

24-25 Impact Award Recipients

Student awardee: Tea Costello

Faculty name: Dr. Catherine Horta-Hayden

Project abstract: This project will identify the key characteristics of contemporary ballet in the professional dance world which I will then investigate and implement through my own artistic contemporary ballet piece. I will use the information I gain through research and personal embodied experience attending contemporary ballet summer intensives to create choreography. I will integrate these new ways of moving in the contemporary ballet style to be presented at the Towson Dance Department Senior Seminar Fall and Spring Concerts. The field of contemporary ballet is fairly new; therefore, there is minimal research on what classifies a dance as contemporary ballet versus classical ballet. My original choreography will apply the key elements of contemporary ballet with new applications and understandings in the creative process. In contrast to classical ballet, contemporary ballet explores a more collaborative process with the artists and incorporates different shapes and forms. Contemporary ballet is an umbrella term that continues to expand. I will be combining my classical training with research and contemporary experiences to create original choreography to represent my personal artistic expression.

Student awardee: Nicole Golemboski

Faculty name: Dr. Alison Rios Millett McCartney

Project abstract: Migration has emerged one of the largest issues currently facing international politics within our increasingly globalized society because it has exposed a wide array of political, legal, economic, cultural, and political barriers to safe movement. As migration increases, so too does the scope of the actors tasked with managing such barriers and upholding the human rights and safety of migrants, especially since migrants are distributed unevenly across and within countries. This uneven distribution that creates higher migrant-stock concentrations in the U.S. and in its urban areas, making already strained municipal governments the first responders to the needs of migrants and resulting in a wide range of responses that vary by localized context. This research will compare the nature of migration issues as they manifest in the greater Baltimore and Philadelphia communities to identify areas in which local organizations succeed in navigating challenges to human mobility, as well as expose those areas in which protection gaps persist. Revealing trends in the efficacy of local migration management will then allow for the revelation of short-term and long-term solutions that could best guarantee the human security of local communities and their immigrants.

Student awardee: Kay Walter

Faculty name: Dr. William Bologna

Project abstract: Millions of Americans experience hearing loss which impacts their ability to hear speech in

noisy social settings and contributes to a poor quality of life. Existing literature has identified energetic and informational masking as contributors to poor speech recognition in noise. A listener's physical position in a space contributes to these masking effects; however, the extent to which position effects speech recognition in noise remains unclear. This research study aims to investigate how listener position affects speech understanding in a simulated restaurant where energetic and informational masking is present. A simulated restaurant with realistic, spatialized stimuli will be used to assess speech recognition among normal and impaired hearing participants. Results from this study will contribute to our knowledge of how position can be manipulated to minimize the effect of background noise on speech understanding. These findings will inform the counseling of hearing-impaired listeners on positioning strategies to improve their social engagement in noisy environments.

Student awardee: Rachel Kramer

Faculty name: Dr. Erin Harberts

Project abstract: Sepsis is the currently one of the leading cause of death within hospitals and is most often caused by a bacterial infection in the bloodstream. Due to overactivation of immune responses, this infection can rapidly become fatal if left untreated. In humans, sepsis first presents as fever, pain, and confusion which evolves into septic shock leading to rapid inflammation and organ failure. Toll-like receptor 4 (TLR4) is a canonical receptor for lipopolysaccharide (LPS), the Gram-negative bacterial lipid used to induce endotoxemia and associated symptoms of septic shock. Without the presence of TLR4 physiologic symptoms of sepsis are not observed. To compensate for the lack of TLR4, the complement cascade is overactivated, leading adverse outcomes such as internal blood clotting. The complement cascade is system of proteins present in blood serum that is responsible for the initial recognition and attack of pathogens in the body. This project will investigate the correlation of length of LPS and its ability to activate the complement cascade using sandwich ELISAs. Identifying the severity of these compensatory pathways being activated in the absence of classic receptors can help develop therapeutics to result in better prognoses for immune suppressed patients in septic shock.

Student awardee: Thomas Silva

Faculty name: Dr. Rian Landers-Ramos

Project abstract: Skeletal muscle comprises a vast majority of the human body and allows for many purposes involving movement, force production, and stability. Resting oxygen consumption represents the energy requirements needed to sustain bodily functions at rest, and it is typically assessed at the whole-body level using indirect calorimetry. Skeletal muscle accounts for a large portion of resting oxygen consumption and requires assessment using novel technology. Near-Infrared spectroscopy (NIRS) has emerged as a tool to non-invasively assess oxygen consumption in a specific muscle bed on par with previous gold-standard measures. However, NIRS-derived measures of oxygen consumption in individual muscle beds are not always consistent with whole-body consumption throughout the literature. While whole-body oxygen consumption is elevated post-exercise,

it is currently unknown whether changes in skeletal muscle oxygen consumption in response to different intensities of exercise are evident using NIRS. This proposed project will explore whether NIRS-derived oxygen consumption of the vastus lateralis is altered following whole-body maximal versus submaximal cycling exercise. This Research Impact Award will allow me to further explore the field of exercise physiology research. Findings from this project may be used to inform evidence-based rehabilitation programs for individuals based on specific skeletal muscle responses.

Student awardee: Sylvia Van Fleet

Faculty name: Dr. Bethany Willis

Project abstract: Earning a degree in Family Science involves rigorous research and understanding of family history, families in a global lens, and contemporary families in our society. Families are diverse and constantly changing. This requires researchers to stay connected with society and conduct new studies to understand families and their development. Despite this knowledge, learning resources that faculty and students have access to do not include the most recent research and information on contemporary families. My faculty mentors, Dr. Willis and Dr. DiGregorio, are observing how faculty members in Family Science perceive availability, accessibility, discipline-specificity, and representation of contemporary social issues in resources available for teaching and learning in Family Science. To extend and add depth to the research, I plan to measure how undergraduate students in Family Science perceive these issues for learning the curricula taught in this discipline. With this research, gaps in Family Science learning resources nationally can be exposed and addressed by faculty, researchers, and higher education textbook publishers.

Student awardee: Jay Calkins

Faculty name: Dr. Elyssa Klann

Project abstract: Transgender and nonbinary individuals are an under researched population in psychology. Previous research has shown that transgender and nonbinary individuals experience higher rates of psychological distress, including social anxiety, than cisgender individuals. Particularly, transgender and nonbinary individuals experience minority stress, or the psychological distress associated with being a member of a minority group. Transgender and nonbinary individuals also experience gender dysphoria, which is the distress experienced due to the disconnect between a person's assigned sex and their gender identity. This project aims to understand the relationship between gender dysphoria, social anxiety, and minority stress. Participants will respond to an online survey that will include measures for gender dysphoria, social anxiety, and minority stress. The relationship between the three measured variables will be analyzed by a linear regression. This project will expand understanding of transgender and nonbinary individuals.

Student awardee: Sabrina Srour

Faculty name: Dr. Hickey and Dr. McQuitty

Project abstract: For this undergraduate researcher, professional goals are personal. As a multilingual Palestinian-American and an Elementary Education major, I want to be a teacher that all students, and particularly Arabic-speaking students, can look up to and relate to as a person with a diverse background, somebody that I never had when I grew up. Although my classmates and mentor teachers also want to teach writing to linguistically diverse children effectively, there is a severe lack of resources for elementary writing teachers on Arabic-speaking students. Although Arabic is second only to Spanish in languages spoken by the most multilingual K-12 students, 80 percent of the current teaching force is white and only 13 percent of U.S. teachers speak a language other than English at home. In the journal most commonly used for readings in ELED literacy syllabi, 101 articles provide information on Spanish-speaking students and five articles provide information on Arabic-speaking students. Using autoethnography, writing practices mapping, and the drawing and telling approach, I will gather data in my diverse Baltimore community that will provide insights on the ways that Arabic-speaking children engage in multilingual writing practices for the purpose of adding to the available resources in practitioner research journals.

Student awardee: Nataly Loza

Faculty name: Sora Rosen, M.A., Psy S.

Project abstract: This study will determine how being bilingual, specifically in English and Spanish, impacts an individual's cultural identification. More specifically, the study will determine how language use, proficiency, and language acquisition (age of acquisition) will predict an individual's cultural identification. Language use will be defined as frequency of use of both languages. Language proficiency will be defined as speaking, reading, and writing abilities. Language acquisition will be defined by the age in learning both languages. In terms of cultural identification, it will be defined in relation to feeling a connection to American and/or Hispanic culture.

Student awardee: Rebecca Harasymczuk

Faculty name: Dr. Iskander Ibrahim

Project abstract: The aim of this project is to determine the effects of three different types of microplastics (MP's) on plant development to simulate the rising of plastic pollution in the environment within soil and waterways. Polypropylene (PP), polyethylene (PE), and polyvinyl chloride (PVC) will be tested to determine if they have any significant impact on two vegetable plants: Iceberg Lettuce (*Lactuca sativa*) and Cherry Belle Radishes (*Raphanus sativus*). Each respective MP will be mixed into the soil of the individual planters at a concentration of 0.05% (w/w), grown, and compared to a control group that has not been treated with MP. I will analyze how MP presence affects photosynthesis, physical or morphological traits, and or stress induced reactions in plants. Progression will be measured over the period of 8-10 weeks to allow plant maturation and will utilize lab equipment like spectroscopy to measure photosynthesis health and qPCR to document changes to

gene expression or metabolism. A literature review will span over the project timeline to investigate methods of MP removal in plants.