daquay – p. 13
Harrison, Lexus – p. 30
Hartman, Amalia – p. 32
Heinicke, Kayla – p. 14
Hendrickson, Alexa – p. 11, 24
Henderson, Jalissa – p. 17
Herrera, Rebecca – p. 18
Hill, Amara – p. 14, 27, 34
Hilling, Shelby – p. 25
Hollman, Kalani – p. 14
Holman, Tymira – p. 13
Howard, Joseph – p. 24
Hughes, Joshua – p. 11, 19
Hunt, Sean – p. 23
Jervey, Quinnishia – p. 29
Johnston, Emily – p. 23
Johnson, Megan – p. 11
Jones, Janae – Addendum
King, David – p. 6
King, Katherine – p. 13
Klabe, Alyssa - Addendum
Klumpp, Christian – p. 30
Knox, Kayla – p. 25
Kuegler, Anna – p. 35
Kuforiji, Ayowuumi – p. 34
Kunzweiler, Helen – p. 25
Lankford, Kylea – p. 10, 13
Legros, Eduine – p. 18
Lonski, Austin – p. 14, 22, Addendum
Loukopoulous, Dori – p. 11
Love, Jahni – p. 11
Love, Savanah – p. 22
Lyssikatos, Eleni – p. 12
Mahoney, April – p. 31
Mandak, Michelle – p. 32
Martinez, Elizabeth – p. 15
Mahmoud, Osama – p. 22, Addendum
May, Dominique – p. 8
McCafferty, Kylie – p. 24
McCoy, Shannon – p. 9
McHenry, Christine – p. 7
Mead, Shelley – p. 28
Meza, Alexandre – p. 8
Mignone, Althea – p. 26
Miller, Cassandra – p. 21, 32
Milliner, Brianna – p. 27
Mills, Allison – p. 24
Minelli, Gabriella – p. 32
Minner, Logan – p. 22, 29
Mitchell, Kirklin – p. 32
Mitzel, Ben – p. 6
Moore, Paige – p. 24
Moore, Phillip – p. 17
Morgan, Lassandra – p. 23
Neel, Juliana – p. 30
Neff, Lilly – p. 23, 30, 34
Nelson, Aaron – p. 12
Null, Katelyn – p. 24, Addendum
Onate, Cynthia – p. 8
Owusu-Mensah, Caitlin – p. 14, 18
Payne, Mariah – p. 21
Piper, Rachel – p. 15, 20
Pipersburgh, Michelle – p. 9
Poole, James – p. 7
Purcell, Eileen – p. 13
Reader, Raevyn – p. 28
Rehholds, Taylor – p. 27
Restrepo, Victoria – p. 30
Reynolds, Suzanne – p. 30
Roberts, Destyniee – p. 34
Roberts, Maryssa – p. 12
Rodriguez, Christian – p. 29
Rodriguez, Cassandra – p. 24
Roe, Christine – p. 14
Rosa, Fabiola – p. 25
Ruth, Lillian – p. 25
Ryan, Kayla – p. 12
Sacco, Veronica – p. 30
Sampogna, Francesca – p. 30
Sanlemente, Sadie - Addendum
Satterfield, Alexis – p. 11
Schweizer, Taryn – p. 23
Short, Joshua – p. 10
Simet, Cody – p. 14
Siminari, Madison – p. 13
Simmons, Joseph – p. 8
Smith, Angela – p. 28
SN100 Students – p. 15
Snyder, Leah – p. 33
Stevens, Jordan – p. 12
Stokes, Brittany – P. 25
Tabb, Mikayla – p. 28
Thompson, Sameera – p. 11
Tolerico, Michael – p. 8
Truong, Maria – p. 9
Uyebi, Omasan – p. 21, Addendum
Van De Vaart, Dana – p. 33
Velez, Amarillis – p. 33

Faculty and Staff Volunteers
Archambault, Danielle
Barnhardt, Jack
Contino, Robert
Cooney-Newton, Karin
Craig, Brantley
Douglas, Ron
Edelin, Charlisa
Fisher, Julie
Hawkley, Ethan
Kroen, William
McKinney, Katharine
Mench, Jerry
Mendoza, Albee
Nwogbaga, Agashi
Olson, Paul
Paxton, Tamala
Perchiniak, Erin
Pursell, Gwen
Schroding, Rebecca
Stotts, Stephanie
Temple, Kristin
Tian, Yu
Urbanas, Alban

Student Volunteers
Adams, Kaitlyn
Arthur, William
Bailey, Sarah
Bolden, Rachel
Colagiovanni, Carmella
Crowley, Keshia
DiRocco, Sheila
Dromgoole, Molly
Dupree, Jordyn
Ferrell, Cassandra
Ferry, Kylie
Gibbs, Amil
Gross, Sharron
Halstead, Sharee
Holsinger, Danielle
Hulick, Nicole
Ironkwe, Grace
Johnson, Joseph
Johnson, Nhi-jee
Jones, Samantha
Knot, Sidney
McCarthy, Siah
Mikhail, Ilyasov
Miles, Precious
Mitchell, Jacob
Mullins, Katelyn
Olivieri, Alyssa

Special Thanks
President Bob Clark II
Dr. Jeffrey Gibson
Dr. Malcolm D’Souza
April Mahoney
Tina Heesh-Mosley
Emily Wood
Christine McDermott
O’Sullivan, Lauren
Padgett, Courtney
Palmer, Kelly
Primrose, Pteris
Smallwood-Corcoran, Savanna
Smith, Breanne
Taylor, Chiara
Thomas, Shannon
Tilley, Justice
Torres-Landeros, Aisli
Weems, Haneefa
White, Deonika
Williamson, Trinity

Naomi Wakiaga
Da’Shalyn Barnes
Gregory Clark
Naomi Wakiago
Information Technology
Facility Management
Department of Public Safety
Special Thanks to Past Years’ Members of Scholars Day Committee who blazed the trail for us.

**Scholars Day 2007** (April 11, 2007).
*This was the first Scholars Day. It was in the academic Year 2006-2007.*

**Scholars Day Task Force Members:**
- Dr. Bruce Allison (Co-Chair)
- Dr. Jeffrey Gibson (Co-Chair)
- Dr. Jessica James
- Dr. Karen Panunto
- Dr. H. Earl Roberts

**Scholars Day 2008** (April 2, 2008).
- Dr. Jeffrey Gibson (Chair)
- Dr. Jack Barnhardt
- Dr. Frank Fiedler
- Dr. Jessica James
- Dr. Karen Panunto
- Dr. H. Earl Roberts
- Dr. Jamie Whitman-Smithe

**Scholars Day 2009** (April 15, 2009).
- Dr. Jack Barnhardt (Chair)
- Dr. Keka Biswas
- Dr. Frank Fiedler
- Dr. Jessica James
- Dr. Karen Panunto

**Scholars Day 2010** (April 14, 2010).
- Dr. Jack Barnhardt (Chair)
- Dr. Keka Biswas
- Dr. Kraiwinee (Nok) Bunyaratavej
- Dr. Linda De Roche
- Dr. Frank Fiedler
- Dr. Tery Griffin

**Scholars Day 2011** (April 13, 2011).
- Prof. Susan Bobby
- Dr. Angela D’Antonio
- Dr. Lynn Everett
- Dr. Frank Fiedler (Chair)
- Dr. Tery Griffin
- Dr. Ying Zhang

**Scholars Day 2012** (April 12, 2012).
- Dr. Angela D’Antonio
- Dr. Lynn Everett
- Dr. Frank Fiedler (Chair)
- Dr. Kathleen Jacobs
- Dr. Richard Kashmar
- Dr. Alban Urbanas

**Scholars Day 2013** (April 18, 2013).
- Dr. Kathleen Curran
- Dr. Richard Kashmar
- Prof. Elizabeth Marchioni
- Prof. Jerry Mench
- Dr. Valerie Perez
- Dr. Alban Urbanas (Chair)

**Scholars Day 2014** (April 15, 2014).
- Dr. Valerie Perez (Co-Chair)
- Prof. Elizabeth Marchioni (Co-Chair)
- Dr. Kraiwinee Bunyaratavej
- Dr. Kathleen Curran
- Prof. Jerry Mench
- Dr. Derald Wentzien

**Scholars Day 2015** (April 16, 2015).
- Dr. Kraiwinee (Nok) Bunyaratavej (Co-Chair)
- Dr. Derald Wentzien (Co-Chair)
- Dr. Brantley Craig
- Dr. Stephanie Stotts
- Prof. Margie McElligot
- Prof. Zachary Adams

**Scholars Day 2016** (April 14, 2016).
- Dr. Brantley Craig (Chair)
- Prof. Charlisa Edelin
- Prof. Sarah Hardesty
- Prof. Margie McElligot
- Dr. Gwen Pursell
- Dr. Stephanie Stotts

**Scholars Day 2017** (April 12, 2017).
- Dr. Agashi Nwogbaga (Chair)
- Dr. Yu Tian
- Dr. Albee Mendoza

**Scholars Day 2018** (April 19, 2018).
- Dr. Agashi Nwogbaga (Chair)
- Dr. Yu Tian
- Dr. Albee Mendoza
Scholars Day 2019 Committee

Dr. KellyAnn Miller
Dr. Dawnn Thomas
Dr. Oak Pongsree
Dr. Sharon Wong
Prof. Darla Davidson
Dr. Eileen Scanlon
Scholars Day is sponsored in part by the following grants as well as funds from the Wesley College Student Government Association.

Delaware INBRE
Delaware’s Biomedical Research Catalyst • de-inbre.org

Delaware EPSCoR

PROJECT WICCED
WATER in the CHANGING COASTAL ENVIRONMENT of DELAWARE

Wesley COLLEGE
Great Things Await