Quest 2022: Presentation Session Abstracts

Presentation Number	Department/ Program	Authors	Title	Abstract
1	Art and Design	Belghachi, Hamadi; Bauso, Maddy; Hauser, Jacob	Experiments with Code	Students from Art 348 and 448 (Creative Code 1 & 2) will be presenting explorations from their class. The audience will be able to interact with the code and talk to the coders!
2	Art and Design	Betancourt, Joel; Djapa, Andjela; Helion, Noah; Noto, Charles; O'Connor, Noah; Rivers, Justin ; Rogers, Will; Salie, Andrew; Sapkota, Nira; Smith, Maddie; Weber, Ellen; Whitman, Samanthat	Adventures with VR as a Creation Tool	
3	Art and Design	Meyer, Brandan; Barrios, Aruasy; Smith, Miranda	Wheel throwing and glazing	Brandan will be demoing how to throw a bowl and mug. Miranda and Aruasy will show a few glazing techniques, for example, painting and marbling.
4	Art and Design	Lawrence, Michaela; Hill, Katherine	Book Arts	Come take a look at the possibilities in bookmaking and binding. Kathrine and Michaela will be sharing a variety of book formats and demonstrating various binding techniques.
5	Art and Design	Scordo, Jamie; McDorman, Peter; Williams, Gregory; Meyers, Olivia; Wang, Sue (2021-2022 ART 417 Students:)	Responsive Web Design	In this session participating student designers will share web design work developed in 2021-2022. They will share their process for designing for different screen sizes by starting with narrow screens and adapting the layout as more space becomes available.
6	Art and Design	Budd, Ashley; Vann, Hayley; Verrelli, Amber; Scarano, Cierra	Printmaking	In this session there will be a variety of printmakers demonstrating printmaking processes — Screenprinting, Letterpress and more.
7	Art and Design	BFA Students	BFA Open Studios	BFA students participating in the Student Studio Program in the Art and Design department will open their individual work spaces and present their current artwork.
8	Art and Design	Cwikla, Paul P.; Noel, Nicole G.; Kitchener, Kayla M.; Lawrence, Michaela C.; Maier, Bailey; Mills, Jon	Sculpture	Intermediate, Advanced, and Graduate Sculpture students showcase their current research.
9	Art and Design	Students of the Department of Art and Design	Art and Design Awards	Ceremony to present the annual Art and Design Student Awards

1	Atmospheric and Geological Sciences	Steiger, Scott	Insights from a National Weather Service Climate Observer	Oswego, NY, on the downwind shores of Lake Ontario, has been a weather observing site for the United States Government since the 1840s and therefore has one of the longest climate records in the country. It is currently part of the National Weather Service's (NWS) Cooperative Observer Program (COOP), which consists of over 10,000 volunteer observers across the country. The Oswego site location has changed throughout the years, but has remained within the confines of the city's limit. As of October 2019 the site is on Oswego's western border within a small residential yard. The observations are taken at 5:30 pm local time +/- 1 hour and include maximum and minimum temperatures since last observation (□F), current temperature, times of observed/estimated precipitation, liquid precipitation and snowfall amounts (to the nearest hundredth and tenth of an inch, respectively), snow depth (to nearest inch), the occurrence of ice pellets, thunder, wind damage, fog, glaze, hail, along with anything else of interest that occurred during the day (e.g., cloud types). The current observer is a meteorology professor at SUNY Oswego and the site has both a liquid-in-glass and electronic thermometer (most COOP sites do not have the liquid thermometer). The previous observer, Mr. Bill Gregway, collected and reported on Oswego's weather for over 50 years! Some interesting observations will be discussed, including discrepancies between the electronic and liquid thermometers, precipitation measurement errors and the challenges of measuring snowfall.
2	Atmospheric and Geological Sciences	Lynne, Matthew	An Analysis of the Weather Prediction Center's Winter Storm Outlook in Low Probability Scenarios	The Weather Prediction Center's (WPC) Winter Storm Outlook (WSO), was developed in conjunction with National Weather Service (NWS) Weather Forecast Offices (WFO) to help coordinate more consistent issuance and messaging of Winter Storm Watches. The WSO uses the WPC Probabilistic Winter Precipitation Forecast (PWPF) guidance to output daily probabilistic guidance for winter storm snowfall and freezing rain criteria being met during a four day period throughout the lower 48. While this product has undergone testing for several winter seasons, this study will only focus on the period from October 1, 2020 through April 30, 2021. While the previous work regarding the WSO has shown that this product has the potential to be quite helpful for the various WFOs, there were instances throughout the period of study where storms were shown to have little to no probability of occurring on the WSO guidance. Many questions were raised as to why this occurred and whether there were any patterns that could be distinguished among these events. In general, it was found that due to the combination of high winds and low snowfall, blizzards tended to not show up well on the guidance as well as storms that tended to have greater overall uncertainty in the short and medium range. It will be important to take note of these types of events as the WSO moves towards operational implementation while highlighting areas where local expertise at the various WFOs can supplement the WSO guidance.

1	Biological Sciences	Rose, Nicole	Investigating the Effects of Anthropogenic Noise Pollution on Echolocating Bats in Upstate New York	Natural background noises are common in the environment. Thus, bat communication systems are inherently equipped to overcome those noises. Anthropogenic noises, on the other hand, are an emerging global pollutant, and they pose new challenges, as they can interfere with vocal communication and navigation. Furthermore, many bat species have adapted to live and forage in and around humanmade structures such as houses, buildings and streetlights, enhancing their exposure to artificial noises. Previous studies have shown that bats can alter echolocation pulse parameters and activity patterns in response to loud anthropogenic sounds such as road networks and energy extraction infrastructure. Although artificial noises produced in or around houses and buildings are not typically considered disruptive, little is known on how weaker artificial noises affect bat echolocation parameters and activity. We hypothesized that bats will alter their echolocation and activity patterns in response to urbanized noise pollution to facilitate vocal exchanges within noisy environments. To test our hypothesis, we recorded echolocation activity using passive and active acoustic monitoring in both pristine and urbanized areas in Upstate New York. We found a reduced number of species foraging in urbanized compared to pristine environments. Moreover, bats occupying urbanized habitats altered their echolocation pulse parameters, as well as their activity patterns. Anthropogenic noise is a significant threat to animals that have adapted to live in human-altered environments. This study demonstrates that echolocating bats, which actively depend on sound for navigation and communication, can serve as bioindicators to quantify the ecological effects of artificial sound pollution.
2	Biological Sciences	Murphy, Dylan	Responses of the flesh fly Sarcophaga bullata to formalin exposure in pig meat	The fly Sarcophaga bullata (Diptera: Sarcophagidae) is a common carrion-feeding insect. Though it is normally not considered a pest, S. bullata can pose problems to the funeral industry, which often needs to take steps to prevent maggot infestations with the deceased. Normally, formalin is used to delay decomposition. This ongoing experiment is being done to understand the developmental consequences to flesh flies if exposed to formalin, by observing larval growth rate, pupation, mortality, and reproduction. The results would give insight into how formalin may work as a deterrent to flesh fly infestation.
3	Biological Sciences	Leskey, Benjamin	Soil-free Propagation of the Inch Plant (Tradescantia zebrina) - Effect of Fertilizer and Nodal Number of Cuttings on Root Development	Keeping houseplants has been an effective way for improving mental health throughout the pandemic. This study develops soil-free propagation methods for at-home plant owners of the common house plant Tradescantia zebrina. This study tested 48 cuttings of Tradescantia zebrina and divided them into 6 treatments. Half of the cuttings were cultured in regular tap water and the other half were cultured in tap water mixed with readily available commercial all-purpose fertilizer at a 0.025% concentration. Within each culture medium treatment, 8 cuttings of different sizes with 3, 5, or 7 nodes respectively, were cut at the middle of the lowest node and placed in a growth container where the nodes were submerged in the growth medium. Preliminary results showed that fertilizer treatment significantly promotes root emergence: the total number of roots and the length of the longest root are significantly higher. Significant differences in root quantity and root length were not observed for cuttings of different sizes. Four more measurements will be conducted in the next month to monitor root development among all treatments. This simple and effective propagation method for Tradescantia zebrina will benefit owners of houseplants looking to propagate more plants to develop a soil-free vertical garden at home.

4	Biological Sciences	Roberts, Kelsey	Investigation of The Role of KrsB in Rap1-Mediated Adhesion of Dictyostelium discoideum	Cell adhesion to the substrate is critical for proper migration. Dictyostelium discoideum is a beneficial organism to study cell adhesion and migration because its movement is similar to that of other amoeboid cells, such as neutrophils and metastatic cancer cells. Rap1 is a small GTPase that has been previously shown to increase cell spreading and adhesion. Kinase responsive to stress B (KrsB) is a negative regulator of cell adhesion, but the exact mechanism of decreasing adhesion remains unknown. It is predicted that KrsB may reduce cell adhesion by inhibiting Rap1. If this hypothesis is supported, cells expressing fluorescently-tagged KrsB and Rap1 should show decreased spreading and adhesion compared to cells with Rap1, without KrsB. Since epifluorescence microscopy requires replacement of growth media with a buffer, we first determined if this switch had an influence on cell spreading. After confirming that imaging in buffer did not significantly influence cell spreading, wild-type cells were transformed with inducible GFP-tagged KrsB and either constitutively active RFP-Rap1 or an empty vector as a control. Half of the cells for each cell line were induced to express KrsB, and cells were imaged to measure cell spreading. There were significant differences in cell spreading between cells with constitutively active Rap1 either induced or not induced to express KrsB. There were no significant differences among the control group, suggesting that KrsB reduces spreading through Rap1. Future studies aim to continue researching the interaction between Rap1 and KrsB in cell spreading and migration.
5	Biological Sciences	Flores, Tiffany	Regulation of Ras-Associated Protein-1 By Kinase Responsive to Stress B in Dictyostelium discoideum	Dictyostelium discoideum is a social amoeba that is commonly used as a model organism for studying chemotaxis, which is directed migration along a chemical gradient, due to its similarities to human neutrophils and metastatic cancer cells. Kinase responsive to stress B (KrsB), a homolog of mammalian tumor suppressor MST1/2, is a negative regulator of cell adhesion and migration in D. discoideum. However, little is known about the mechanism of KrsB action. Another regulator of adhesion is a small GTPase Ras-associated protein 1 (Rap1). In mammalian cells, Rap1 can be phosphorylated, which prevents its association with the plasma membrane and leads to its inhibition. We hypothesized that KrsB might negatively regulate Rap1 by phosphorylation, thereby disrupting the activation of Rap1 on the membrane. Indeed, preliminary studies showed increased membrane localization of Rap1G12V in KrsB-null compared to wild-type cells, although further studies are necessary to confirm these findings. To determine if KrsB phosphorylates Rap1 we performed immunoblotting for Rap1 in cells with or without KrsB and looked for a shift in the electrophoretic mobility as an indicator of phosphorylation. Under basal unstimulated conditions, we did not observe an electrophoretic mobility shift for constitutively active Rap1G12V in wild-type compared to KrsB-null cells. We now plan to examine the electrophoretic mobility of Rap1 in cells with and without KrsB following stimulation with a chemoattractant. To enhance the mobility shift and improve detection of phosphorylated Rap1 we will use polyacrylamide-bound Mn2+-Phos-tag. These studies are ongoing.

6	Biological Sciences	Perez, Alexia	Role of Adhesion Mediator SibA in Mechanotransduction of Dictyostelium discoideum	Dictyostelium discoideum is a social amoeba commonly used as a model organism for the study of various cellular processes, including directed cell migration. Mechanical cues, such as shear flow, have the ability to induce directed migration. However, little is known about the role of cell-substrate adhesion in mechanotransduction. We hypothesized that adhesion is essential for the ability of cells to sense and respond to mechanical cues. To test this hypothesis, we examined whether mechanotransduction depends on SibA, a transmembrane protein involved in D. discoideum adhesion. Before testing cell response to shear flow, we studied the adhesion of SibA-null cells grown under our experimental conditions. Adhesion of SibA-null cells in growth media was significantly reduced compared to wild-type cells, consistent with previously published findings. Notably, adhesion was significantly decreased by 25% in SibA-null compared to wild-type cells grown on a bacterial lawn, which is the growth method used prior to the assessment of response to shear flow. To test how SibA-null cells respond to acute mechanical stimulation, we examined localization of active Ras as a read-out of the activation of the signal transduction network involved in directed migration. Both wild-type and SibA-null cells had a comparable response to 2 and 5-second stimulation with shear flow at different pressures. Although this suggests that the modest reduction in adhesion in SibA-null cells does not affect mechanotransduction, the weak response of wild-type cells under the current conditions complicates the interpretation of the results. We are currently investigating approaches to optimize the response of wild-type cells.
7	Biological Sciences	Wright, Seth	Digital Modeling of Uropeltidae Skulls for Implementation in Biomechanical Testing	Uropeltidae is a clade of burrowing snakes that tunnels using a unique mechanism compared to other snakes. Instead of rotating or moving their head from side to side, Uropeltidae coil the vertebrae in their neck like a spring to create a wedge and propel themselves through the dirt head first. However, not much is known about how the skull of the snake responds to the stress of digging this way. I used 3D modeling software to create digital models of the skull of four species of Uropeltidae that can be used in engineering software to observe how stress would permeate across the skull bones. The goal is to create models that are able to function properly in the engineering software without causing technical errors. Much of this process involves simplification of the skull, including the reduction of polycount, removal of bones that do not contribute to digging such as the lower jaw, and the sealing of smaller holes that would interfere with the engineering softwareâ€™s ability to apply force to the model. These processes are an important step in understanding how stress is distributed through the skull and serve a greater purpose for others who are performing digital morphological analysis because many of these techniques are applicable to model production outside of biomechanics.
8	Biological Sciences	Carey, Dana	The Effects of Visitors on the Behaviors of Captive Golden Lion Tamarins (Leontopithecus rosalia)	Zoo visitors have been found to affect the welfare of captive animals. Although visitors are an important part of conservation-based goals, they are an unpredictable variable that captive animals must face. The â€œvisitor effectâ€ demonstrates the influence that visitors can have on animal behavior, causing positive, negative, and neutral impacts on welfare. This study observed the effects that visitors of the Rosamond Gifford Zoo in Syracuse, NY had on golden lion tamarin behavior (Leontopithecus rosalia). It was hypothesized that as visitor number and visitor noise level increased, the golden lion tamarin would exhibit more stereotypic behaviors than social, non-vigilant, stationary, or locomotive behaviors. Interval sampling was used over a period of 14 days to record the behavior of a golden lion tamarin, the number of visitors present in the viewing area, and the noise level. An activity budget was created and the noise level and visitor number were compared to each other using a linear regression and to the observed tamarin behaviors using a logistic regression. None of the behaviors studied were significantly affected by visitor number or visitor noise level, and the tamarin spent the majority of its time exhibiting stationary behaviors. While visitors did not have a significant effect on the behavior of the golden lion tamarin, there are several recommendations that can be followed by zoos to ensure that visitors do not create a stressful environment for captive species.

9	Biological Sciences	Hidoyatov, Muhammadzohir	A Comparative Study of Eggshells of Passeriformes Birds	Eggshells play an important role in the embryonic development of oviparous species as they provide mechanical stability, serve as calcium reserve, transfer heat, and exchange respiratory gasses and moisture. While domestic chickens were used as model organisms to study avian eggshells, the difference in morphology and chemical composition of wild birds' eggshells is limited in the literature. The aim of this study is to provide a comparative description of eggshells of 14 different species within 11 Passerine families. Collected eggshells from Rice Creek Field Station were processed for imaging using Scanning Electron Microscope (SEM). The cross-section of the eggshells was measured between 157.85 µm and 70.64 µm for all the perching bird species examined. The basal caps of mammillary bodies of all the species' eggshells were perfectly placed on the eggshell membrane and each tip of the basal caps was attached to the membrane. Below the eggshell units is a multilayered shell membrane consisting of an outer membrane made up of a thick and dense mat of fibers, an inner membrane with interwoven thin fibers, and an innermost smooth inner boundary layer that is continuous with the extra-embryonic membrane of the embryo. The comprehensive analysis of morphological similarities and variations was done to establish the relationship between the structure with the habit and habitats of the Passeriformes species.
10	Biological Sciences	Yarbough, Emily	The Paradox of Sex: A Look into the Accumulation of Harmful Mutations in a Parthenogenetic Terrestrial Isopod	The Paradox of Sex, or the question of why sex is maintained in the wild, is a topic of great debate within biological research. Theoretically, nature should push toward an asexual model, as it requires more resources to be sexual, yet sex is still extremely prevalent. Multiple hypotheses have been suggested to explain this phenomenon, including niche differentiation, the Red Queen Hypothesis, and the accumulation of harmful mutations in genomes. This study focuses on the accumulation of harmful mutations in the genomes of two closely related terrestrial isopod species, Trichoniscus pusillus, which has both sexual and parthenogenetic forms, and the obligately sexual Hyloniscus riparius. Isopods are a relatively novel group when it comes to this research, as most previous work has been conducted on just a small handful of organisms, and will therefore be a new addition to the pool of research. The adult sex ratios in both species were measured at Rice Creek Field Station in Oswego, NY, and RNA-seq was performed with a subset of samples to obtain genotype information. The resulting sex ratio and genotype data was consistent with diploid, sexual reproduction in H. riparius, but not in T. pusillus. Instead, our data suggests this population of T. pusillus is entirely parthenogenetic and triploid, and all individuals used for sequencing seem to stem from a single, clonal lineage. Further work is currently in progress to assemble transcriptomes, run quality assessments, and observe the potential presence of any harmful mutations within the genomes of either species.
11	Biological Sciences	Potvin, Eva	Testing the Red Queen Hypothesis by Identifying Evidence of Rickettsiella in a Parthenogenic Terrestrial Isopod	The paradox of sex involves the incongruent observations that many species reproduce sexually despite the potential costs and disadvantages of sexual reproduction. One such theory to explain why species may reproduce sexually in spite of those costs is the Red Queen Hypothesis. The Red Queen Hypothesis explains that species will adapt more rapidly when reproducing sexually. This hypothesis combined with the concept of parasitism could be an argument for why a species would reproduce sexually despite the costs. However, The Red Queen Hypothesis has only been studied within a few wild study systems, so it is difficult to draw more general conclusions. In order to test the Red Queen Hypothesis, we decided to study a terrestrial isopod, Trichoniscus pusillus, which has both sexual and parthenogenic forms, an obligately sexual relative, Hyloniscus riparius, and a bacterial parasite, Rickettsiella, which is commonly associated with other terrestrial isopods and acts as an intracellular pathogen. To begin testing the hypothesis, we wanted to test local populations of T. pusillus and H. riparius for infection with Rickettsiella. By identifying if there is Rickettsiella infecting T. pusillus, we will be able to expand our knowledge of how parasitism can affect asexual species.

12	Biological Sciences	Rentof, John-Kaarli	Evaluating factors that influence the identification of sea lamprey siblings using genetic pedigree reconstruction methods	Determining familial relationships within populations is a valuable tool for understanding and evaluating the ecology of specific species. In the Great Lakes, Sea Lamprey (Petromyzon marinus) are an invasive, parasitic fish that display complex dispersal behaviors throughout their life cycle. Genetic tagging methods could be used to better understand sea lamprey dispersal patterns; however, several key uncertainties must be evaluated before its application. Here we used two programs to reconstruct sibling relationships among simulated larval sea lamprey when no parental genotypes were sampled, Colony and Sequoia, and evaluated assignment accuracy and the false-negative rates across a range of parameters. Overall, 100 simulations for each of 27 different combinations among three variables: offspring sampled, breeding adults, and number of loci genotyped were evaluated. Accuracy among unrelated and full-sib dyads was high with Sequoia, whereas accuracy of Colony was high across full-siblings, half-siblings, and unrelated individuals. Half-sibs were rarely inferred with Sequoia. False-negative rates for Sequoia were high when determining full-sib or half-sib dyads. Our results suggest that Colony should be used to reconstruct sibling relationships to better understand sea lamprey dispersal patterns in the Great Lakes.
13	Biological Sciences	Perrin, Jamie	Developing molecular techniques to detect barred owls in the wild	Environmental DNA (eDNA) sampling is revolutionizing species monitoring because it is more sensitive at detecting target organisms and is cheaper to administer than traditional sampling methods. As a result, researchers are investigating the application of the method beyond aquatic or semi-aquatic species, for which the method was originally applied, and fine-tuning methods for species detection based on the ecology of the target species and the ecosystems within which they reside. Analysis into the possibility of eDNA detection from a non-aquatic target species through water samples is impactful with regards to the future of eDNA monitoring. This project provides insight into planning for future non-aquatic avian sampling. The ability to understand the interaction between arboreal species and how their DNA will interact with the environment and waterways is essential for understanding how to apply eDNA analyses to similar species in the future, particularly because it may help to provide insight into changes in a species distribution and abundance through space and time. In addition to the development of a quantitative polymerase chain reaction assay for Strix varia (Barred owl) sampling, owl eDNA degradation through time will be analyzed in a controlled environment. Previous research has shown Barred owl eDNA to be undetectable between 12 and 18 days using end-point polymerase chain reaction. Furthermore, this project is to repeatedly sample for Barred Owl eDNA throughout the course of a melt event to determine the prevalence, rate, and the effect of watershed-transport on the eDNA detection of an aerial species through water samples.
14	Biological Sciences	Brown, Elizabeth	The Effect of Wind Damage on Eastern White Pine, Norway Spruce, and Japanese Larch at the Rice Creek Field Station	Trees in the Great Lakes regions are subjected to strong winds during the winter. A treeâ€™s ability to withstand storms can be estimated based upon the flexibility and strength of its branches, which is dependent on its corresponding age and size. Conifers pose a model for these trends, as they have evolved to thrive despite colder, harsher weather that can be associated with winter storms. It is hypothesized that younger, weaker, and less flexible branch species are more likely to fall in comparison to older, stronger, and more flexible ones. Conifers of Eastern White Pine (Pinus strobus), Norway Spruce (Picea abies), and Japanese Larch (Larix kaempferi) were studied for wind damage after winter 2022 at Rice Creek Field Station. Six clusters of trees of each species from locations of two different opennesses were identified and the total number of fallen branches were counted for each cluster and the average number of fallen branches for each tree was calculated. The age of each fallen branch was determined by counting the number of growth rings and the diameter of each was measured. Data were compared across three species as well as across locations of two different tree densities. The trends of the effect of wind damage were summarized. Conifer species with different wood hardness have different degrees of damage caused by strong winds.

1	Biomedical and Health Informatics MS	Gendel, Jolie	Using maternal health problems to predict infant birth weight	For women in the United States, the time during pregnancy through postpartum is one in which their health is most at risk. Currently, the United States is globally ranked at #57 in maternal mortality rates, at 17.4 per 100,000 pregnancies (Prevent, 2019). There is no single cause for maternal and infant health risks, as preventable risks, socioeconomic factors, access to care, and societal support measures contribute in interrelated ways. The Pregnancy Risk Assessment Survey (PRAMS) is the standard tool used in 46 states for capturing local and state information on pregnancy behaviors and outcomes. Through surveying, PRAMS researchers obtain a clear view of ongoing or emerging factors related to maternal health. Information in the PRAMS dataset will be processed using Rstudio and machine learning techniques such as random forest or linear modeling. By applying artificial intelligence (AI) analytic techniques to the PRAMS dataset, the goal is to answer the following research questions: What maternal health problems impact fetal development? Can machine learning be used to predict fetal birth weight based on maternal health issues? By answering these questions, the goal is to have a better understanding of health issues of women and the developing fetus. Successful prediction would allow for improved targeting and treatment for at-risk pregnancies to improve birth outcomes.
2	Biomedical and Health Informatics MS	Fioravanti, Matthew	High-Risk Management: Analysis of the Total Cost of Care, Health Diagnoses, Lab Results, and Demographics Among Behavioral Health Patients With Chronic Physical Comorbidities	In the United States, nearly 25% of individuals live with a behavioral health condition. The cost of care for behavioral health patients living with chronic physical comorbidities accounts for around 44% of the entire country's healthcare costs. High-risk management programs look to identify actual or potential high-cost patients, to implement early interventions with the goal of improving their health outcomes and decreasing overall cost of healthcare. This presentation reviews the progress of my thesis project, which analyzes behavioral health patient data from Western New York. The goals of this project include identifying association in the total cost of care based on demographics, health diagnoses, and lab results. Geospatial analysis of the cost of care and various health factors based on the Western New York data. And finally, using machine learning classification to determine and classify potential patients who could be considered for a high-risk management program.
3	Biomedical and Health Informatics MS	Freeman, Yaowapa	"EARLY" Application for Smartphone	An early warning score (EWS) is often used to determine the degree or severity of illness in a patient. The tools assist healthcare providers detect an early warning sign where early intervention can be given which will result in a better outcome in patient care as well as reduce cost in healthcare. The aim of this project is to design a Graphical User Interface (GUI) of a decision support smartphone application for an early warning system and develop "EARLY" application for smartphone using Flutter, which is a cross-platform language for mobile development developed by google. The primary users for this application are healthcare providers such as registered nurse, nurse practitioner, physician assistant, and physician. However, the application can expand to all healthcare providers who wish to use the application. There are various versions of early warning score; however, this project will focus on National Early Warning Score (NEWS), Modified Early Warning Score (MEWS), Modified Early Obstetric Warning Score (MEOWS) and Pediatrics Early Warning Score (PEWS). The design of EARLY: Decision Support for Healthcare Providers will include the following functionalities: 1) Ability to select all available assessments to use in calculations. 2) Access to final score. 3) Access to all suggested information and interventions.

4	Biomedical and Health Informatics MS	Lin, Felix	Prediction of Costs and Length of Stay for Hospitalized Patients using Supervised Machine Learning	Traditional methods of data analysis have lower efficiency for analysis of large volumes of healthcare data. Machine learning is a method that will enable researchers to efficiently analyze Big Data. Big Data can be analyzed by machine learning algorithms without the need for healthcare professionals and researchers to analyze datasets individually. The objective of this study is to investigate the utility of machine learning algorithms for analysis of healthcare data in the real word setting. I have applied two machine learning algorithms, artificial neural network (multilayer perceptron) and logistic regression, for analysis of a large dataset based on billing records of patients. The dataset consists of data for about 7 million patients who were hospitalized in the U.S. in 2019. The results demonstrate that machine learning algorithms can predict outcomes such as higher costs and increased length of hospital stays for patients admitted for many medical conditions. The accuracy of prediction ranges from about 60% to 90%. The potential benefits of utilizing machine learning to analyze healthcare data include the ability to identify patients who are at increased risk of adverse outcomes associated with hospitalization. The risk of hospital-associated infections may increase with increasing length of hospital stay, therefore, early identification of patients who are at risk of extended hospital stays will allow the healthcare team to intervene early to optimize the patients' chronic medical conditions prior to hospital admissions.
5	Biomedical and Health Informatics MS	Okoye, Stella	Stroke Prediction using Machine Learning	A stroke is a health condition that causes damage by tearing the blood vessels in the brain. It can also occur when there is a halt in the blood flow and other nutrients to the brain. According to the World Health Organization (WHO), stroke is the leading cause of death and disability globally. It accounts for approximately 17 million deaths per year: that is a death every few seconds. On the other hand, there are more than 50 million stroke survivors all over the world. Diagnosis of stroke during the initial stages is crucial for timely prevention and cure. As stroke prediction is a complex task, there is a need to automate the prediction process to avoid risks associated with it and alert the patient well in advance. This project applies machine learning to stroke prediction.
1	Chemistry	Bushen, Slater	Determining the enzyme function of structure 3CBW	The purpose of this project was to use computational and experimental methods to determine the function of an enzyme for which the structure is known but the function is unknown. The selected structure is available in the Protein Data Bank (PDB) with ID 3CBW. Initial analyses were performed by using computational sites and databases, including BLAST, Dali, and Pfam for sequence and structure alignments. Next, Motimate was used for active site alignment and comparison to known enzymes. Finally SwissDock was used with suitable ligands to identify possible substrates for testing experimentally. These computational tools allowed us to hypothesize that 3CBW is a hydrolase which specifically cleaves mannan substrates. We next expressed 3CBW in a culture of E. coli cells and purified it. We then used chromogenic substrates to study the ability of 3CBW to catalyze hydrolysis reactions. We confirmed that 3CBW behaves as a generic hydrolase with substrates such as p-nitrophenyl acetate and p-nitrophenyl butyrate. We further determined that 3CBW behaves specifically as a mannanase to hydrolyze azcl-galactomannan. We are currently using site-directed mutagenesis to change the proposed active site of 3CBW to determine the effect of the mutation on enzyme activity and confirm the location of the active site in the structure.

2	Chemistry	Farrell, Kevin; Gomez, Chelsea	CFH Expression and Purification	The complement system is part of the innate immune system found in mammals. It is responsible for providing defense against pathogens such as bacteria and funguses, and it plays a role in the removal of damaged cells. Complement can be activated via three different pathways to start a cascade that results in various effector functions. Our lab is interested in eluding a molecular level understanding of the protein interactions that regulate complement activation. In particular, we study complement factor H (CFH) which is a 150 kDa glycoprotein made up of 20 globular complement control protein units. CFH is a known regulator of C3 and also interacts with thrombomodulin. From recent studies, there are certain domains in CFH that have shown more contributions in the interactions than other parts of the protein. For our research, domains 1-4 are to be investigated to observe the potential interactions these 4 domains have with other proteins. We know we have successfully transformed 2 different strains of P. pastoris containing the first 4 domains of CFH by screening. Currently we are experimenting with the expression and purification of CFH. Recent problems have arisen due to the low amount of protein being expressed by the yeast cells. Work will be focused on adjusting the growth conditions of the yeast cells to potentially increase the amount of protein expressed. Work will also be done to come up with an efficient purification scheme to successfully purify the CFH fragment.
3	Chemistry	Root, Lauren	Determining The Function of 3DS8	The main goal of this project is to determine the function of the enzyme 3DS8. It is already known that 3DS8 is mainly found in bacteria and is predicted to be an alpha-beta hydrolase based on computational analysis including both sequence and structure alignment. This means that it is likely that 3DS8 is an enzyme that catalyzes the hydrolysis of bonds in its substrate. The computational analysis also showed that 3DS8 was mainly aligned with other protein domains of unknown function, meaning that we do not know the specific substrates that the enzyme hydrolyzes or whether it may even be a different type of enzyme. The next step was to go into the lab and test 3DS8 for hydrolysis activity with different substrates. 3DS8 was expressed in E. coli cells and then purified. Its activity was tested by combining purified 3DS8 with PBS buffer and a chromogenic substrate. We then measured the absorbance of the reaction mixture over a 40 minute time period as the hydrolysis product was yellow. The results of this kinetic analysis were then analyzed to determine whether or not 3DS8 was able to catalyze the hydrolysis of the substrate.
4	Chemistry	Hidoyatov, Muhammadzohir	Copper-catalyzed α-Alkenylation of Ketones Using Primary Alcohols and Primary Aldehydes	α, β-Unsaturated ketones have been used in many life saving drugs, food preservatives, and pesticides. They can be synthesized using metal (I) catalyzed α-alkenylation of ketones using primary alcohols and primary aldehydes. Use of alcohols and aldehydes which are abundant and cheap makes these reactions budget friendly. A new methodology using copper catalyzed reactions with the use of N-phenylpicolinamide (NPPA) as ligands was developed to provide higher yields at low temperatures. The results with various metal catalysts, solvents at various temperatures as well as various electron rich and poor substrates will be discussed.
5	Chemistry	Jandev, Vikrant	Detecting Cortisol Using LC-MS/MS	Cortisol plays a vital role in the body's response to stress. Cortisol can be detected through enzyme-linked immunosorbent assay (ELISA). The project's specific aim is to compare the liquid chromatography-tandem mass spectroscopy method (LC-MS/MS, with four transitions) to two different ELISA's we currently use in our laboratory to analyze cortisol in hair and nails. In collaboration with SUNY-Upstate-Medical, we used TSQ Quantis Plus MS to analyze the samples. For analysis, five quadruplicate samples were prepared: commercial milled hair; D-cortisol; D-cortisol after acetone chase; D-cortisol that went through the entire procedure; commercial hair with D-cortisol added before acetone chase; and commercial hair with D-cortisol that went through the entire procedure. This "spike experiment" aimed to see how effective the extractions were while using the D-cortisol as an internal standard. We analyzed them using ELISA (which cannot distinguish between D-cortisol and cortisol; Salimetrics and Arbor Assay kits were used) and LC-MS/MS (which can distinguish between D- cortisol and cortisol). Next, we will investigate how to improve LC conditions and check the linearity of hair and nail cortisol concentrations in different amounts of hair and nails.

6	Chemistry	Brand, Katherine	Validation Experiments for Cortisol Extraction in Nails	The focus of my effort is the validation of the process to extract and measure cortisol from human nail samples. Cortisol is at the end of the negative feedback loop of the HPA axis, comprised of the hypothalamus, pituitary, and adrenal glands, which regulates responses to environmental stressors, so cortisol is an ideal target molecule for studies concerning the stress levels of the participants. Determining the ideal conditions and proper procedures for quantifying cortisol concentrations in nail samples is crucial before any extramural samples can be processed and verifiable results can be produced. In our presentation, we will provide answers on how much cortisol is lost during the wash, how many washes are needed, how much mass is lost while drying the samples, how many methanol and acetone extractions are necessary to effectively collect cortisol, and how much weight of nails is optimal for analysis.
7	Chemistry	Roque, Johann	Analysis of a Photo-Degradable Polyester	Polymer chemistry is a rapidly growing subfield of chemistry revolving around the development of plastics. Within this field, the ability to create polymers (i.e., plastics) with controlled degradation capabilities has garnered much attention from the community. This focus derives from the fact that millions of tons of plastic are produced and disposed of each year. Due to the robust nature of plastics, they do not naturally degrade and instead build up in the environment. This presentation outlines research towards the development of a new degradable polymer that may contribute to the mitigation of the plastic waste issue. Previous students working on this project have developed a plastic capable of controllably degrading in the presence of ultraviolet light; however, the particular way in which this material degrades on the molecular level has yet to be explored. To better understand how our polymer degrades, two control molecules were synthesized, representing different degradation pathways inherent to the polymer. These molecules were analyzed to verify that the desired product had been synthesized. Subsequently, experiments using these molecules were carried out to determine the degradation path of our polymer. This investigation has broadened our knowledge of how our polymer degrades in the presence of UV light.
8	Chemistry	Padilla, Alexander	Investigating Metallophilic Interaction Support by NHCs	Metallophilic interactions are unusual attractive interactions between closed-shell metal ions. These interactions often exhibit interesting photophysical properties which can be exploited in light-emitting materials. N-heterocyclic carbenes (NHCs) have been shown to support these unusual interactions given their σ-donating strength. The properties of NHCs can be easily fine-tuned through selective design of their backbones and substitution patterns. By incorporating pendant pyridyl arms in the NHC ligands, multimetallic complexes, consisting of d10 metal ions, can be synthesized. These multimetallic complexes may exhibit on-off metallophilic interactions based on their coordination environment and ligand donor strength. A small library of NHCs is reported and has been used to synthesize multimetallic complexes with the potential to demonstrate metallophilic interactions. The synthesis and characterization of the NHCs and resulting complexes will be discussed.
9	Chemistry	Deloff, Ceth	Synthesis and Characterization of Water-Soluble Ruthenium Complexes	Amides are important synthetic starting materials used in many commercial products. Traditional synthetic pathways used in industry to make amides use toxic, strong acids and bases and are conducted at high temperatures and pressures. A catalyst such as a ruthenium metal complex can provide an alternative, greener route to making amides. Novel ruthenium complexes based on previously reported catalysts will be synthesized and characterized. The base structure of the presented Ru complexes utilizes a 6-coordinate geometry around the ruthenium metal center with nitrogen containing phosphine ligands to impart water solubility. Future application of these new catalysts will involve testing their catalytic activity. This will be done using nitrile hydration to amides under milder reaction conditions which uses water as both solvent and reactant.

10	Chemistry	Gysbers, Michaela	Exploring the Use of Latent Fingerprints to Differentiate Female and Male Subjects	Latent fingerprints are deposited onto surfaces by means of eccrine sweat and sebaceous secretions, which are found in the ridges of the finger. Eccrine sweat consists of water, amino acids, proteins, lactate, and some inorganic ions, including Na+, K+, and Cl-. The relative abundance of amino acids has been shown to be related to gender. Furthermore, determination of physiological levels of amino acids is significant in the diagnosis and treatment of hereditary diseases, kidney and liver diseases and neuropathies, and can also be used to evaluate the nutritional status of individuals. While the comparison of overall quantity of amino acids in male and female subjects have been successfully performed, individual detection and quantitation of amino acids still needs improvements in terms of the number of amino acids detected, quantitation, and repeatability. In this project, a method has been developed to detect, identify, and quantify amino acids in latent fingerprints using gas chromatography-mass spectrometry (GC-MS). Fingerprints are deposited on glass slides and recovered using a mixture of solvents. They are then hydrolyzed and derivatized before GC-MS analysis. To improve the precision of the method, deuterated amino acids were used as internal standards. For the purpose of studying the variations of amino acids in fingerprints of the same individual over time, samples were collected from five male and five female subjects each week for five weeks and analyzed. Multiple comparison analysis will be used to investigate changes in amino acid concentration over time.
11	Chemistry	McNamara, Skylynn	The Effect of Phenolic Compound Concentrations in Staghorn Sumac Seeds on the Winter Foraging Behaviors of Birds	Staghorn sumac (Rhus typhina) is an early-successional shrub of old fields, hedgerows, and roadsides throughout the northeast and the upper mid-west United States and southeast Canada. Staghorn sumac contains many beneficial compounds, including phenolic compounds. These compounds are a defense mechanism to herbivory in plants and play a role in inhibiting seed germination. Specifically, when phenolic compounds decline, starches activate and respiratory activity increases, enabling seeds to germinate. It has been hypothesized that concentrations of phenolic compounds vary throughout the seasons, as an evolved mechanism to control the timing of seed dispersal by foragers and that freeze-thaw events transform and reduce phenolic compound concentrations.
1	Communication Studies	Audycki, Micah	The Matrix Films are about being Transgender: A Critical Analysis of Gender Representation in The Matrix	
2	Communication Studies	Buttons, Helena	Company Portfolio Paper: Spotify	
3	Communication Studies	Ransom, Jaylea	Racial and Gender Diversity in Black Panther	
4	Communication Studies	Eastman, Christopher	“If you raise them right, they’ll go away for school” The Disconnect between College Students and their Parents	
5	Communication Studies	Krasoski, Nick	LGBTQ+ Online Communication with SUNY Oswego Students	This study looks at GLAAD's social media safety index to assess safety of the LGBTQ+ community. In particular, the study seeks to further GLAAD's study and apply it to SUNY Oswego's LGBTQ+ community to improve online safety.
6	Communication Studies	Sweet, Christine R.	Gender Identity Threats Among Transwomen: A Qualitative Analysis	This study looks to understand the types of gender identity threats faced by transwomen and the strategies and tactics used to defend against such threats. By gathering information from transwomen on incidents where gender identity threats were encountered, a deeper understanding of how these threats develop and are handled, as well as the greater implications for established societal frameworks around gender, is sought.

7	Communication Studies	Di Francesco, Andrea	Exploring New Mothers' Comparisons with Social Media Influencers	This thesis explores how new mothers' engaged in social comparisons with social media influencers they followed on Instagram. Using a mixed methods study, the study analyzes how engaging in these comparisons impacted the perception of body image, self-esteem, and reported levels of depression in new mothers.
8	Communication Studies	Krasoski, Nicholas	"Introduction and Overview to the SSATT"	
9	Communication Studies	Ozga, Sarah and Hoalcraft, Mitchell	Research: Storytelling with numbers	
10	Communication Studies	Fialkowski, Brittany	Designing-User Experience	
11	Communication Studies	Sarmiento, Alaces Jewel and Mulson, Brendan	Strategizing Social Media	
12	Communication Studies	Ferguson, Ashley and Sarmiento, Alaces Jewel	Collaboration as a Learning Process	
13	Communication Studies	Hekker Weiss, Annie	Entrepreneurial adversity through a gender and racial lens	Primary goal of the project is to cultivate and enhance the entrepreneurial vision among women and minorities while acknowledging their vulnerabilities. By increasing this demographic's wealth, we are strengthening our economic base, narrowing the racial wealth gap, and better shaping an inclusive business community.
14	Communication Studies	Barrios, Oswald	Representations of Mexican Immigration in Editorial Cartoons	This study reveals the ways in which editorial cartoons published in The New York Times and USA Today discuss and portray Mexican migration into the United States. This study examines how editorial cartoons represent Mexican migrants and their experiences through the last two years of the Trump administration.
15	Communication Studies	Herbert, Stephanie	Case Study: Nonprofit Marketing to Low-Income Communities in Onondaga County	The purpose of this study is to determine how low-income community members in Onondaga County prefer to communicate and to better inform nonprofits so community members can better utilize the nonprofits' goods and services.
1	Computer Science	Kamerman, Theresa	Nonogram Solver and Generator	The objective of this project is to create a standalone desktop application that enables users to input the clues for a nonogram puzzle, and to show the solution, if one exists. Alternatively, users can upload an image and be shown a nonogram with that image as a solution.
2	Computer Science	Perperian, John	Educational Physics Concepts Simulator	This project will enable users to experiment with real world physics concepts, including the variables and equations on which they are based.
3	Computer Science	Sanchez, Franklyn	Infromational Exoplanet Archive	The goal of this project is to create and publish a working Informational Exoplanet Archive website that will give the user access to information about discovered exoplanets along with informational graphics.

4	Computer Science	Conner-Spagnola, Mika; Maldonado, Greg; Smith, Josh	A Tool to Facilitate Peer Assessment	Instructing Software Engineering is a challenging task due to the absence of single absolute and correct solutions computer science students so often strive for. Instead, there is often a variety of compromise solutions for each SE problem. Therefore, it is essential that aspiring Software Engineers are exposed to as many solution alternatives as possible to experience the implications of engineering decisions. In this talk, students of CSC480/HCI521 will present their team effort to build a production-quality web-based tool developed using agile processes to facilitate peer assessment in SUNY Oswego Software Engineering courses.
5	Computer Science	Yousef, Mairna	Micro-phenomenology: explore relieved experience	This is a presentation of a research project investigating an interviewing technique based on a new scientific disciple called Micro-phenomenology (M-P). M-P allows interviewees to explore more details of their past experiences by asking open-ended questions iteratively. The research explored M-P in the context of user testing and UX Design.
6	Computer Science	Conner-Spagnola, Mikayla	Usability and Engagament: a study on the relationship between user engagement and its impact on usability	This is a presentation of a research project investigating the potential negative relationship between usability improvements and user engagement with digital projects. Identifying that the very nature of reducing interaction items and streamlining information will reduce the amount of time users spend on meaningful interaction and exploration of digital products and more on active task completion and exploring the difference in preference between user experience designers and the users themselves.
7	Computer Science	Pointon, Zach	Convene Website Usability Study	This is a presentation of research findings after usability testing was conducted for a commercial real estate company based in NYC. Process, findings, presentation and future tasks will be discussed.
1	Counseling and Psychological Services	Fie, Lauren; Gillespie, Theresa; Storie, Michelle; Joseph, Lauren	Early Identification of Reading Difficulties: The Pros and Cons of Dyslexia Screeners	Over the last several years, parent groups, non-profit, and professional organizations have successfully increased public awareness and interest in the area of dyslexia. Strong advocacy from these groups has resulted in legislative action sweeping across the country with all but 4 U.S. states enacting laws designed to improve identification and intervention practices to improve outcomes for individuals with dyslexia (Odegard et al., 2020). The increase in dyslexia legislation has resulted in the prevalence of brief behavior rating scales for identifying students at risk for severe reading problems. Are these scales effective in identifying at-risk youth? What are strengths and limitations of these measures? The purpose of this presentation is to provide a review and critical appraisal of brief rating scales and their utility for dyslexia screening. The presenters will first cover the topic of dyslexia, reviewing different models and factors contributing to increased legislation. Next, the presenters will review different brief dyslexia screening measures that have been published and/or are heavily used in practice. Criteria for selecting rating scale screening tools will be delineated, as will the supportable uses and limitations of this approach for identifying children who are at risk for dyslexia and/or severe reading problems. Additionally, the authors will discuss the use of these rating scales to complement more in-depth diagnostic measures to improve identification and instruction for students with dyslexia. Best practices for using dyslexia screeners within the context of MTSS will also be addressed.
1	Creative Writing Awards	Awards' Recipients		

1	Curriculum & Instruction	Ramalho, Tania	Paulo Freire's Centennial: The Impact of Transformative Critical Education	Paulo Freire is a Brazilian education philosopher who created a liberation pedagogical synthesis in his most famous text, the Pedagogy of the Oppressed (1970). Here he showed the socio-psychological dynamics between oppressor and oppressed. He was clear that the oppressed "housed" the oppressor in their consciousness and was the only group that could change the dynamics, as the oppressor had nothing to gain and could not really grasp the oppressed's reality. "Banking" education, as he called it, the transference of knowledge from teacher to student kept the system in place. Freire and his American colleagues then developed the field, Critical Pedagogy, also known as transformative education, especially in Canada and Australia. Critical Pedagogy is akin to John Dewey's pedagogical creed in Democracy and Education. It is revolutionary and seeks to transform the identities of students who can read "the word and the world." This presentation will discuss Freire as an educator and provide one more avenue to celebrate his work and his allies worldwide at the time of the centennial of his birth.
2	Curriculum & Instruction	Campoverde, Karla; Crawford, Chris; Doe, Reagan; Gruelich, Emma; Tran, Thinh	Interesting Issues in Teaching English Language Learners	We are the next cohort of TESOL majors about to begin our Student Teaching Residency in Fall 2022. Our studies thus far have informed us about some interesting issues that come up for English Language Learners (ELLs) as they learn English through content in school. Our students face challenges in all areas of English including reading, writing, speaking and listening. We will share with the campus community our understandings of how to approach- and hopefully solve- these issues through knowledgeable teaching. Please join us!
3	Curriculum & Instruction	Waugh, Evan	The First Year Teacher: A Perspective from the Field	The purpose of this lecture is to provide pre-service teachers with the unique perspective of a first-year English educator and graduate student. The lecture will explore the unique learning needs that students present, as students and educators alike navigate pandemic learning and teaching. The lecture will also touch on the everyday experiences of a classroom teacher, from attending CSE meetings, to communicating with parents and guardians, and building positive collaborative relationships with colleagues across the disciplines. Specific references will be made to undergraduate coursework as a foundation for the success of a first-year teacher, as well as the aspects of the teaching profession that are developed in the classroom. Finally, attention will be given to current trends in education, as well as the backlash that teachers are facing in classrooms across the country due to hot-button issues like the challenging and banning of books in certain states, parents' fears of the presence of critical race theory in the classroom, and legislation that works to undermine the role of the educator as a classroom practitioner. This talk is intended to be honest, insightful, and ultimately provide a sense of hope for future teachers and the impact that they can have on their students and the field of education.

1	Electrical and Computer Engineering	Smithers, Jesse; Mackey, Christian; Ficarrotta, Anthony	Semi-Autonomous Robot that Detects Hazardous Gases	Gas leaks have become an increasing concern, as high-risk conditions can lead to complications affecting a wide range of industries. Robotics have been increasingly useful in higher-risk situations, specifically in fully and semi-autonomous designs. In utilizing programming and microcontrollers, a semi-autonomous gas detecting robot can be developed to create a safe work environment for all involved. This product would be capable of searching and determining the presence of particular gasses in a given area and informing the remote user of the saturation level. Being semi-autonomous, the robot would search an area and report any findings through a wireless interface, displaying current and prior gas readings to eventually identify a "hotspot." The display also can provide live footage, in the case of the device being manually operated. If the robot is autonomously searching and an obstacle is sensed in its path, it will adjust its path accordingly. Our design is comparable to that of the SMP Robotics S6 robot and the RoboGasInspector. Incorporating Raspberry Pi as the main processing unit, the movement, and the data display can be programmed using Python. The interface will display the data for the ultrasonic sensors, MQ2, MH-Z19, and PM2.5. This project will represent an accumulation of the course work within SUNY Oswego's Electrical and Computer Engineering program, as well as effort outside of class, such as in extensive literature reviews. This device would increase the overall safety of examining potential gas leaks if successful and implemented in society.
2	Electrical and Computer Engineering	Berry, Donald; Wiltshire, Taylor	Head Gesture Controller	The aim of this project is to give the performer increased capabilities during their performances by allowing them to have direct control of ongoing effects throughout their show. The device will function through the use of head gestures which will be determined by a machine learning algorithm that is loaded onto a laptop. These gestures will then be mapped to different outputs in order to allow for actions such as volume/reverb control which will be customizable based on the individual user's needs. This flow of ideas is depicted further in Figure 1. The device will be mounted to the head of the performer to allow full range of movement in order to ensure the device only aids the performer rather than hinders them. The model will be trained with data gathered by performing successive head movements while having the device mounted to the head. With this data stored, it will then be split into testing and training sets such that the model can accurately determine each head movement. With each head gesture determined, the head band can accurately control augmentations to instruments such as vibrato and reverb.
3	Electrical and Computer Engineering	Akinfenwa, Abisola ; Lofgren ,Kyle	UV Light Sanitizing Robot	The proposed project is an autonomous, ultraviolet (UV) light sanitizing robot made for small areas, such as a desk. The idea comes from the COVID-19 pandemic, where an autonomous sanitizing robot could be beneficial in space to reduce exposure to the disease and keep people safe from other bacteria. Moreover, the robot can eliminate a large amount of waste while reducing a good amount of pollution at the same time. The autonomousness of the sanitizing robot comes from the mapping feature by combining microprocessor commands with obstacle and ledge sensors, ultrasonic and bump sensors. For this robot, we built a chassis and worked on making it on a tall scale and not a wider scale to keep the robot's size small enough to cover a good amount of surface area. The small size robot helps us maintain and make sure that the robot is more accurate when going around the table. We plan to map out the robot's direction with the use of our raspberry pi and sensor functions. This project can be used in multiple kinds of spaces, from classrooms to office spaces, and change how we see cleaning for the better.
1	EXCEL: Experiential Courses and Engaged Learning	Students' names TBD as we fill spaces of this session.	TBD	

2	EXCEL: Experiential Courses and Engaged Learning	Students' names TBD as we fill spaces of this session.	TBD	
3	EXCEL: Experiential Courses and Engaged Learning	Students' names TBD as we fill spaces of this session.	TBD	
1	Health Promotion and Wellness	Lashinsky, Abigail	Division III Collegiate Athletes and the Fulfillment of the Eight Dimensions of Wellness: An Interpretative Phenomenological Analysis	Objective. College students, in general, are considered to be a vulnerable population; however, being a student-athlete adds an additional barrier. Student-athletes must receive the support they need to be successful. The purpose of this research is to explore the lived experiences of college athletes in all eight of the wellness dimensions and the barriers college athletes with balancing their wellness during the COVID-19 pandemic. Methodology. The current study is a qualitative Interpretative Phenomenological Analysis and uses semi-structured interviews to understand the lived experiences of college athletes regarding their wellness. The social cognitive theory is used as a lens to help guide the research in individual experiences, environmental factors, and behaviors. Participants consist of Division III college athletes from an Upstate New York University. 14 participants, 7 male, and 7 female will be selected to participate in the study. The athletes must be part of one of the 24 NCAA Division III Varsity teams on the University campus. Data Collection. Data will be collected through semi-structured interviews using an interview protocol via Zoom. Questions have been adapted from studies related to the Social Cognitive Theory and Wellness. Data Analysis. After the data is collected, it will be analyzed by identifying and connecting categories to clusters of the themes that outline the meanings inherent in the participants' experiences.
1	History	Hazen, Page	Senbazuru: A Journey to Make 1000 Cranes	
2	History	Fleming, Michael	The War Against Mental Health	
3	History	Rivera, Richard	The Effects of the Cultural Revolution (1962-1976) on Contemporary Chinese Bureaucracy	
4	History	Thomas, Michelle	Nationalism in Schools	
5	History	Scott, Ashley	Japan's Occupation of Korea: A Peninsula Soaked in Blood	
1	Institute for Equity, Diversity, Inclusion, and Transformative Practice	Joshi, Kaushal	A Sense of Belonging: Resources and Experiences that Help International Students Thrive and Feel Connected at SUNY Oswego	This panel discussion will inform international students and the campus community about resources and experiences to help cultivate a sense of connection and belonging on our campus. Comprised of current international students, the panel will offer insight into culture shock, navigating language differences, and international perspectives on issues such as diversity and mental health. Panelists will further share how they have connected with social, academic, leadership, and career opportunities as part of their study abroad experience. There will be a Q&A period to allow international students in the audience to get advice and for the larger campus community to consider the needs of international students as they acclimate to SUNY Oswego.

1	Mathematics & Office of International Education & Programs	Chan, Ka Ying	Distinct-Degree Factorization Algorithm for Polynomials	A general polynomial factorization algorithm that works over a finite field usually involves the following steps: square-free factorization, distinct-degree factorization, and equal-degree factorization. The first step removes repeating factors of the polynomial, the second step splits the polynomial into parts whose irreducible factors all have the same degree, and the third step factors the polynomial with irreducible factors of the same degree. In this presentation, we focus on the algorithm for distinct-degree factorization, which relies on some interesting facts from finite fields We will go over these facts as well as the detailed steps of the algorithm and some examples to show how to apply the algorithm on polynomials.
2	Mathematics & Office of International Education & Programs	Rabi'U, Rabiu	Statistical Investigation: Study Abroad Student Interests and Concerns Pre- to Post- Covid	This investigation involved a survey questionnaire asking the students about the factors and reasons why they chose to participate in the study abroad program. We collected data on the basis of race, gender, major, classification (like freshman, sophomore, junior, senior, graduate student) from those who participated in the study abroad program before COVID-19 and those who already participated (or intend to participate) after COVID-19 in the study abroad program. We analyzed the data using a software program called SAS and ran the test of association to identify the factors such as financial concerns, personal safety, the place where they will stay abroad which could affect the decisions that the students eventually make. Moreover, the study involved the duration that the students spent abroad as part of this program. The purpose of this study is to gather valuable information to manage the study abroad program very effectively.
1	Philosophy	Julia Zinszer	Learning from Others: The Epistemology of Testimony.	
2	Philosophy	Nathan McKay	Why Do We Return our Shopping Carts?	
3	Philosophy	Jackson Phillips	Is Free Will the Dividing Line of Personhood?	
1	Physics		Roby, Scott	The Story of the Universe and Us
2	Physics	Roby, Scott	The Planetarium and the Pandemic	The pandemic had a noticeable effect on the physical use of the Planetarium for the academic years 2019/2020, 2020/2021, and 2021/2022 due to closings because of the pandemic. The second year was the most affected, but by that time, the three operators of the Planetarium (John Zielinski, Richard Frieman, and Scott Roby) had found innovative ways to deliver Planetarium content online to the campus and public. We highlight some of the work done and techniques used during this challenging time.

3	Physics	Kalici, Selim	A new distance to Galactic Globular Cluster M3 using Artificial Intelligence	RR Lyrae are short-period variable stars that lie in the intersection between the horizontal branch and instability strip on the Hertzsprung-Russell diagram. In this work, we used a precomputed grid of RR Lyrae stars from RSP. We employed a classic multi-layered perceptron machine learning model to estimate the function which maps the numerical representation of light curve features to the fundamental parameters of RR Lyrae, such as absolute magnitude or Luminosity. Once trained, this artificial neural network predicted the fundamental parameters of observed RR Lyrae in Messier 3. A distance modulus of $\mu = 15.06 \pm 0.14$ was determined with the predicted absolute magnitude, and observed apparent magnitude of these stars.
4	Physics	Randall, Hugh	Linear Pulsation Calculations for Three types of pulsating stars	By using the state-of-the-art 1D hydrodynamic radiation code, MESA/RSP, we model three classes of variable stars. A robust grid of models is run for each of the three classes (RR Lyraes, Classical Cepheids, and Type II Cepheids). Each grid of models is run with four theories of time-dependent convection, labeled A, B, C, and D. For these calculations, RSP linearizes the equations of momentum and energy, and produces results in the first ten modes of the normal mode spectrum. We plot every model that produces a positive growth rate on a Color Magnitude Diagram(CMD) and will compare the theoretical results to observational data.
5	Physics	Manno, Michele., Samson, Lauren	Classical Cepheid Luminosity Curves as a Function of Stellar Depth and Asteroseismology	We compute a grid of radially pulsating classical Cepheid models at full fundamental mode amplitude covering a wide range of period. We compute these models using four different theories of turbulent convection and examine the differences in luminosity light curve as a function of depth in the star. Our aim is to determine differences produced by the four different theories of turbulent convection and determine where in the star quantitative features of the surface light curve structure are determined.
1	Psychology	Savage, Ashley	Improving Mental Wellbeing Among Minor Attracted Persons Attending a Free Support Group	Attraction does not equal action which is why primary prevention and the language we use is being evaluated within a treatment program made up of Minor Attracted Persons (MAPs). This study evaluated whether or not the treatment program in which our participants partake is improving their overall well-being – specifically at self-esteem. It is suggested that the longer participants are in the program the more their self-esteem will increase; while learning how to address their needs and live a fulfilling life. A series of questionnaires was given via a link to Qualtrics where participants were presented with multiple statements and scales, rating how they felt and what statements they agreed or disagreed with. The gathered data will be evaluated using a within-subjects repeated measures ANOVA. Data collection is currently ongoing and results are forthcoming.
2	Psychology	Thaler, Kate	The Effect of Treatment Progression on Depressive and Anxious Symptoms in Non-Offending Minor Attracted Persons	The research I'm focusing on deals with Pedohebophilia (a sexual attraction to minors). This project is entirely aimed at reducing reducing and preventing the sexual abuse of children. I hope to do that by evaluating treatment through a Global Prevention Project wellness group aimed at minor attracted persons (MAPs). I'm specifically measuring changes in depression and anxiety over time in group. These problems have been shown to be related to higher offending rates among individuals convicted of sexual offenses. By making sure these symptoms are reduced, we can support that treatment is helping and not making people more likely to offend. To do this, this paper is using data from when MAPs start treatment to a 6-month period. The Beck Depression Inventory and The Hamilton Anxiety Scale will be used as well as a longitudinal within-subjects design to analyze data.

3	Psychology	Carlo, Miranda	The Role of Early Trauma and Its Relationship to Risk to Offend in Non-Offending Minor Attracted Persons	The Abused-to-Abuser hypothesis states that people, more often males, who are sexually abused as children are at a higher risk of sexually abusing others in their life (Leach et al., 2016). In collaboration with The Global Prevention Project (TGPP), data was collected for a pilot treatment evaluation project. Participants attend a weekly online group with other non-offending minor attracted persons (NOMAPS). This group provides a therapeutic environment where NOMAPS can receive treatment, and provides them with a community and support system. The effectiveness of the group meetings was measured using a series of surveys focused on trauma, child pornography usage, and self-esteem. NOMAPS' progress is measured on a 6 month basis. I hypothesize that there will be high levels of childhood trauma, including CSA, amongst the participants, as well as extended trauma exposure and experiences. Data analysis is still ongoing and will be presented at a later date.
4	Psychology	Pompa, Daniel	Protective Factors Relating to the Use of Fantasy/Fictional Sexual Outlets Among Minor Attracted Persons	Fantasy/Fictional Sexual Material (FSM) is material that is controversial but potentially useful for reducing the risk of sexual offenses against children in populations that consider themselves attracted to minors. The research question we want to investigate is whether FSM use reduces the risk of potential sexual offense against children. Participants will be composed of individuals who self-identify as minor attracted persons, and will be recruited from various online support groups. Materials include the Barratt Impulsivity Scale and Brief Sensation Seeking Scale, data collection is currently ongoing, and results will be presented at future works. If this hypothesis is supported, results would be evidence that FSM use could reduce the number of childhood sexual offenses committed by minor attracted persons longitudinally.
5	Psychology	Ceilly, Quinn	The Costs and Benefits of the "Hyper Brain": How Intelligence, Anxiety, Overthinking, and Rumination Interact	The present study investigates short-term stress responses among college students to assess relationships between intelligence, anxiety, overthinking, and rumination. Previous works examining adverse symptoms of stress in individuals of high intelligence show inconsistent results and few evaluate overthinking tendencies, which together incentivize further investigation. This experiment incorporated physiological measures during modest stressors coupled with self-report measures of anxiety, overthinking, and rumination. The procedure consisted of three tasks: a social stress test that asked participants to prepare a 5-minute speech within a constrained time frame, an intelligence test that measured IQ, and a mirror-tracing frustration task. Additionally, four questionnaires separately measured somatic anxiety, cognitive anxiety, overthinking tendency, and ruminative tendency. Physiological data were collected during selected portions of the procedure with the BIOPAC system to test for physiological responses to stressful and frustrating situations. At the procedure's conclusion, a 7-minute mindfulness exercise served to return participants to baseline. This investigation is driven by three primary experimental hypotheses: (1) Higher intelligence (IQ scores) will be associated with greater overthinking and rumination tendencies; (2) Individuals who tend to overthink will show more prolonged cardiac responses to these stressors and take longer for heart rate to return to baseline; (3) Individuals who score higher on the IQ tasks will have higher rumination/overthinking scores and report greater anxiety. Findings may clarify the contributions of overthinking and rumination to anxiety and facilitate more specialized treatments for individuals who experience overthinking, rumination, and anxiety in the management of responses to stress.

6	Psychology	Elster, Shay; Gonzalez, Keiry; Rice, Sam	Social Media Addiction and its Relationship with Health Attitudes and Behaviors	Social media addiction is a newly emerging topic of research due to the rapid increase in the availability and convenience of smartphones. With the convenience of social media being in the palm of the user's hand, it is always accessible. A plethora of young adults use social media an overwhelming number of hours each day. This study investigates the statistical relationships between social media addition and various health attitudes and behaviors. Specific hypotheses include: 1) Anxiety, depression, and stress will be higher in individuals that have higher levels of frequency of social media use and social media addiction symptoms (positive relationship), and 2) Life satisfaction levels, body image and self- esteem measures will be lower with higher levels of frequency of social media use and social media addiction symptoms (negative relationship). This study is conducted using data collected from an online survey investigating the relationship between social media and health attitudes and behaviors. Participants are college students participating in an online survey for extra credit. Planned analyses include two linear regression models, the first with social media frequency of use as the outcome variable and the second with social media addiction symptoms as the outcome variable. Anxiety, depression, stress, life satisfaction, body image and self-esteem will be the predictors in each linear regression. Findings will aid in the understanding of the nature of social media addiction symptoms as they relate to different health attitudes and behaviors. Future research will examine social media addiction on a much larger scale.
7	Psychology	Lacker, Charlie	The Relationship Between Autistic Traits and Gender Identity Among Minor Attracted Persons	Prior studies have shown a potential connection between LGBTQ+ identity and autistic traits, as well as evidence of neurodevelopmental disruptions in minor attracted persons. This study aims to examine autistic traits, using the Autism-Spectrum Quotient (AQ), and their relation to participant's understanding of their gender identity, using the Genderqueer Identity Scale (GQI), within a minor attracted population. Participants filled out an online questionnaire and were recruited internationally through online forums, support groups, and social media advertising. Data collection is ongoing, and results will be presented at Quest.
1	School of Business	Gejadze, Iviko; Blankenship, Caydee; Waters, Garrett; Arias, Jayline	Valuing the Equity of Constellation Brands: CFA Equity Analysis Project	The CFA Institute Research Analysis involved intensive financial analysis and equity valuation modeling as the 2022 team investigated the value of Constellation Brand's stock, a company headquartered in Rochester, NY.
2	School of Business	Tennant, Tyrin; Arias, Jayline; Fraser, Owen; Waters, Garrett	How we adapt Warren Buffett's research methodology to managing an investment fund	The Student Investment Club presents its Warren Buffett-based research methodology it uses in its management of approximately $500,000 of SUNY Oswego's Endowment.
3	School of Business	Knight, Griffin	Financial Advising Internship	I will be speaking about how I found my internship and my experience thus far with it. I will talk about my career path and what I see my future looking like and how this experience has shaped it.
4	School of Business	Weiner, Hayley	Business Professionalism Evolution and Training	Key events over the past century influenced how Business Schools envision professionalism, yet what constitutes professionalism remains complex. Moreover, how schools should instill professionalism remains challenging. Professionalism is important as stakeholders demand that schools produce graduates that are both technically competent and professional. Aligned with AACSB guidance, we envision professionalism as having three elements: knowledge, experience, and ethics. Based on learning principles, efficient and effective training and development methods to achieve professionalism in each element are offered. Implications for Business Schools, students, and organizations are discussed.

1	Theatre	Bhatnagar, Kuvar; Bosley, Claire; Brown, Kentrayl; Griffin, Natalie; Hartzell, Katy; Jean, Michael; Jones, Philip; Leotta, Rachel; McGreevy, Kat; Saint Fleur, Jennifer; Singh, Gurkirat; Stevenson, Bianca; Sweet, Nicholas; White, Winston;	A Viewing and Discussion on Acting for the Camera	At this presentation, we will show a selection of our filmed scenes from THT 470: Acting for the Camera. After the screening, we will lead a talk about the preparation, filming process, and critical review of the scene work we do in class. We hope the discussion will also summarize our personal reactions to this course and the value of the camera techniques we are building.
2	Theatre	Bhatnagar, Kuvar; Digamus, Sami; Foreman, Emily; Hill, Chloë; Hines, Abigail; Hough, James; Monson, Rachel; Ricketts, Ryan; Uline, Tessa; West, Anastasia	Student Dramaturgy Hub Research: The Wedding Singer	Students will present their research material in support of the SUNY Oswego Theatre Department's production of "The Wedding Singer", scheduled for April of 2022.
3	Theatre	Bhatnagar, Kuvar; Hill, Chloë; Hough, James; Monson, Rachel; Przepiora, Maria; Ricketts, Ryan; Uline, Tessa	Student Dramaturgy Hub Research: A Play Where Nothing Happens	Students will present their research material in support of the SUNY Oswego Theatre Department's production of "A Play Where Nothing Happens", performed in February of 2022.
4	Theatre	Griffin, Alexander	Musical Reading: Sad But True	Sad But True follows the story of college nerd Emily as she discovers what she truly wants in life from her demonic alter ego. Sad But True is not your ordinary 10-minute play - it includes projections of cinematic, abstract and real-time visuals as part of its storytelling methods for the audience. Sad But True aims to give the audience an even closer insight into the minds of the characters onstage through the synergy of cinematic projections and live theatrical blocking.
5	Theatre	Mann, Elizabeth	Play reading: The Draft	The Draft is a short original play that tells a fictionalized story of a real event in American history. In the year 1969, a draft lottery for the Vietnam War was held and televised live for all of America to watch. 366 dates, all corresponding to the days of the year, were pulled and assigned a number; millions of men aged 18-25 would be called and drafted into what is, arguably, one of the most controversial wars in all of American history, and anyone who tuned in would have known. The Draft tells the story of a divided household, one half supporting the war and the other against it, all the while keeping their eyes on the television until one very specific birthdate is called. War is a bloody, messy thing that only succeeds in tearing societies apart for very little outcomes; but war is even worse when you know that, eventually, the smiling man on the screen will call you to join in the fight, regardless of how you feel.
6	Theatre	West Anastasia, Sweet Nick, Griffin Natalie, Hines Abby, Simms Shy	A Staged Reading of Purpose & Intention (or, three people with four chairs) by Anastasia West	My presentation will be a staged reading of my full length play Purpose & Intention. This will relate to my education at Oswego because this play was developed in part by my Dramaturgy class in the fall of 2021. I will be collaborating with other students to present this.
7	Theatre	Hill, Chloë	Staged Reading: The Bus by James Lantz	From the 59E59 website: "The Bus is a touching and suspenseful tale of gay teens, a small town, and a big church. It is the story of Jordan and Ian, two boys who regularly rendezvous in a parked bus that belongs to the 'Golden Rule', the most powerful church in town. Late at night the boys meet to explore feelings that are at once awkward, humorous, and kept from the light of day. When their secret meeting place is in danger of being discovered, the boys find themselves caught in a conflict between 'Golden Rule' and a gas station owned by Ian's father - and the clash is explosive. Can Jordan and Ian move their fragile relationship into the light, or will the mounting pressures of church and family drive them apart?"