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|  | **Syracuse, 18th, 6-7 pm** |
|  | **Dept** | **Presenters** | **Mentor** | **Title** | **Abstract** |
| **1** | Biomedical and Health Informatics | Agyapong, Mark | Bichindaritz, Isabelle | Predicting the Risk of Getting a Stroke Using a Machine Learning Tool | Stroke has caused a significant number of deaths and chronic illnesses, resulting in substantial government spending. This project aims to determine the risk factors associated with stroke using Machine Learning algorithms such as Support Vector Machine, Decision Tree, Naive Bayes, and Linear Regression to identify the attributes that have the strongest and weakest connection with stroke. |
| **2** | Biomedical and Health Informatics | Kommaredd, Nagarjuna reddy  | Bichindaritz, Isabelle | Survival Analysis on Breast Cancer | An essential statistical technique for assessing the time-to-event outcomes of breast cancer patients is survival analysis. Case-based reasoning is a machine learning technique that allows for individualized treatment suggestions by using prior examples to influence present decisions. Deep Neural Networks are able to successfully model complicated relationships and produce more precise and individualized predictions by employing big datasets and various sorts of data. This can help with clinical judgment and ultimately lead to better patient outcomes. |
| **3** | Biomedical and Health Informatics | Thethali, Anila | Bichindaritz, Isabelle | Internship as a Data Analyst at SCHC  | The intern duties at SCHC include Data Analysis and Visualization. The idea behind this is to create outputs from unprocessed data to identify trends and pose new queries that help in better understanding of workflow, and the implementations that would be needed to increase performance and work efficiency. |
| **4** | https://oswego-edu.zoom.us/s/96853971439 | Brew-Wiredu, Anthony | Bichindaritz, Isabelle | Healthcare Disparities in ICU  | Healthcare disparities in the US remain a problem observed across various clinical units, including the ICU. The current research focuses on race, gender, BMI, socioeconomic status, insurance and comorbidities as meaningful factors that must predict ICU outcomes. Through machine learning, we aim at ensuring the health system efficiency and fairness. |
| **5** | https://oswego-edu.zoom.us/s/96853971439 | Gecir, Merve | Byeon, Boseon |  Using Machine Learning Techniques to Predict Adult Obesity | In today's society obesity is a widespread problem. Early detection is important for a healthy life. Different Machine Learning techniques are employed to create and compare models for predicting obesity levels based on individuals' lifestyle habits. |
| **6** | <https://oswego-edu.zoom.us/s/96853971439> | Griffin, Elizabeth  | Byeon, Boseon | OncoSearch: A Radiation Oncology Physician Database for Genitourinary and Breast Cancer Patients | It is very overwhelming for patients to find the right oncologist once they receive a cancer diagnosis. OncoSearch, the web application developed for this project, allows patients to search for the best oncologist near them by zip code from the top hospitals in the country.  |
| **7** | https://oswego-edu.zoom.us/s/96853971439 | LaRocco, Marcella | Bichindaritz, Isabelle | Using MS-SQL Metadata to Create Tableau Dashboard Artifacts | This project automates the production/maintenance of data dictionaries/dataset glossaries for Tableau Dashboards at a large NY hospital system. A table schema using metadata sourced from SQL.sys tables/views, business definitions and a VB based form are used to streamline the process and produce dashboards displaying the artifacts. |
| **8** | https://oswego-edu.zoom.us/s/96853971439 | Lnu, Nedal | Wang, Xiaoliang | Application of artificial intelligence and machine learning for Severe Non-Proliferative Diabetes Retinopathy Diagnosis Utilizing Optic Disc Segmentation | Diabetes affects 422 million people globally. As reported by the National Eye Institute Trusted Sources, diabetic retinopathy affects more than half of all patients with diabetes. There are two main stages in the development of diabetic retinopathy. The eye condition can be treated if it is recognized and addressed early enough. In the field of ophthalmology, AI, ML, and DL have been applied to validate disease diagnoses, read images, map the topography of the cornea, and calculate intraocular lens parameters. |
| Aim: The main objective of this project is optic disc segmentation, which is utilized to identify quadrants to make stage IV of ""severe non-proliferative DR"" easier to diagnose. Methods applied: image processing, data collection for sub image processing, VGG16-based deep learning model training, and prediction of the optic disc mask. This presentation primarily focuses on the importance and uses of technology in the healthcare industry and how they contribute to the creation of a system that is effective for making decisions and providing treatment. |
| **9** | https://oswego-edu.zoom.us/s/96853971439 | Smith, Bruce | Bichindaritz, Isabelle | Predicting COVID-19 Infections Accurately Using Lung CT Scans and Machine Learning | Machine learning models can be used to analyze large datasets and identify patterns and features that are associated with COVID-19 infections, potentially aiding in the early diagnosis and prediction of COVID-19 infections. This project will use lung CT scans to develop a diagnosis of COVID-19. |
|  | **Oswego Ice Arena, 19th, 2-3 pm** |
|  | **Dept** | **Presenters** | **Mentor** | **Title** | **Abstract** |
| **10** | Atmospheric and Geological Sciences | Bogart, Paige | Fox, Jon | atural Attenuation of Methylene Chloride in Salina Group Bedrock Groundwater  | A currently active remediation site located in Central New York was evaluated. Groundwater at the site has been affected by methylene chloride. This study aims to evaluate if there are potential natural attenuation processes (biotic or abiotic) occurring in the bedrock groundwater. |
| **11** |  | withdrawn |  |  |  |
| **12** | Atmospheric and Geological Sciences | Haggerty, Taylor  | Wang, Yonggang | Investigating the Role The Tug Hill Plateau Plays in Lake-Effect Snow | This study investigates how the Tug Hill Plateau contributes to the lake-effect systems. The Plateau is compared to Watertown, NY to examine how lake effect affects each location. By using the archived NEXRAD data from NOAA, three case studies were analyzed to visualize the reasoning behind the path of these storms.  |
| **13** | Atmospheric and Geological Sciences | Hummel, Dan; Biedron, Evan | Steiger, Scott; Wang, Yonggang | The Lake-Effect Electrification (LEE) Field Project 2022-2023 | The Lake Effect Electrification (LEE) Project, conducted from September 2022 to March 2023, aims to better understand and forecast lake-effect lightning. This poster aims to demonstrate the daily operations of the project as well as some preliminary results collected over the course of 11 IOPs from November 2022 to February 2023. |
| **14** | Atmospheric and Geological Sciences | Robinson, Alexander | Fox, Jon; Difrancesco, Nicholas | Sedimentary Petrology and Origin of Quartzite Clasts in Rice Creek | Chemical analyses involving use of EMP and XRF quantitative data and observational analyses involving thin section processing and hand sample qualitative data were utilized on quartzite clasts collected from sites around Rice Creek to determine a link to the larger Keeseville Formation. |
| **15** | Biological Sciences | Arnold, Megan | Artemenko, Yulia | Determining the mechanistic relationship between RAP 1 and KrsB in mediating adhesion to a substrate in Dictyostelium discoideum | Kinase responsive to stress B(KrsB) negatively regulates cellular adhesion in the model organism Dictyostelium discoideum by an unknown mechanism. To determine if KrsB acts by inhibiting another adhesion regulator, Rap1, this study will examine adhesion of wild-type and KrsB knockout lines transformed with inducible KrsB and various Rap1 constructs. |
| **16** | Biological Sciences | Cordone, Grace; Sampson, Anica; Williamson, Najiyah | Sard, Nick; Olori, Jennifer; Hammerly, Susan | Monitoring the Presence of Two Amphibian Pathogens in Oswego County | Amphibian diseases caused by Batrachochytrium dendrobatidis (Bd) and ranaviruses (Rv) affect populations globally. A SUNY Oswego monitoring program has assessed the prevalence of Bd and Rv in local populations since 2012. We have detected the pathogens in several species and are working to further monitor changes in disease prevalence.  |
| **17** | Biological Sciences | Davis, Kristina | Baldassarre, Dan | Observation of Black Tern Feather Color Differences Through the Use of a Spectrometer | Black terns are the only species of tern that lack obvious sexual dimorphism. Is there sexual dimorphism in the color of their feathers that humans cannot see? Do they choose their mates based on the color of their plumage? What effect does age have on color? |
| **18** | Biological Sciences | Dickert, Stephanie; Keefe, Isabelle | Sime, Karen | Monitoring Danaus plexippus populations in Oswego County for the presence of Ophryocystis elektroscirrha | Recent Danaus plexippus (monarch butterfly) population decline is attributed to Ophryocystis elektroscirrha (O.E.), a protozoan parasite that impacts pupal development, transmitted during larval stages and carried by adult butterflies. We sampled adult monarch butterflies as well as reared caterpillars to evaluate the prevalence and infection rate of O.E. in 2022.  |
| **19** | Biological Sciences | Faulkner, Talyn; Connors, Fishel | Baldassarre, Dan | The Effect of Urbanisation on Boldness and Neophobia in Northern Cardinals  | We analyzed the effects of urbanization on neophobia and boldness in rural and urban Northern Cardinals. We placed novel objects on bird feeders and quantified flight initiation distance and latency to return to the feeder. Urban birds were less neophobic and bolder, which helps us understand how urbanization affects behavior. |
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| **20** | Biological Sciences | Fortuna, Juziyana | Artemenko, Yulia | Testing effects of glycocalyx inhibition by mannose on cell adhesion and mechanosensation of Dictyostelium discoideum. | Social amoeba Dictyostelium discoideum is used as a model organism to understand the role of adhesion in directed molility guided by shear flow. This study will address whether inhibition of the cell’s sugar coating (glycocalyx) by competition with mannose affects its ability to adhere and sense mechanical cues.  |
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| **21** | Biological Sciences | Goodman, Brooke; Marichal, Danielle; Faulkner, Talyn | Baldassarre, Dan | Three Years of Monitoring Window Strikes on the SUNY Oswego Campus  | One billion birds die colliding with windows in the United States each year. SUNY Oswego’s place on the Atlantic flyway means a large volume of birds pass through our area, and many hit windows. Since 2020 volunteers have monitored window strikes on campus, and we present our data to date. |
| **22** | Biological Sciences | Hayden, Ciara | Hellquist, Eric |  Brewing tea along the Oswego River: Monarda didyma and the Father of American Botany | Oswego Tea (Monarda didyma) has extensive history with Oswego dating back to 1743, when the Father of American Botany, John Bartram, collected it in Oswego. Initially recognized for its medicinal properties, Oswego Tea and other local plants collected by Bartram have become well known for their ethnobotanical and ornamental value. |
| **23** | Biological Sciences | Jones, Quinn | Artemenko, Yulia | Genetic suppressor screen to identify novel partners of adhesion regulator Kinase Responsive to Stress B (KrsB) in Dictyostelium discoideum | Kinase responsive to stress B (KrsB) negatively regulates adhesion in social amoeba Dictyostelium discoideum by an unknown mechanism. To identify regulators or effectors of KrsB, we generated mutants that show changes compared to the parental KrsB-null phenotype and are currently identifying the genomic location of the mutations.  |
| **24** | Biological Sciences | MacDonald, Quinn | Sard, Nick | Detection of Fisher Environmental DNA in the Rice Creek Watershed | Environmental DNA (eDNA) is DNA left behind by organisms as they interact with the environment. eDNA can be collected in water, soil, or air samples and is an emerging tool for the detection and conservation of rare species. Detection of eDNA is unevenly distributed across hydrological systems. To better understand eDNA distribution from terrestrial mammals we will be sampling for Fisher (Pekania pennanti) eDNA in a number of areas throughout the Rice Creek watershed.  |
| **25** | Biological Sciences | Meeker, Jordan  | McElwain, Andrew | Prevalence and Intensity of Helminth Parasites in Wild and Domestic Canids from Fecal Samples at Rice Creek Field Station  | Many helminth parasites can infect members of Canidae. Fecal samples were collected from Rice Creek Field Station, prepared for examination using sediment concentration, parasite eggs were photographed, and identified based on morphology. This study compared the prevalence and intensity of helminth infections in wild and domestic canids. |
| **26** | Biological Sciences | Narbone, Devin; Hiller, Casey; Hiller, Zane; Ekhator, Aisosa/ Hurst, Barnaby; Minns, Desirae | Fisher, Kaitlin | Characterizing the yeast diversity of wetland soils at Rice Creek Field Station | Wetland microbiotas are critical in the biogeochemical cycling of nitrogen, sulfur, phosphorous, and carbon. Different groups of microbes play different roles in these cycles, with fungi playing an important role in the decomposition of complex plant material. Yeasts are a speciose group of single celled fungi with highly variable metabolic traits. Little is known about yeast ecology in general, including the abundance and role of yeasts in wetland microbiota. The goal of this study is to isolate and phenotype wetland yeast taxa to better understand the diversity, species richness, and metabolic traits of wetland yeasts. |
| **27** | Biological Sciences | Streeter, Amanda | Dunn, David | Facilitating Flow: The Design and Fabrication of a Flow Cell for a DIY Flow Cytometer | Flow cytometry analyzes cells in solution, quantifying characteristics based on the light scatter produced when a laser intercepts the cell. The chamber through which cells flow (flow cell) impacts data quality. Here, strategies for development of an inexpensive alternative to the standard quartz flow cell are investigated. |
| **28** | Chemistry | Careem, Raviya; Yee, Eaindra; Williams, Murphi; Bhagi-Damodaran, Ambika  | Bendinskas, Kestas | Understanding the Structural Basis of Small Molecule Inhibitors of M. tuberculosis DosS | This project involves understanding the structural basis of small molecule inhibitors that bind to the GAF-A domain on the DosS/DosR regulatory system, responsible for TB dormancy. Incubation experiments were done to obtain inhibitor-bound GAF-A protein, which was crystallized using the hanging-drop crystallization method to elucidate the overall structural changes of the inhibitor-bound protein. |
| **29** | Chemistry | Cheng, Hana; Tenbergen, Gilian; Bendinskas, Kestutis | Bendinskas, Kestas | Male and Female Testosterone Levels in Blood, Saliva, Hair, and Nail | Our overarching goal is to determine the relationship between sexual behavior and testosterone levels. Blood, hair, nails, and saliva testosterone concentrations were measured in 40 males and 20 females. A literature search for similar research and Spearman’s coefficients for the associations between testosterone levels in different matrixes will be reported. |
| **30** | Chemistry | Gilligan, Katherine | Koeppe, Julia | Predicting and Determining the Function of the Enzyme 3IRU | This project was designed to determine the function of an unknown enzyme, 3IRU. Preliminary computational research identified that 3IRU was likely a phosphonoacetaldehyde hydrolase based on other enzymes with a similar structure. Wet lab experiments were then conducted utilizing various substrates to verify the predicted enzymatic function. |
| **31** | Chemistry | Lupp, Elisabeth; Bahr, Nathan  | Baker, Matthew | Improving Reaction Conditions for the Production of a Degradable Polyester  | Plastic waste is a growing global concern. To remedy this issue, plastics should be produced from renewable resources and have the ability to degrade in the environment. This presentation focuses on the creation of an environmentally friendly plastic that is derived from biomass and has photo-degradation capabilities.  |
| **32** | Chemistry | Menzies, David | Koeppe, Julia | Understanding CFH and C3 Protein Interactions by Surface Plasmon Resonance | The complement system is part of our innate immunity and helps with pathogen clearance. This system, requires a complex series of protein activation and interaction steps. Misregulation can cause autoimmune disorders. We used surface plasmon resonance (SPR) to study interactions between C3, an important activator, and CFH, an important regulator.  |
| **33** | Chemistry | Seyse, Matt | Haddadi, Shokouh | Investigating the Variations of Amino Acid Contents of Male and Female Fingerprints Over Time Using Multiple Comparison Analysis  | The chemical composition of fingerprints, amino acids for example, have been of forensic interest because latent fingerprints by themselves may not always lead to a suspect. In this study multiple comparison analysis is used to investigate variations of amino acid contents in fingerprints of male and female subjects over time.  |
| **34** | Chemistry | Ziobro, Tyler | Brown, Thomas | Investigations of Cu(I)-Centered Photosensitizers  | Four coordinate, monometallic copper (I) complexes often emit light upon excitation with ultraviolet radiation. The photon emitted by a complex is affected by sterics and electronic properties of the ligands involved in charge transfer. This presentation highlights the design, synthesis and characterization of a small library of these metal-centered photosensitizers.  |
| **35** | Computer Science | Binura Silva; Mohammad Hammad; Jacob Keel; Pezhman Raeisian; Salvatore Sperrazza | Lee, Jaewoong | SWSS - Student Wellness Screening Service | The proposed screening service for college students will evaluate conditions such as depression and anxiety privately, with a less intimidating interface to encourage student engagement. Peer healthcare professionals will offer support and suggest how to contact the university's mental health services. |
| **36** | Computer Science | Liu, Vicky | Tenbergen, Bastian | Improving Traffic Flow through Autonomous Cyber Physical Systems Integration: A Monte Carlo Simulation and Proof of Concept Implemnetation | In this project, we investigate if a cyber-physical control mechanism, in which vehicles autonomously announce their arrival at a traffic light, improves traffic flow. Our results through experiments will show that while vehicular throughput is marginally lower, wait time for each vehicle is significantly reduced. |
| **37** | Computer Science | Manchi, Ravi Teja; Nejati, Bahareh | Schofield, Damian | Incorporating Cross-culture Design in the User Interface | This study examines the impact of cross-cultural design on user interfaces and experiences for Arabic-speaking users. It explores how language and design elements influence perceptions and behaviors across cultures, using interviews, surveys, and usability testing. The results will guide developers and designers in creating culturally sensitive user interfaces. |
| **38** | Computer Science | Raeisian, Pezhman Parvari | Tromp, Jolanda | ZEN ZONE: Practice Lifeskills in VR Game for Individuals with ADHD | Games simulating VR offer a way to address problems |
| people suffering from Attention Deficit Hyperactivity Disorder (ADHD) have, |
| providing a realism in which users exercise their brains, overcome challenges, |
| and keep an eye on their actions. VR gaming can help people with ADHD improving |
| their attention and impulse control. |
| **39** | Computer Science | Shojaei, Fatemehalsadat; Shojaei, Fereshtehossadat | Tromp, Jolanda | Children VR/AR Museum | Chilly Mo means Children`s Museum, combined by two words - children and museums. This application introduces Persian historical eras and costumes to kids, by using VR/AR environments to get new experiences in pluggy platforms. Its goal is to create a virtual tour of the VR/AR environment for Persepolis representation. |
| **40** | Computer Science | Silva, Binura; Erra, Kranthi Kumar; Boulingui, Gerael; Kaur, Sukrit | Tromp, Jolanda | Emergency AR | Our team developed an AR-based fire training app prototype to allow users to learn fire training to practice their skills and enhance their preparedness. This will reduce the costs of live-fire exercises and allow users to train more frequently. |
| **41** | Computer Science | Tambulkar, Sampada; Shojaei, Fatemehalsadat; Nejati, Bahareh; Balasubramanian , Ganesh Rajavelu | Tromp, Jolanda | Better Help, Mental Health (BHM) | A mental healthcare app for international students, based on virtual reality, offers customized aid through mood tracking, meditation, language options, experts, and community pages. Despite the challenges of technology, language barriers, stigma, and privacy concerns, the app aims to offer interactive and accessible mental health support. |
| **42** | Health & Wellness  | Nicotra, Anna; Terry, Brooke; Nicholson, Britney | Keida, Elizabeth Dr.  | Discover Wellness: A Virtual Worksite Wellness Program Shown to Promote Healthy Behaviors in Employees | Discover Wellness, a virtual worksite wellness program, educates employees and promotes healthy behaviors related to stress, sleep, nutrition, and physical activity. A comparison of pre/post surveys of Spring/Fall 2022 sessions showed significant improvement across all health behaviors, which may translate to reduced chronic disease and improved work productivity. |
| **43** | Mathematics and Physics | Turallo, Joel | Ilie, Carolina | The h-BCN Monolayers of Optically Active Graphenic Nanoflakes | Hexagonal-BCN has shown to be a practical and useful alternative to graphene monolayers for many applications including many electronic devices and photochemical processes. Hexagonal BCN (h-BCN) has a larger band gap and desired semiconducting properties. While h-BCN is isoelectronic to graphene, it is chiral and it has the advantage of being optically active near VUV, at wavelengths much higher than graphene nanoflakes. The first principles Density Functional Theory calculations are used to explore the band structure profile of h-BCN. Hydrogen terminated h-BCN nanoflakes are planar and its stability confirmed by calculations. The absorption energies of h-BCN on Rh(111) as well as the other face-centered cubic metals like Ir(111) and Ni(111) are calculated. Surprisingly, nanoflakes of h-BCN do not always lay flat on the surfaces of all metals but appear to adopt a corrugated orientation. |
| **44** | Psychology | Betancourt, Juliana | Rhodes, Theo | Free Recall from Visual and Categorical Prompts | This study examines visual memory recall by testing the capacity to recall visual information from complex scenes. Individuals may have different patterns of recall based on how they are prompted to recall (visual or textual). The findings of the study might have applications in teaching, design, and advertising. |
| **45** | Psychology | Dion, Gabrielle | Bovier, Emily | Students Reflections on Targeted Learning Outcomes | This study evaluated student perceptions of learning and reflection on targeted learning outcomes. Participants evaluated their classroom experiences and completed a reflection assignment that related to a “human dimension and caring” goal. Trends in students’ responses and relationships to assessments of engagement will be discussed.  |
| **46** | Psychology | Gori, Angela | Hu, Sien | Age-Related Changes in the Resting State Functional Connectivity of Hippocampus and the Effects of Academic Achievement | The hippocampal resting state functional connectivity (rsFC) was investigated in relation to age and academic achievement. The hippocampus-frontoparietal rsFC became weaker in older adults. An interaction between age and academic achievement was found in the rsFC of hippocampus and superior frontal regions, suggesting non-linear lifespan changes of hippocampal functions. |
| **47** | Psychology | Palmo, Zachary | Ruckel, Lindsay | The Roles of Gender and Individual Differences in Predicting Sexual Interest Perception Among Heterosexual Adults | The current study examined the degree to which individual differences in attachment orientations, rejection-sensitivity, sexual narcissism, and sociosexual orientation predict sexual interest perception among a sample of heterosexual adults. Gender was also examined, as previous research has indicated a gender difference. Results, theoretical, and practical implications will be discussed.  |
| **48** | Psychology | Sanger, Jessenia; Schwantner, Frank | Bovier, Emily | Student Perceptions of Challenges & Strengths for Success in College: Quantitative and Qualitative Responses | The purpose of this study was to conduct a thematic analysis on open-ended responses from college students about their perceived strengths and challenges with regard to academics, social relationships, and independent living. Core themes, implications for success in college, and future directions as applied to neurodiverse students will be discussed.  |
| **49** | Psychology | Sharma, Esha; Oakes, Laura | Fay, Adam | Pathogen avoidance and temperature | Motivations to avoid pathogens are associated with a variety of social cognitive effects, including prejudice toward some stigmatized groups. Temperature has also been implicated in social cognitive processes relating to inclusion and exclusion. This study is investigating the interactive effects of pathogen avoidance and temperature on prejudice toward overweight individuals. |
| **50-52** | The Campus, City Relations Committee | Alpha Sigma Eta, chapter of the International English Honor Society: Grace Barraco, Nyla Graham, Angel Hall, Tindake Kourouma, Eli Kubilus, Veronica Logsdon, Mariah Searle, Francesca Spica, Tessa Uline, Courtney Wood; Students of Intermediate Photo Class: Christopher; Ascher, Sarah; Douglas, Kyle; Green, Liam; Hetherley, Harvir; Hothi, Dahlia; Nguyen, Lauren; Smith, Kevin; Pham, Brandon; Trinidad, Jolene Deily | Peter Cardone, Doug Guerra | One City. One Campus. One Community. | This photo project is an inaugural effort featuring a series of photos and short essays exploring the vital partnership between community and campus, highlighting the applied learning experiences of our students and the professional experiences of recent graduates who work in Oswego and call the community home.  |
| **53** | Computer Science | Arthur Oakley  | Jolanda Tromp | PronouncePerfect | PronouncePerfect is a proposed mixed reality application that seeks to serve as a tool for language learners. The application focuses on familiarizing language learners with the sounds inherent within a given language. Currently, PronouncePerfect offers solely Italian language support. In future iterations, the program will ideally serve to educate learners of a multitude of languages such as English, Spanish, French, German, and more. |