CELEBRATION OF **SCHOLARSHIP** & CREATIVITY 2018

2018 PRESENTATION SCHEDULE

	Foster Room	Fallon Room	North Auditorium
8:30- 9:20	Jesse Owens' Encounters with Hitler and the United States Derick Mireku Tyranny, Restoration, and Censorship Joan Spinazola Race, Class, and Financial Aid Sofia Ceron	Belongingness and Performance in the Undergraduate Classroom Janet Novack First-Generation Motivational Factors Rebekah LaHair Continuing Education Students' Experiences at Worcester State University Lauren Healy	
9:30- 10:20	Struggles of Urban Exclusion: The Backbone of Industrial Worcester Mendrick Banzuela "Trumpets of Eviction:" Puerto Rican Poverty and Great Brook Valley in Worcester, Mass. Frankie Franco Defining "African American" in America Nana Darkwa	Yekke Liberty MacMillan Tyranny, Restoration, and Censorship Elliot Mercier Joan Spinazola The Art of War Arden Reinhardt	The Chinese Legal System Jaymi-Lyn Souza Levi Lincoln, Jr., Stephen Salisbury II, and the Politics of Business Monique Manna
10:30- 11:20	Welcome to Worcester? Inclusion and Exclusion in the Public Spaces of New England's Second Largest City Peter Peloquin Immigrant Influences and Local Socio-Economic Impacts: Immigrant Entrepreneurs in Worcester, Mass. Colin Houle Exploring Worcester's History: A Digital Story Eleazer Perez Michael Kadlick	Hugo Boss: Behind the Uniform Jasmine Asassy Business Through the Holocaust Angelo Brito	Breaking Down Stigmas Shelby Fontaine Student Commuters and Residential Students Phyllis Moore Students' Food and Students' Mood: Analysis of Health, Nutrition, and Happiness Jacob Rodriguez
11:30- 12:20	WWII on the Eastern Front: Kalter Sommer Jacob Zandi WWII on the Eastern Front: Kursk Dalton Smith	The Social Implications of Art and Higher Education Amber Wheaton The Struggles of Students with Disabilities Antoinette Ansong Barriers to Student Success: Mental Health and Campus Access Katherine Melican	

SCHOLARSHIP & CREATIVITY

Welcome to the eleventh annual Worcester State University Celebration of Scholarship & Creativity. This is one of the highlights of the academic year at Worcester State University as we showcase the wonderful creative and scholarly work of our students and faculty.

We are enormously proud of the opportunities our undergraduate and graduate students have to embrace active learning locally, nationally, and internationally in concert with outstanding faculty mentors who are exceptional leaders in their fields. The day is filled with a variety of presentations, panels, posters, and performances across every discipline of study from the natural sciences, arts, humanities and social sciences.

Please immerse yourself today in this culture of active learning and savor the abstracts here as a window into what happens every day at Worcester State University.

Lois A. Wims. Ph.D.

Provost and Vice President for Academic Affairs

BIOLOGY

How Medical Advances Have Prolonged the Life Expectancy of Cystic Fibrosis Patients

Jorge Concepcion-Cruz

Faculty Advisor: Jennifer Hood-DeGrenier, Ph.D.

Cystic fibrosis (CF) is an inherited disease caused by mutation of the CFTR gene. As our understanding of the disease has improved and medicine has evolved, researchers and medical experts have been able to target these mutations via drugs that function as correctors, stabilizers, and potentiators of this CFTR protein, giving more hope to diagnosed patients worldwide. These medical advances will be described in this presentation.

Transcriptional Start Sites in *Drosophila elegans*

MFouad A. Faris

Faculty Advisor: Daron Barnard, Ph.D.

Genomic analysis requires genes to be carefully annotated. Identifying transcriptional sites is as important as annotating the gene locations. *Drosophila melanogaster* has been well analyzed and is the genomic reference for comparison and annotation of other species. We describe the annotation of several genes and their multiple isoforms in *Drosophila elegans*. This project will add to our understanding of how genes are regulated.

Report on and Recommendations for Recovery Services in Central Massachusetts**

Caitlin Gil-Soto, Deborah Njojo, Paul Koffi, James Muchiri

Faculty Advisors: Mark Wagner, Ph.D.; Jennifer Hood-DeGrenier, Ph.D.

Funding Sources: Worcester State University Binienda Center for Civic Engagement, City of Worcester Health and

Human Services

A joint project of Worcester Academic Health Collaborative, Worcester State University, and the Office of Health and Human Services, City of Worcester, this project aims to discover the ways people in recovery have experienced toxic stress and what contributes to their recovery. We sought to better understand family life, prisons, and medical experiences of those in recovery in order to support informed recommendations for improving health outcomes in the county.

Temperature-Dependent Water Loss in Domestic and Native Insects and the Use of Respirometry in Analyzing Water Budgets

Marques Johnson

Faculty Advisor: Randall L. Tracy, Ph.D.

Gravimetric analysis using drierite (calcium sulfate) was performed on native and domestic insects with closed system respirometry at various temperatures. Using this technique, we determined the combined respiratory and cutaneous evaporative water loss. Such studies in comparative physiology may explain differential damage based on environmental temperatures caused by invasive species such as gypsy moth caterpillars.

What Happened to *Drosophila biarmipes's* Eagle Gene?

Matthew Kupersmith

Faculty Advisor: Daron Barnard, Ph.D.

The purpose of this study is to map out transcriptional start sites for the eagle gene in *Drosophila biarmipes* (*D. biarmipes*). In the process, an isoform present in *Drosophila melanogaster* (*D. melanogaster*) was found to be missing from the *D. biarmipes* start site. Loss of this isoform is evolutionarily conserved in a sub group of *Drosophila* species. These findings may be used to update the gene browser. Transcriptional start sites for the other isoforms will be reported as well.

Determining the Connection Between Chloroplast Size and Preferred Light Conditions in *Sertaria viridis**

Olivia Long, Deicy Carolina Munoz-Agudelo

Faculty Advisor: Aleel Grennan, Ph.D.

Sertaria viridis (S. viridis), a model C4 grass, thrives in high sunlight. A mutation in a gene responsible for chloroplast division in S. viridis results in larger chloroplasts and a shade phenotype. This change could potentially increase S. viridis's fitness in low light environments and add to the genetic tools available for improving crop productivity.

Comparative Metabolic Physiology of Domestic and Native Insects: Implications for Invasive Species in New England

Devin Luce

Faculty Advisor: Randall L. Tracy, Ph.D.

Metabolic rates (both CO_2 production and O_2 consumption) of native and domestic insects were measured with closed system respirometry at various temperatures. In this study, standard as well as low- and high-temperature mass-specific metabolic rates were determined. Such comparative physiology studies may shed light on differential damage caused by invasive species (such as the Asian Longhorned beetle) based on temperature.

Examining the Role of Twist1 Phosphorylation Mutants in Triggering the EMT in MDCK Cells

Redi Metali, Arlind Dervishaj

Faculty Advisor: Jennifer Hood-DeGrenier, Ph.D.

Funding Source: Worcester State Foundation Student Research, Scholarship, and Creative Activity Grant

The epithelial-mesenchymal transition (EMT) is important for cancer metastasis. Twist1 is a transcription factor that triggers the EMT. Using a canine kidney cell line (MDCK), we are optimizing molecular techniques for detecting EMT marker genes. We will use these to investigate how Twist1 phosphorylation mutants differ in their ability to activate the EMT.

Generating Metagenomic and Genomic Libraries to Screen for Bioactive Compounds from Antarctic SoilsJennifer Murphy

Faculty Advisor: Roger S. Greenwell, Ph.D.

A Commonwealth Honors Project

A gram of soil contains greater than 10⁸ microbial cells, a dynamic environment where they survive by competing for nutrients. Characterizing soil microbes has led to the discovery of antibiotics and anti-cancer agents. We are characterizing the antibiotic potential of soil microbes from Antarctic soil aged between 13 and 17 million years ago. Metagenomic and genomic libraries from these soil microbes are being screened for antimicrobial production.

Screening Drug Derivatives as Antimicrobial Compounds for Disease Treatment**

Anthony Napolitano, Molica Pen

Faculty Advisor: Roger S. Greenwell, Ph.D.

Funding Source: Dr. Imoigele Aisiku, M.D. '92 Interdisciplinary Research Grant

One of the most daunting public health issues is antibiotic resistance. Effective antibiotics dwindle as antibiotic resistance grows. Alterations to existing antibiotics are made to boost their effectiveness. We are developing a microbial drug screening assay to test drug analogues against pathogenic bacteria. It is hypothesized that the synthesized analogues will show antibacterial properties.

The Role of Interferon Induced with Helicase C Domain (IFIH1) in Xenopus laevis Oocyte Maturation

Jennifer Olivieri, Diego Urbina

Faculty Advisor: Daron Barnard, Ph.D.

Funding Source: Worcester State Foundation Student Research, Scholarship, and Creative Activity Grant

The Xenopus laevis oocyte resumes maturation via mRNA modification by suspected 2'-O-methylation. The system of the modification is not fully known, yet the IFIH1 gene is linked with binding viral mRNA via 2'-0-methylation. This research focuses on molecular cloning of the IFIH1 gene using the pH6HTN His6 HaloTag T7 Vector, for use on overexpression experiments and testing the possible role of the gene on oocyte maturation.

Captive-Reared Pseudemys rubriventris Have Longer Plastron Lengths than Their Wild Counterparts Tiffany Perron

Faculty Advisor: Nirvana Filoramo, Ph.D.

We compared plastron lengths of *Pseudemys rubriventris* hatchlings raised at Worcester State University (for a Massachusetts Division of Fisheries and Wildlife conservation effort) to those recorded for wild turtles as a followup to our previous study comparing carapace lengths of our hatchlings to plastron lengths of wild turtles. The average plastron length of our hatchlings at seven months of age was 125.3 mm as compared to wild three-year-old turtles, which had an average plastron length of 90.5 mm.

Impacts of Elevated CO₂ on Cassava Leaf Anatomy

Hoang Vo

Faculty Advisor: Aleel Grennan, Ph.D.

The goal of this research is to determine how elevated CO₂ levels impact leaf growth and function in a variety of Manihot esculenta (Cassava) cultivars compared to cultivars grown in ambient CO₂. Differences in leaf thickness, cell number and size, and vein spacing, as well as the number and size of laticifers (specialized latex-producing organelle), were compared between the two growth conditions.

The Influences of Chloroplast Sizes on Plant Growth and Development**

Hoang Vo

Faculty Advisor: Aleel Grennan, Ph.D.

Differences in chloroplast sizes could influence plant growth and development due to changes in how much light is absorbed by the leaves. Arabidopsis thaliana plants with artificially enlarged chloroplasts were grown in the greenhouse. Growth rate and development between the mutant lines and the wild-type plants will be measured as well as chloroplast size, leaf thickness, cell number, and vein spacing.

BIOTECHNOLOGY

Quantum and Molecular Mechanic Study on the Reaction Mechanism of Nitroxyl and Thiol Donors*

Tadas Buivvdas

Faculty Advisor: Joseph Quattrucci, Ph.D.

Nitroxyl (HNO) is a nitrogenous compound that has been shown to react strongly with thiols. Reactions with selenothiols have exhibited lower energetic barriers than reactions with sulfur analogues. To determine the kinetics under physiological conditions, quantum and molecular mechanic calculations regarding the reactivity of protein thiols with nitroxyl were carried out. In addition, confounding solvent effects on the system were analyzed.

C-H Activation and Formation of Benzyl C-N and C-O Bonds Using Cp*Ir Catalysts**

Emily Mattson, Sonializ Rosario, Victoria Fratantonio

Faculty Advisor: Margaret Kerr

Funding Source: Dr. Imoigele Aisiku, M.D. '92 Interdisciplinary Research Grant

Previous work has demonstrated that C-H bond activation and functionalization is attainable but challenging for [Cp*IrCl2]2 and [Cp*RhCl2]2 catalysts. Non-directed C-H functionalization involves the cleavage of a benzyl C-H bond mediated by a carbonate base, and replaces it with a C-X bond, with X representing a nitrogen or oxygen atom. Analysis and yield determination of products was accomplished.

Evaluation of Placitaxel Production in Cell Lines at Different Levels of Aggregation in Taxus Suspension Cultures*

Deicy Carolina Munoz-Agudelo Faculty Advisor: Maura Collins Pavao

Funding Source: Worcester State Foundation Student Research, Scholarship, and Creative Activity Grant

Taxol (Paclitaxel) is a pharmaceutical drug used in the treatment of ovarian and breast cancer. Current sources of taxol include the *Taxus brevifolia* (yew) plant cell lines, but yields are very low. This project aimed to study taxol production in the different cell morphologies within a single cell line. The cells were separated at different levels of aggregation and tested for taxol using thin layer chromatography and high performance liquid chromatography.

Detection of Antimicrobial and Enzymatic Activity in Sarracenia purpurea*

Aradhna Rana

Faculty Advisor: Ellen Fynan, Ph.D.

Funding Source: Worcester State Foundation Student Research, Scholarship, and Creative Activity Grant

Sarracenia purpurea is a carnivorous plant that grows in nutrient-deficient areas such as bogs. Carnivorous plants are known to secrete various secondary metabolites in their pitchers. We analyzed the effect of the addition of pitcher plant fluid of *Sarracenia purpurea* into the cultures of various microbes. Our results indicated the presence of antimicrobial activity and an effect on bacterial biofilm formation.

Determination of Microbial Diversity and Biomolecule Extraction from Antarctic Soil**

William Rodriguez

Faculty Advisor: Roger S. Greenwell, Ph.D.

Funding Source: Worcester State Foundation Student Research, Scholarship, and Creative Activity Grant

In this study, we investigated the microbiota of a soil sample acquired from a pristine site in Antarctica that has been dated back to be between 13 and 17 million years old. From this soil we have isolated and characterized 15 microbial specimens, extracted metagenomic DNA, and demonstrated the ability of this highly oxidized soil to provide a degree of protection from consistent UV radiation for microbial DNA.

A Model System to Study the Lung Microbiome

Christarsha Young-Lemar, Kelsi O'Rourke *Faculty Advisor:* Maura Collins Pavao, Ph.D. *Funding Source:* WSU Faculty Mini-Grant

This project involved the development of a chemostat system to simulate pathogenic bacteria that grow together in the lungs of an immunocompromised patient. A medium was developed that simulates lung fluid. This medium was used to determine growth rates of different bacteria in batch culture. Based on the results, optimal conditions for growth of five organisms together in the chemostat were determined.

CHEMISTRY

Greener Removal of Hexavalent Chromium Using Cellulose Films

Justin Levitre

Faculty Advisor: Meghna Dilip, Ph.D.

Hexavalent chromium is a known carcinogen found in samples of U.S. drinking water. In this study, renewable cellulose films prepared via ionic liquids were used to effectively remove chromium from salt solutions. The effects of different types and concentrations of salt were studied using UV-vis spectroscopy. The mechanism of partitioning appears to mimic an aqueous biphasic system.

Study of the Hydrogen Spillover Mechanism Over a Pt-Decorated Graphene Surface

Samer Hammoodi

Faculty Advisor: Joseph Quattrucci, Ph.D.

Previous work has demonstrated that graphene surfaces are capable of storing atomic hydrogen. The proposed spillover mechanism was investigated for hydrogen storage. In this study, the minimum energy path for the dissociation of hydrogen molecule over a Pt-decorated graphene surface was investigated computationally.

Analysis of Chloride, Nitrate, and Heavy Metals in Surface Water and Soil

Anna Havnes

Faculty Advisor: Kathleen C. Murphy, Ph.D.

Funding Source: Dr. Imoigele Aisiku, M.D. '92 Interdisciplinary Research Grant

The concentration of contaminants in environmental waters has become a major focus with a wide range of contributing factors. The project's goal was to assess the levels of nitrate, chloride, and heavy metals (Cd, Ni, Pb) in soil and surface water adjacent to roads. Ion-selective electrodes, graphite furnace, and flame atomic absorption spectroscopy were used. Water yielded low signals while soil was more concentrated, mainly with lead (Pb).

Synthesis and Characterization of Benzyl C-N Bonds Using C-H Activation by Cp*Ir Catalysts**

Erin Hickey

Faculty Advisor: Margaret E. Kerr, Ph.D.

Funding Source: Dr. Imoigele Aisiku, M.D. '92 Interdisciplinary Research Grant

A Commonwealth Honors Project

Previous work has demonstrated that C-H bond activation and functionalization is attainable but challenging for [Cp*IrCl2]2 catalysts. Non-directed C-H functionalization involves the cleavage of a benzyl C-H bond mediated by a carbonate base, and replaces it with a C-X bond, with X representing a nitrogen or oxygen atom. Synthesis and analysis of an authentic sample of 4-methyl-N-phenylbenzenemethanamine was accomplished.

Synthesis of Substituted PNP Pincer Complexes

Ernestina Danso Kogbe, Anna Haynes, Huda Kayal

Faculty Advisor: Jeremy R. Andreatta, Ph.D.

This project describes the synthesis of a several para-substituted-PNP pincer ligands and corresponding metal complexes. The transition metal complexes were consequently studied to ascertain how varying the electronic characteristics of the complex affects the catalytic performance for several different processes and/or reactions.

Synthesis of Novel Depsides as Antimicrobial Compounds**

Renata Lima

Faculty Advisor: Weichu Xu, Ph.D.

Funding Source: Dr. Imoigele Aisiku, M.D. '92 Interdisciplinary Research Grant

The discovery of new antibiotics is critical to global health. Depsides, lichen secondary metabolites, have shown antibiotic, anti-inflammatory, analgesic, antipyretic, antiproliferative, or antiviral activities. New depsides are prepared and screened for antibacterial activity against both Gram-positive and Gram-negative pathogens. The structures of these compounds are confirmed by the spectra data from H NMR, IR, and MS.

Synthesis and Evaluation of the Metabolites of GLS362E, an Anti-Clostridium Difficile Lead Compound

Antonia Marashio, Bryan Urbina *Faculty Advisor:* Weichu Xu, Ph.D.

Funding Source: WSU Faculty Mini-Grant

Clostridium difficile (C. difficile) is a Gram-positive pathogenic anaerobe that has become a prime health concern worldwide in recent years. GLS362E, a compound that has shown highly selective antibacterial activity against *C. difficile*, is an N7-substituted guanine derivative. This project focuses on the synthesis, activity, and toxicity profile of the metabolite of GLS362E to enrich the preclinical package.

BCL-2 TR-FRET Assay: A Novel Approach to Probe BCL-2 Binding with Natural Polyphenols

Maria Markopoulos; Anita Mattson, Ph.D. *Faculty Advisor:* Susan M. Mitroka, Ph.D. *Funding Source:* National Institutes of Health

Cancerous cells thrive in an environment where apoptosis is disrupted due to the overexpression of certain proteins. It has been shown that natural polyphenols, such as gossypol and Phomoxanthone A., have a strong pro-apoptotic activity. This research explores the utility of TR-FRET assays to measure the binding of BCL-2 to its peptide ligand and subsequent binding inhibition by natural polyphenols.

Reaction of HNO with Biological Targets: Development of GAPDH Assay for Undergraduate Biochemistry Lab

Fadwa Mekkaoui, Maria Markopoulos, Kayla Bobbitt

Faculty Advisor: Susan M. Mitroka, Ph.D.

Funding Source: Worcester State Foundation Student Research, Scholarship, and Creative Activity Grant

HNO has been shown to have unique pharmacological chemistry. Research was conducted to determine the drug's effect in various pH conditions, with the goal of developing an assay that can be integrated in a biochemistry lab curriculum. GAPDH activity was examined in conditions of pH 3, pH 7, and pH 10. HNO was analyzed for its dose effect on reactivity and reversibility of modifications in acidic, neutral, and basic conditions.

Computational Analysis of the Stabilization Energy Contributions of Individual Hydrogen Bonding Interactions in Parallel-Stacked Guanine Tetraplex

Alexis Melton, Erin Doherty, Devon Hassan

Faculty Advisor: Eihab Jaber, Ph.D.

Telomere sequences work to form Guanine-complexes and are stabilized by 8 Guanine-Guanine with hydrogen bonds and ligand bonds to a central cation. Investigations utilizing *ab initio* methods have provided insight into the interactions that contribute to Guanine-complex stability. A computational method facilitates the characterization of the hydrogen bond energy contributions to the complex's stability and breaking of individual bonds. This method is utilized to discover the formation dynamics of stacked tetraplexes.

Quantification of Pharmaceuticals in Surface Water for the Classroom Laboratory

Katelyn Rioux

Faculty Advisor: Kathleen Murphy, Ph.D.

Funding Source: Worcester State Foundation Student Research, Scholarship, and Creative Activity Grant

A Commonwealth Honors Project

Caffeine is a common indicator of pharmaceutical pollution in surface water and can be analyzed by High Performance Liquid Chromatography (HPLC). The objectives of the classroom procedure are for students to create standard curves, implement spike and duplicate samples, concentrate water samples by solid phase extraction, and use HPLC. These skills can be used to prepare and analyze environmental samples from local water sources.

Computational Investigation of the Dissociative Spillover of Molecular Hydrogen on Ni-Decorated Graphene

Alexander Zielinski

Faculty Advisor: Joseph Quattrucci, Ph.D.

A Commonwealth Honors Project

The dissociative spillover mechanism of molecular hydrogen over nickel-decorated graphene was investigated computationally. In addition to the minimum energy path data, calculations to characterize the effects of rotational and vibrational motion of the hydrogen atoms have been performed. Current work focuses on producing a potential energy surface by fitting the data with a modified London-Erying-Polanyi-Sato function.

COMMUNICATION

Exploring Worcester's History: A Digital Story**

Eleazer Perez, Michael Kadlick *Faculty Advisor:* Daniel Hunt, Ph.D.

Students enrolled in a digital storytelling course collaborated to develop interview questions about unique aspects of Worcester's history, then conducted a video interview with Worcester Historical Museum's executive director. This presentation includes screening a segment of the final digital story followed by students discussing their roles in the pre-production, production, and post-production.

The Alt-Right: Movement, Media, and Money

Robert Sheedy, Samuel Webb

Faculty Advisor: Carlos Fontes, Ph.D.

Funding Source: Worcester State Foundation Student Research, Scholarship, and Creative Activity Grant

This poster presents the results of research about the relationship between the alt-right movement and the alt-right media. The poster will provide an overview of the alt-right's factions, current strategies, and ideology. Based on the analysis of key alt-right media outlets, the poster will also outline the specific ways in which the alt-right movement is using media to define itself and further its goals.

COMMUNICATION SCIENCES AND DISORDERS

Art as a Medium: The Use of Art in Cognitive Impairment After Left Hemisphere Stroke**

Rhianna DePriest

Faculty Advisor: Colleen Karow, Ph.D.

Funding Source: Worcester State Foundation Student Research, Scholarship, and Creative Activity Grant

This study examined how an individual with a cognitive-communication impairment responded to informal art therapy sessions to facilitate recall of events and perceptions of experience. Eight weeks of painting sessions were compared to traditional speech language therapy to determine effects of pleasurable and highly salient experiences. The hypothesis was that memory of events would be greater for the painting sessions.

Beyond Pronouncing the Words Correctly: Effective Reading Comprehension Interventions**

Michelle Fidler, Raquel Sousa, Amanda Dryden

Faculty Advisor: Denise R. Foley, Ed.D.

Listening, speaking, reading, and writing are interrelated. Speech-language pathologists can promote literacy achievement in students with communication disorders and other students at risk for school failure. We demonstrate and highlight three evidence-based interventions that speech-language pathologists can use to improve reading comprehension skills of elementary students.

A Study of Patient Experience and Satisfaction with New Hearing Loss Treatment Technology

Marissa Merrifield

Faculty Advisor: Keith Darrow, Ph.D. A Commonwealth Honors Project

Hearing loss is linked to a higher risk of many disorders. Advances in hearing aid technology have been designed to enhance semantic features of speech and reduce background noise. This study explored satisfaction with the new technology by giving the Abbreviated Profile of Hearing Aid Benefit (APHAB) to new users and current users. Initial results show improvement in patient experience and auditory capabilities in most users.

COMPUTER SCIENCE

Primate Slice-Junction Gene Sequences - Predicting EI (exon/intron) and IE (intron/exon) Boundary Sites**

Abdulkader Elogeil, Stephanie Rinaldi *Faculty Advisor:* Elena Braynova, Ph.D.

The goal of the project was to analyze primate slice-junction gene sequences and to predict EI (exon/intron) and IE (intron/exon) boundary sites for them. A Genbank 64.1 dataset was mined for association rules and several data mining questions were answered with clustering and different algorithms available in Weka. Visualization and statistical analysis were done with RStudio as well.

Terrorism Predictions

Alon Keselman, Urooj Haider

Faculty Advisor: Elena Braynova, Ph.D.

While analyzing a dataset of global terrorist attacks since 1950, we handled some challenges and preprocessed the data. The major goal of this project is to predict the weapon type used for a certain attack, the attack type, and the target type. We have used rules and tree models for the classification problems, run different algorithms, analyzed the classification results, and compared their accuracy.

Winning the World Series - Can We Predict?

Timothy Kmiec

Faculty Advisor: Elena Braynova, Ph.D.

In the project, I have analyzed a dataset on statistics for Major League Baseball (MLB) teams and players ranging from 1933 to 2016. I have discovered some interesting patterns and tried to answer a few questions: 1. Can we predict who will win the World Series? 2. Is there a correlation between low ERA and shutouts pitched? 3. Does stealing bases give a team a better chance at winning?

What Can We Do to Predict Crimes Better?

Caleb Pruitt, Fuverion Ymeri, Sayan Moitra *Faculty Advisor:* Elena Braynova, Ph.D.

This project is focused on a crime dataset analysis. The dataset is open source crime, provided by the Worcester Police Department. We studied the dataset using statistical analysis and visualization techniques, then asked some prediction questions. Our goal was to find what types of crimes were most prominent in specific parts of Worcester as well as to predict where these crimes might occur.

Analyze Boston**

Michael Rose

Faculty Advisor: Elena Braynova, Ph.D.

"Analyze Boston" is an open data initiative maintained by the city of Boston containing facts, figures, and maps related to the city. In this project we will look at some of the city's 133+ data sets and analyze them with descriptive and inferential statistics. The focus of this project is to discover interesting patterns and prediction using machine learning techniques.

EDUCATION

Epilepsy: Impact on Cognition, and Academic and Social Success*

Sarah Carter

Faculty Advisor: Diane T. Cooke, Ph.D.

Epilepsy is the most common neurological condition that affects children. It is hard to define epilepsy in terms of how someone experiences it. This poster will show the different types of epilepsy and how they impact a child's life in terms of cognition and behavioral, academic, and social success, as well as the recent research on structural brain abnormalities.

Is this Normal? Essential Early Language Developmental Milestones

Lauren Dunn, Kelsey Laberge, Jillian Caduto

Faculty Advisor: Denise R. Foley, Ed.D.

For most children, receptive and expressive language develops in a predictable way. In this poster, we identify the milestones for infants and young children and provide resources for parents and childcare providers to understand what is "normal" and what is not. These milestones can help parents and childcare providers determine if they should be concerned, have the child evaluated, or if the child is "on track" during this critical period for language growth.

Neurological Functioning Among School-Aged Children with Tourette's Syndrome*++

Rebecca Jacaruso

Faculty Advisor: Diane T. Cooke, Ph.D.

Tourette's syndrome (TS) is a neurodevelopmental disorder categorized by involuntary movements and vocalizations. There are various symptoms that are seen in and out of school that are related to TS. Based on the neurological perspective, abnormalities are present in the frontal lobe. Executive functions are involved in goal-oriented behavior and are thought to be mediated with the frontal lobe.

Pediatric Autoimmune Neuropsychiatric Disorders Associated with Streptococcal Infections: Emerging Examination to Educational Implications of a Childhood Disorder*

Meghan Leary

Faculty Advisor: Diane T. Cooke, Ph.D.

Pediatric Autoimmune Neuropsychiatric Disorders Associated with Streptococcal Infections (PANDAS) occur when a strep infection triggers an immune response, causing brain inflammation and sudden presentation of a myriad of symptoms resulting in significant functional impact. This poster provides history of the controversial disorder, its defining features, and implications for school-based accommodations.

Teaching Fractions for Conceptual Understanding*++

Ariana Majidi

Faculty Advisor: Raynold M. Lewis, Ph.D.

This poster will focus on fraction word problems using the four mathematical operations. The teaching of fractions is one of the more difficult instructional contents for elementary teachers. Research suggests that fractions be introduced conceptually before they are taught procedurally. This poster provides examples on how this can be achieved.

Assessment for Intervention: Communication Disorders in Early Education

Anna Ribeiro, Kayla Trask, Sara McIsaac *Faculty Advisor:* Denise R. Foley, Ed.D.

Early spoken language disorders can lead to later problems with reading, writing, and learning. They also may lead to problems with social skills (ASHA.org). Early detection and intervention are critical for later success at school and in life. Which of the many tools available to school-based speech-language pathologists are best for evaluating and designing evidence-based interventions for preschoolers?

Neurological and Behavioral Implications of Preterm Birth*

Jennifer Russell

Faculty Advisor: Diane T. Cooke, Ph.D.

This poster looks at the neurological effects of preterm birth and the behavioral implications in childhood and adolescence.

Childhood and Adolescent Psychosis: A Neurological Perspective*

Jazmin Santos

Faculty Advisor: Diane T. Cooke, Ph.D.

In order to study the prevalence of psychosis among children and adolescents, identification and detection of psychotic symptoms is key. The role of childhood trauma in the development of psychosis and other mental health problems has begun to attract attention and some believe it may be a major contributing factor in early detection, intervention, and future research.

Attention Deficit Hyperactivity Disorder: A Neurological Perspective*

Michele Wisell

Faculty Advisor: Diane T. Cooke, Ph.D.

This poster examines a neuropsychological perspective of Attention Deficit Hyperactivity Disorder (ADHD) including the symptomology, diagnostic criteria required, the neurological underpinnings of ADHD, and what deficits in these neurological areas indicate for a child. Two major theories of underlying brain structure deficits in ADHD are discussed, as well as treatment options and specific pharmacological options.

The Neuropsychology of Post-Traumatic Stress Disorder*

Janine M. Worthlev

Faculty Advisor: Diane T. Cooke, Ph.D.

There is mounting evidence to support the assertion that Post-Traumatic Stress Disorder (PTSD) can alter the structure of and the chemical reactions in the brain. The amygdala, hippocampus, and prefrontal cortex are affected, both structurally and functionally, in individuals diagnosed with PTSD.

EARTH. ENVIRONMENT, AND PHYSICS

Renewable Energy and Massachusetts' Role as a Leader in the Response to Climate Change

Abena A. Asafo-Adjaye

Faculty Advisor: William J. Hansen, Ph.D.

Energy consumption has gone up, with renewable energy sources being a main component. Massachusetts is a leader in the United States for programs to conserve energy and usage of renewable energy types. This project explores the role of sustainability, energy types, and how money is saved while expanding on energy sources. Data is from the Massachusetts Clean Energy Coalition and the Massachusetts Geological Information Systems database.

Microperthite Moonstone from the Brimfield Schist

Joseph Dusza

Faculty Advisor: Douglas E. Kowalewski, Ph.D.

Funding Source: Worcester State Foundation Student Research, Scholarship, and Creative Activity Grant

Gem-quality moonstone is readily available within the metamorphic rocks in east-central Massachusetts and northeastern Connecticut. Internally-flawless cleavage fragments are easily found in gravel patches throughout Holland, Wales, and Brimfield, among numerous other towns in this area. The presence of moonstone in these areas may be further evidence for ultra-high temperature (UHT) metamorphism in the area first described by Ague *et al.* in 2013.

GIS Modeling of the Replanting of Trees Lost to the Asian Longhorn Beetle

Tyler Levine

Faculty Advisor: William J. Hansen, Ph.D.

The Asian Longhorn Beetle is an invasive species to a variety of trees located in the United States. By using GIS (Geographic Information Systems) and working with the Worcester Tree Initiative, this study aims to demonstrate the specific coordinates of replanting of street trees. In this process, a database will be created.

Municipal Composting**

Finn McCool

Faculty Advisor: William J. Hansen, Ph.D.

Composting yard and leaf waste is an easy and effective way to return valuable nutrients to the soil and maintain its quality and fertility. Municipal composting facilities are an important aspect of an integrated solid waste management program.

Using GIS Technologies to Map Field Sites for Monitoring Carbon Dynamics in Massachusetts Forests

Randolph Mogren, Leah Stanley

Faculty Advisor: Allison L. Dunn, Ph.D.

Field work was conducted in Harvard Forest in Petersham, Mass., in August 2017 in two forest stands that have been surveyed annually since 2008. The purpose of the study is to measure carbon fluxes and investigate the feasibility of the ArcGIS Collector app to map remote field sites. The field data and maps will allow development of regional-scale estimates of the role of different forest types in the Massachusetts carbon cycle.

Traffic Accidents and Fatalities in Kelley Square

Lauryn Mulcahy

Faculty Advisor: William J. Hansen, Ph.D.

Car accidents are a major cause of death throughout the nation. Worcester is known for having multiple dangerous intersections that have high volumes of traffic, such as Kelley Square – infamously known as one of Worcester's most dangerous intersections. Crash data from the Massachusetts Department of Transportation (Mass DOT) was used to analyze where and when many of the crashes in Worcester have occurred.

Erosional Response to Flooding and Logging in a High Relief, Forested Watershed Recorded in the Sedimentary Record of Little Kennebago Lake, Northwestern Maine

Kay Paradis, Jim LeNoir

Faculty Advisor: Timothy L. Cook, Ph.D.; Noah Snyder, Ph.D.

Funding Source: Worcester State Foundation Student Research, Scholarship, and Creative Activity Grant

Natural and human disturbances can result in changes in erosion rates. In New England, recent climatic changes have occurred along with changes in human land use. To examine the impacts of these changes, this study reconstructs past changes in erosion as recorded in a sediment core collected from Little Kennebago Lake, Maine. Observed changes in erosion are linked to logging activity and major rainfall-runoff events.

Near Repeat Crime

Victor Pellegrino

Faculty Advisor: William J. Hansen, Ph.D.

Near repeat crime theory suggests that once a certain crime has been committed within a city, the immediate surrounding area is at greater risk for that specific crime to occur again over a certain time frame. Data will show that a burglary hot spot will develop at a specific point in the city, spread over a certain area, and then diminish within a certain time frame.

Water and Irrigation Fluctuations in Leominster, Mass.

Sara Penniman

Faculty Advisor: William J. Hansen, Ph.D.

The city of Leominster, Mass., has been experiencing a fluctuation in water levels due to factors like decreased precipitation and increased evaporation. Data involved includes the United States Geologic Survey's hydrologic set, land use, and types of soil, as well as precipitation and evaporation rates. The goal of this research is to determine why the change is occurring and quantifying how much is involved.

Carbon Dynamics in Two Central New England Forest Stands

Leah Stanley

Faculty Advisor: Allison L. Dunn, Ph.D.

This research evaluates how carbon sequestration varies with tree species and stand age at Harvard Forest in Petersham, Mass. The diameters of 800 trees were measured in two study areas; tree mortality and recruitment were also determined. Field measurements were entered into Excel datasheets that contained data since 2008. The statistical analysis program "R" was used to determine biomass carbon by using species-specific allometric equations.

Life Cycle Analysis of Ionic Liquids

Leah Stanley

Faculty Advisor: Meghna Dilip, Ph.D.

Ionic liquids are greener solvent alternatives for applications such as cellulose processing. They also are non-flammable and non-volatile. To assess the "greenness" of ionic liquids, a life cycle analysis is required. Tools (FineChem, TEST) for toxicity will be calibrated using organic and heterocyclic building blocks. The life cycle analysis will then be conducted for selected ionic liquids.

At Patch Reservoir in Worcester, Mass.**

Lynne Stone

Faculty Advisor: William J. Hansen, Ph.D.

Organic pollutants and human-influenced environments have changed the fluctuation of dissolved oxygen and temperature. In the western part of Worcester, Mass., there is a small lake, Patch Reservoir, influenced by these factors. Data were collected through water quality samples by Worcester State University students and high-school students in 2017 from April through November. By measuring the factors, the overall condition of the lake can be determined.

HEALTH SCIENCES

Nutritional Habits and Perceived Risk of Type 2 Diabetes in College Students

Madeline Killeen

Faculty Advisor: Mariana Cecilia Calle, Ph.D.

A Commonwealth Honors Project

The purpose of this study is to better understand the perceptions and perceived risks of Type 2 Diabetes Mellitus among college students and how those perceived risks correlate with nutritional habits. This study will provide relevant information on the current thoughts and behaviors of Worcester State University students regarding nutritional habits and Type 2 Diabetes. This information can help health educators plan targeted interventions for this population.

Application of Life-Like Anatomical Models to Enhance Skills-Based Learning in Athletic Training Students Julia Snow

Faculty Advisor: Andrew J. Piazza, Ph.D., MCHES, CSCS

Given recent shifts in athletic training professional preparation, athletic training educators are challenged to provide innovative instruction techniques while maintaining instruction quality. The purpose of this project was to investigate the use of a life-like anatomical model to enhance athletic training pedagogy. Results from this project can provide educators with ideas to enhance their professional practice.

The Journey to Health and Wellness**

Ashleigh Howland

Faculty Advisors: Dean Bowen, CSCS; Andrew J. Piazza, Ph.D., MCHES, CSCS

The purpose of this project was to document the processes related to the implementation of the personal training program at Worcester State University. The financial data, foot traffic, and comparable programs were reviewed to assess the overall feasibility of implementing the program. A strong financial position and increasing foot traffic indicated a high level of program feasibility. Also, an assessment of comparable programs suggested capacity to implement the personal training program at Worcester State University's Wellness Center.

HISTORY AND POLITICAL SCIENCE

War on the People: Analyzing the Social Impact of American Drug Policy, 1968-2018++

Korey Dupont

Faculty Advisor: Erika Briesacher, Ph.D. A Commonwealth Honors Project

America must re-evaluate its current federal drug policy that has failed to yield measurable results. Instead, the current approach perpetuates systemic racism and targets the poor and vulnerable; it has contributed to the United States having the highest rate of incarceration in the world despite the continuous increase in prescription opioid and heroin-related deaths. This paper will examine the social impact the War on Drugs has had over 50 years, from 1968 to 2018.

All Roads Lead to Worcester: Transportation's Key Role in the Development of Worcester, Mass.

Benjamin Kuebler

Faculty Advisor: Tona Hangen, Ph.D.

This research describes and highlights the importance of transportation developments in Worcester, Mass., during the 19th century toward its growth from a stagnating rural township to a major industrial city.

Levi Lincoln, Jr., Stephen Salisbury II, and the Politics of Business**

Monique Manna

Faculty Advisor: Tona Hangen, Ph.D.

In the mid-19th century, Worcester can be placed on the map of a growing and prosperous hub of exporting manufactured goods. This research focuses on Levi Lincoln, Jr., and Stephen Salisbury, II, and their influence on the growth of Worcester.

The Chinese Legal System**

Jaymi-Lyn Souza

Faculty Advisor: Martin Fromm, Ph.D.

Because many laws are put in place to protect the rights of citizens, legal systems should, by extension, protect citizens' rights. The Chinese legal system should protect its citizens from exploitation, but in practice it rarely does. The court system in China does very little to help those who are underprivileged, but this is the result of party interference rather than legal ineptitude.

LIBERAL STUDIES

Curriculum for Elder Care Service Providers**

Courtney Jacques

Faculty Advisor: Susanna Meyer, Ph.D., CCC-A; Barbara Zang, Ph.D.

Elders experience increased life expectancy, and now more than ever quality care is imperative. To maintain elders' cognitive function and quality of life, caretakers need training to facilitate healthy aging. This curriculum offers providers techniques for appropriate and respectful care in a stimulating environment. Cognition, hearing, and well-being are included to ensure optimal care.

MATHEMATICS

Exploring Taxicab Geometry

James Brodeur

Faculty Advisor: Hansun T. To, Ph.D.

I will compare and contrast taxicab geometry, a non-Euclidean geometry, to Euclidean geometry. This comparison will include several Euclidean axioms that may or may not hold in taxicab geometry. I will look specifically at what certain shapes that we are familiar with in Euclidean geometry look like in taxicab geometry, and how their properties compare. My project will leave some questions for further research in taxicab geometry.

Group Properties of Rubik's Cubes

Eric Davis

Faculty Advisor: Hansun T. To, Ph.D.; Jason A. Hardin, Ph.D.

I discuss the group properties of Rubik's cubes with regards to two groups: the LEXI and REXI groups, denoted \$L\$ and \$R\$. I define the operation that generates each group and prove group properties for both. Both groups are subgroups of the set of legal permutations of the cubies, which itself forms a group called \$C\$. I calculate the order of \$C\$ and discuss and prove what constitutes a valid cube permutation.

Properties of Rubik's Cubes

Eric Davis

Faculty Advisor: Hansun T. To, Ph.D.

I discuss the group properties of Rubik's cubes: the LEXI (L) and REXI (R) groups. I define the operation that generates each group, and prove group properties for both L and R, including the Abelian property. I will also discuss isomorphisms to Z6 and demonstrate the commutativity of the L and R operations on the front face of the cube as well as the ramifications to prove what constitutes a valid cube permutation.

Optimize an Elementary School**

Jamie Jurgiel, Katelyn Salsgiver, Veronica Kimmens

Faculty Advisor: Tim Antonelli, Ph.D.

It is a difficult task for public school districts to design effective schools with a limited budget. We use constrained optimization to mathematically model the optimal elementary school with a budget of \$15 million. We design a school that aims to maximize the number of students enrolled while keeping class size and staffing within a reasonable range. We make several recommendations for the optimal elementary school based on results from our model.

Linear Algebra in X-Ray and Computed Tomography**

Deven Marcoux

Faculty Advisor: Hansun T. To, Ph.D.

Without both X-ray and Computed Tomography scans, modern society would be nowhere near where it is currently in medical care and education. These two medical imaging processes allow a look inside the human body without having to destroy the anatomy. The linear algebra involved in these processes is very complicated and advanced. However, it can be understood on a basic level when the foundational skills of linear algebra are emphasized.

ACCUPLACER Scores and Their Effect on a Survey of Mathematics Students at Worcester State University

Faculty Advisor: Hansun T. To, Ph.D.

Since 2014, the Worcester State University Math Department has undergone changes in its placement protocols for its humanities math course, Survey of Mathematics (MA 105). This research analyzes not only the implications of changing these placement methods, but also looks for predictors for scores on the ACCUPLACER placement test and predictors for success (defined as grades of A, B, or C) in MA 105.

Predicting Malaria Spread Using Dynamic Modeling**

Stephanie Rinaldi, Sonila Rredhi, James Brodeur

Faculty Advisor: Tim Antonelli, Ph.D.

Malaria is a mosquito-borne disease that is responsible for more than 400,000 deaths each year. To analyze the effects of various treatments and possible preventative measures, we mathematically model the spread of malaria over time. This work provides a baseline for modeling malaria that can eventually be extended to include more complex dynamics, such as the parasite's life cycle. Models like these are useful for optimizing disease control.

Mathematical Study of Map Projections

Elizabeth Skaza

Faculty Advisor: Hansun T. To, Ph.D.

This project is centered around the idea of maps and the mathematical properties they hold. There is a brief history given followed by the main classifications and categories of maps. Basic properties such as polar coordinates are discussed and then applied to a standard azimuthal projection. Following this is the analysis of the well-known Mercator Projection and the conformal property it holds.

NURSING

Promotion of Safe Sex and Sexually Transmitted Disease and Infection Awareness and Prevention at Worcester State University

Danielle R. Bayoux

Faculty Advisors: Ellen F. Fynan, Ph.D.; Roger S. Greenwell, Ph.D.

Funding Sources: The Health Foundation of Central Massachusetts, The Greater Worcester Community Foundation:

Fairlawn Foundation

A Commonwealth Honors Project

In this Community Health Improvement Plan project, changes have been proposed at Worcester State University to increase contraceptive barrier use during sexual activity, and to promote sexual health and awareness concerning sexually transmitted infection among students. Changes include the addition of condom dispensers on campus, a program to promote safe sex and sexual disease prevention, and an educational discussion during freshman orientation at the university.

Public Breastfeeding, Societal Views, and Breastfeeding Rates

Jessica Carneiro, Lauren Trant, Randi Ouillette *Faculty Advisor:* Paula Bylaska-Davies, R.N., Ph.D.

The purpose of the research was to discover if a more positive societal view of public breastfeeding would increase breastfeeding rates in the United States. The research indicated that education on breastfeeding is lacking to the public at large, leading to a negative depiction of breastfeeding.

The Relationship Between Family Presence and Patient Outcomes

Emilia Fanelli, Sarah Khallady, Briana Tammaro

Faculty Advisors: Paula Bylaska-Davies, Ph.D., R.N.; Kimberly Silver Dunker, DNP, R.N.

The relationship between patients and their families involved in their care has a direct influence on producing positive patient outcomes. The ways that health care professionals meet the needs of each patient and their family as a unit, along with the needs of patients who lack familial support, are the focuses of this research project.

A Need for Alternative Housing Opportunities for Mentally Ill Elderly Individuals**

Keona Gavin

Faculty Advisor: Kimberly Silver Dunker, DNP, R.N.

Elderly individuals who suffer from mental illness lack housing options when they are no longer able to live independently. They are too high functioning for nursing homes, yet require more specialized care than group homes can provide. "Medically ill, mentally ill" residential group homes will provide physical, medical, and psychiatric supports.

Emotional Support for Laboring Women: A Review of the Literature and Applications to Nursing Practice Jennette Hummel, Abigail Sniegocki

Faculty Advisor: Melissa D. Duprey, Ed.D.

A systematic analysis of the literature was conducted to explore whether having a designated support person during childbirth decreased the need for analgesic interventions. Review of the research confirms the presence of labor support (e.g., a spouse, midwife, or family friend) as being helpful in assisting the laboring woman cope with the pain more effectively, thus reducing the need for pharmacologic interventions.

Impact of Birth Plans on Maternal Birthing Experience

Jennifer Rearick, Colleen Walsh

Faculty Advisor: Kimberly Silver Dunker, DNP, R.N.

The purpose of the research is to explore the impact of birth plans on a postpartum woman's birth experience. Care during labor should be individualized and evolving as childbirth is unpredictable. Nurses are at the forefront of care for laboring mothers; acting as an advocate and maintaining women's sense of control can result in a better childbirth experience and, in turn, better outcomes for both mother and baby.

Lived Experiences of African Americans with Anxiety: Sociocultural Factors that Impact Treatment* Villeroy Tah

Faculty Advisor: Paula Bylaska-Davies, R.N., Ph.D.

Anxiety disorders are reported to be the most prevalent mental health disorders in the United States. Every year, millions of people are reportedly diagnosed with anxiety and only half of this number receive treatment. Sociocultural factors account for treatment gaps. Understanding the impact of cultural practices, adverse childhood experiences (ACEs), and social determinants of health (SDH) on health over a person's lifespan is critical to breaking the cycle of late diagnosis and treatment of anxiety.

Engaging Millennials in Learning: Developing a Pediatric Simulation Experience for Undergraduate Nursing Students*

Deborah O'Dowd, Christine Oleksyk

Faculty Advisor: Paula Bylaska-Davies, R.N., Ph.D.

Simulation is redefining instructional methods for nurse educators. An inexperienced student may now have a first clinical experience in a simulated environment with a simulated patient. High-risk procedures can be practiced repeatedly to refine techniques. Students gain confidence when first encountering a new patient scenario, and this confidence translates into greater self-efficacy in future nursing practice.

OCCUPATIONAL THERAPY

Ancillary Services and the Effects on Inclusion*

Tess Arruda

Faculty Advisor: Joanne Gallagher-Worthley, Ed.D., OTR/L, CAPS

The purpose of this study was to gain an understanding of the teachers' perceptions of inclusion; specifically, their views of the support they receive from ancillary services, and the effect a teacher's view has on the individual student and the classroom as a whole.

The Attitudes of College Students Toward Individuals with Intellectual Disabilities*

Kara Baillargeon

Faculty Advisor: Joanne Gallagher-Worthley, Ed.D., OTR/L, CAPS

This study sought to examine attitudes of college students toward individuals with intellectual disabilities (IDs). The study looked to determine how positive or negative attitudes were, if these attitudes varied by major, and if prior interactions impacted these attitudes. Individuals with IDs are marginalized as a group and are impacted by the attitudes of society, which is a concern to occupational therapists.

Student Experiences of Bullying in College*

Madison Barron

Faculty Advisor: Joanne Gallagher-Worthley, Ed.D., OTR/L, CAPS

The purpose of this study was to further investigate the presence of bullying on college campuses in relation to student experiences and free time, as well as the awareness of support services on campuses.

Improving the Usability of the WSU Learning Garden**

Michelle Beaulieu, Keri Riefenhauser, Erin Stern

Faculty Advisor: Joanne Gallagher-Worthley, Ed.D., OTR/L, CAPS

A Commonwealth Honors Project

This research project will inform the Urban Studies Department and the Worcester State University (WSU) community about realistic and usable adaptations that can be implemented in the WSU Learning Garden. We will apply our knowledge of the current garden layout and our occupational therapy education to ensure that individuals with any motor, cognitive, or sensory deficits are capable of utilizing the garden for educational and recreational purposes.

The Implementation of Learning Technologies from the Perspective of Occupational Therapy Practitioners and Classroom Teachers*

Jaclyn Becotte

Faculty Advisor: Joanne Gallagher-Worthley, Ed.D., OTR/L, CAPS

The purpose of this study was to compare and contrast the implementation of learning technologies from the perspective of occupational therapy practitioners and classroom teachers.

Assistive Technology iPad Holder

Sarah Brakenwagen, Erin Moloney, Danielle Attardo, Sarah O'Leary, Kathryn Salemme

Faculty Advisor: Cheryl B. Lucas

The Individuals with Disabilities Education Act (2004) requires schools to provide assistive technology devices for equal access to services. Occupational therapy students created iPad holders designed for a wheelchair and a desktop for physically, cognitively, and perceptually challenged children. Biomechanical positioning, ease of mobility, safe materials, and creative, child-friendly designs were considered.

Self-Esteem in College Sports*

Samantha Clougherty

Faculty Advisor: Joanne Gallagher-Worthley, Ed.D., OTR/L, CAPS

This study explored the relationship between participation in intercollegiate sports and the self-esteem levels of college students. The self-esteem levels were further compared between male and female student-athletes, as well as between student-athletes with varied years of experience to determine if there were any differences.

The Use of Evidence-Based Practice by Occupational Therapy Practitioners with Less than 10 Years of Clinical Experience*

Paul Cule

Faculty Advisor: Joanne Gallagher-Worthley, Ed.D., OTR/L, CAPS

This study explored the use of evidence-based practice (EBP) by occupational therapy practitioners (OTRs) with less than 10 years of clinical experience. The factors that contributed to their use/disuse of EBP, along with their attitudes/perceptions and experiences surrounding EBP were explored.

The Effects of Weighted Pens on the Performance and Satisfaction of Handwriting in Older Adults* Maria D'Angelo

Faculty Advisor: Joanne Gallagher-Worthley, Ed.D., OTR/L, CAPS

The objectives of this study were to examine the effect of the use of a weighted pen on older adults' performance in a writing activity, the effect the use of the weighted pen had on older adults' satisfaction with their performance in writing, and the relationship between older adults' satisfaction with the use of the weighted pen and the likelihood they would use one in their day-to-day lives.

Accessibility of Farmers Markets

Rachel Folan, Dana Morgan

Faculty Advisor: Joanne Gallagher-Worthley, Ed.D., OTR/L, CAPS

A Commonwealth Honors Project

Everyone should have access to fresh, local produce if they desire; however, people with disabilities may be limited in accessibility. We will utilize the Community Health Environment Checklist to assess farmers markets for individuals with mobility, vision, and hearing disabilities. Recommendations and changes will be given to the sites, if needed, to enhance each market's accessibility.

The Effectiveness of a Matter of Balance on Community-Dwelling Older Adults*

Gayle Foley

Faculty Advisor: Joanne Gallagher-Worthley, Ed.D., OTR/L, CAPS

This study examined the effectiveness of the fall prevention course, A Matter of Balance, on quality of life. It also aimed to determine what skills were learned during the course and what skills were going to be maintained after the course.

Accessibility of Soup Kitchens

Kimberly Lapointe, Mikayla Miranda

Faculty Advisor: Joanne Gallagher-Worthley, Ed.D., OTR/L, CAPS

A Commonwealth Honors Project

This project examined the accessibility of soup kitchens in the Worcester area using the Community Health and Environmental Checklist (CHEC). Four soup kitchens were assessed in domains of mobility, vision, and hearing to determine how accessible the environments were for persons with these impairments. Recommendations informed through the CHEC assessment and evidence-based research were given to each soup kitchen.

Change in Occupations from Community Living to Assisted Living*

Brianna McCormack

Faculty Advisor: Joanne Gallagher-Worthley, Ed.D., OTR/L, CAPS

This study explored how transitioning from community living to an assisted living (AL) community affected participation in occupations and life satisfaction. The purpose of the study included determining what types of occupations were most often participated in, and how much assistance was given to residents within their day.

Effects of Sensory Processing Patterns on Engagement in Occupations of Older Adults*

Kelsey Miskis

Faculty Advisor: Joanne Gallagher-Worthley, Ed.D., OTR/L, CAPS

This study explored the sensory-processing patterns of older adults and how it impacts their participation in meaningful occupations. This study also looked at how the sensory-processing needs of people change throughout their lifespan and how sensory-processing patterns of older adults impact their social participation.

Examining the Perspectives of the Impact of Home Modifications in Community-Dwelling Older Adults*

Alexandria Moriarty

Faculty Advisor: Joanne Gallagher-Worthley, Ed.D., OTR/L, CAPS

This qualitative study explored the impact of home modifications from the perspectives of community-dwelling older adults who used them. The perceptions of home modifications are helpful in facilitating a client-centered relationship, home evaluation, and intervention process in occupational therapy to enable safe, independent aging in place.

College Students' Perceptions of Owning Companion Animals*

Nicole Paul

Faculty Advisor: Joanne Gallagher-Worthley, Ed.D., OTR/L, CAPS

This qualitative study examined college students' perceptions of owning a companion animal. The study specifically focused on the impact that companion animals had on students' perceptions of content, social participation, and daily routines on campus.

Social Engagement on a College Campus*

Meghan Powers

Faculty Advisor: Joanne Gallagher-Worthley, Ed.D., OTR/L, CAPS

Participation within one's community has been shown to benefit individuals' physical, psychological, and social well-being. Unfortunately, the majority of individuals experiences a decrease in community engagement during early adulthood, specifically during the time spent in college. This study examined the factors preventing undergraduate students from engaging in campus life, as well as their feelings of belonging on campus.

Individuals with Intellectual or Developmental Disabilities in the Workforce*

Courtney Salisbury

Faculty Advisor: Joanne Gallagher-Worthley, Ed.D., OTR/L, CAPS

The purpose of the study was to determine the quality of requisite supports and services to assist adults with intellectual or developmental disabilities (IDD) in obtaining and maintaining employment in competitive working environments. Efficacy of these supports and services in assisting individuals reach a level of competency and success, as defined by their employers, were studied as well.

The Use of Picture Books to Educate Typically-Developing Children About Autism***

Beth Spinazzola

Faculty Advisor: Joanne Gallagher-Worthley, Ed.D., OTR/L, CAPS

The purpose of this study was to educate, using picture books, typically-developing children about autism and identify the effect of this education on social participation within inclusive classrooms.

The Influence of Leisure Activities on Quality of Life in People with Huntington's Disease*

Molly Tibbetts

Faculty Advisor: Joanne Gallagher-Worthley, Ed.D., OTR/L, CAPS

This study examined how satisfied community-dwelling adults with Huntington's disease were with leisure activities, and the barriers to these activities. The relationship between the level of satisfaction and perceived quality of life was also examined.

PHILOSOPHY

Washington, D.C., Leadership Conference

Kaila Bavin, Katelyn Stevens

Faculty Advisor: Meghna Dilip, Ph.D.

We will be presenting information about our trip to Washington, D.C., with the Leadership Program during spring break. The presentation will include the outcomes of presenting an "ask sheet" to different people who work in Washington, D.C., in an attempt to push through an agenda which the Leadership Program as a whole decided was important. The presentation will include some non-political components of the trip as well.

PSYCHOLOGY

The Effects of Participation in Activities on Well-Being

Catherine Lydia Lin Bergeron

Faculty Advisor: Nicole Rosa, Ph.D.

Funding Source: Worcester State Foundation Student Research, Scholarship, and Creative Activity Grant

A Commonwealth Honors Project

Socioemotional, cognitive, and physical well-being can be maintained through participation in activities and social engagement. It is important for both older and younger adults to be involved in stimulating activities to promote positive well-being across the lifespan. The current study explored the impact that participation in activities had on overall well-being among both older and younger adults.

Repetitive Negative Thinking and Non-Judging Mediate Stress Appraisal - Mental Distress Relationships

Meagan Ciesluk, Robert Salvucci, Ngoc Nguyen

Faculty Advisor: Champika K. Soysa, Ph.D.

Funding Source: Worcester State Foundation Student Research, Scholarship, and Creative Activity Grant

We studied repetitive negative thinking (RNT) and mindful non-judging as concurrent mediators in stress appraisal - depression/anxiety relationships in 233 undergraduates. RNT and mindful non-judging mediated all relationships, establishing their transdiagnostic roles in either exacerbating or alleviating mental distress. Our findings could inform interventions to enhance college success and retention.

Effects of Visual Experience on Feedforward and Feedback Processing in the Primate Visual System**

Amalia K. Davis

Faculty Advisor: Ryan E.B. Mruczek, Ph.D.

Funding Sources: Worcester State Foundation Student Research, Scholarship, and Creative Activity Grant; Summer Undergraduate Research Grant

Repeated exposure to the same or similar objects leads to faster and more accurate identification. However, the neural changes in the brain that are connected to these behavioral changes remain unclear. Reanalyzing a previous dataset, we determined that long-term familiarity with objects leads to stronger feedback connections within the visual system.

Public Versus Private Colleges and Universities: Differences in Mental Distress Among Undergraduates

Kathryn Fokas, M.A., Robert Salvucci, Alaza Merrill, Kaitlin Mann, Meagan Ciesluk *Faculty Advisor:* Champika K. Soysa, Ph.D.

Symptom severity of depression, anxiety, and stress was higher in public university students (N = 189) than among private university students (N = 374). Previous research indicated that first-generation college students experienced more stressors than their continuing-generation peers. Our findings reflect the need for mental health services to improve student well-being and retention at college.

The Effectiveness of Fidget Spinners on the Ability to Focus

Dylan Foden

Faculty Advisor: Nicole Rosa, Ph.D. A Commonwealth Honors Project

The present study explored the impact of stress-relieving tools on learning. The participants were assigned to one of three groups: fidget spinner, stress ball, or control. All participants watched a video lecture and then completed tests of comprehension and meta-comprehension. Differences in performance across the three groups were examined to assess the impact on learning.

Cognitive Supports for Visual Comparison in Middle School Science and Math Textbooks

Monica Greenlaw, Kelsey Bedard, Amy Nguyen, Katelyn Norsworthy

Faculty Advisor: Benjamin Jee, Ph.D. A Commonwealth Honors Project

Math and science learning involves the comparison of visual examples. We coded middle school math and science textbooks in terms of their supports for comparison. Our coding revealed several relevant factors, including the spatial alignment of elements in a figure, the presence of intervening information, and the color scheme. Overall, textbooks contained images that could help as well as hinder the comparison process.

Perfectionism, Cognitive Appraisal, and Repetitive Negative Thinking Predict Depression and Anxiety

Alaza Merrill, Kaitlin Mann, Robert Salvucci, Meagan Ciesluk

Faculty Advisor: Champika K. Sovsa, Ph.D.

Funding Source: Worcester State Foundation Student Research, Scholarship, and Creative Activity Grant

Maladaptive perfectionist dissatisfaction, threat appraisal, and repetitive negative thinking significantly and positively predicted both depression and anxiety severities in N=233 first-year undergraduates. On the other hand, challenge appraisal significantly and inversely predicted the same. These transdiagnostic findings may inform interventions to decrease/prevent mental distress in undergraduates.

Student Service Members/Veterans at Worcester State University: Sense of Support, Strategies for Learning, and Adjustment to College

Steve I. Rose

Faculty Advisor: Brandi Silver, Ph.D.

Student service members and veterans (SSM/V) share many traits that impede their transition to college. This study was a quasi-experiment which compared SSM/V to traditional and non-traditional students in three areas: sense of support, adjustment to college, and motivated strategies for learning. The findings from this study could be used to help colleges better serve the SSM/V community in the transition from the military to academia.

Future Directions in Treating Traumatic Brain Injury**

Megan Rouillard

Faculty Advisor: Brandi Silver, Ph.D. A Commonwealth Honors Project

Traumatic brain injury is one of the leading causes of injury-related death and disability in the United States. There are currently no biomarkers that can be used to diagnose this injury and no effective treatments. In this review, we discuss epigenetic changes that occur after head injuries that may lead to efficient biomarker tests as well as provide novel targets for pharmaceutical treatments. A meta-analysis of the efficacy of promising drugs was also conducted.

Juvenile Rule-Breaking and Attention Problems Differentially Predicted Fire-Interest vs. Firesetting George Dilling

Faculty Advisor: Champika K. Soysa, Ph.D.; Monica Ferraro, Ph.D.; Robert Stadolnik, Ph.D.

We studied N = 300 juvenile firesetters. Both self-reports and parent-reports of juvenile firesetters' rule-breaking behavior and attention problems significantly and positively predicted their fire-interest. On the other hand, in both self-reports and parent-reports, juvenile firesetters' rule-breaking behavior, but not their attention problems, significantly and positively predicted their fire-related activity.

SOCIOLOGY

The Struggles of Students with Disabilities**

Antoinette Ansong

Faculty Advisor: Alex Briesacher, Ph.D.

In my project, I will attempt to identify issues that students with disabilities face on campus with peers, instructors, and the campus environment. The goal of this research is to identify the struggles of these students, and the effects of these struggles on their education.

Struggles of Urban Exclusion: The Backbone of Industrial Worcester**

Mendrick Banzuela

Faculty Advisor: Francisco Vivoni, Ph.D.

With the recent rise of xenophobia, ethnic groups are exploited through exclusion. This paper discusses "the stranger" of ethnic groups throughout industrialized Worcester history and observes them through conflict theory and structural functionalism. This combination creates the "yin-yang theory," which supports the importance of diversity seen in Worcester's inclusive efforts as a leading example for other communities.

Race, Class, and Financial Aid**

Sofia Ceron

Faculty Advisor: Alex Briesacher, Ph.D.

The goal of this research is to assess student experience with financial aid. Data was collected through a survey of Worcester State University students to construct an intersectional analysis of experiences.

Defining "African American" in America**

Nana Darkwa

Faculty Advisor: Alex Briesacher, Ph.D.

This research focuses on defining the term "Black" or "African American" as a categorical term and race in the United States through interviews of students, faculty, and other professionals outside academia. The report looks into the history of African Americans and how the term came to be used today, a greater in-depth understanding of nationality, and the constant internal battle within their race to feel accepted in society.

The Production of Queer Spaces as Social Movements: A Study in Gay Nightlife in Worcester**

Ashley Dziejma

Faculty Advisor: Francisco Vivoni, Ph.D. A Commonwealth Honors Project

Lesbian, Gay, Bisexual, Transgender, and Queer (LGBTQ+) politics have been influenced by the socio-political use of space. Here, space is studied through a Marxist lens where space is a product of social forces and serves as a tool of thought and action. Through critical analysis of queer texts with participant observations, this paper chronicles the importance of queer spaces, challenges to them, and the Internet as a platform of queer space.

Breaking Down Stigmas**

Shelby Fontaine

Faculty Advisor: Alex Briesacher, Ph.D.

This study will focus on student-athletes' performance in the classroom and if it reflects specific stigmas that surround them. Athletes face comments every day that may or may not affect the way they perform in the classroom and their outlook on themselves. The goal of my study is to see if the views of student-athletes and their abilities to perform in the classroom and in their respective sports are true.

"Trumpets of Eviction:" Puerto Rican Poverty and Great Brook Valley in Worcester, Mass."

Frankie Franco

Faculty Advisor: Francisco Vivoni, Ph.D.

Puerto Ricans make up the majority of Great Brook Valley tenants. This paper will explore Puerto Ricans' impoverished status in Worcester, their need for housing assistance, and the dangers of leaving or being evicted from an established Puerto Rican community.

Continuing Education Students' Experiences at Worcester State University**

Lauren Healy

Faculty Advisor: Alex Briesacher, Ph.D.

My research will look closely at the experiences of continuing education students attending Worcester State University; specifically, if continuing education students have the same access to resources and if they receive the same treatment by the University that day students receive. Lastly, I will look at how being a continuing education student can affect a student's academic success and journey toward graduation.

Immigrant Influences and Local Socio-Economic Impacts: Immigrant Entrepreneurs in Worcester, Mass.**

Colin Thomas Houle

Faculty Advisor: Francisco Vivoni, Ph.D.

The purpose of this research project will be to analyze and assess the socio-economic influences of immigrants by focusing primarily on their roles in urban environments within the United States. Using the city of Worcester, Mass., we will be collecting and analyzing qualitative data through structured interviews with immigrant entrepreneurs. Interviews will be recorded, transcribed, and archived for further research.

First-Generation Motivational Factors**

Rebekah LaHair

Faculty Advisor: Alex Briesacher, Ph.D.

First-generation college students comprise an increasing percentage of student populations. Having higher expectations for college academic achievement, often facilitated by students' home life, might be related to higher completion rates. First-generation students might have a slight motivational disadvantage compared to non-first-generation students, leading to lower rates of degree completion. This research aims to fill the gap in the current literature dealing with motivational differences between first- and non-first-generational students.

Barriers to Student Success: Mental Health and Campus Access**

Katherine Melican

Faculty Advisor: Alex Briesacher, Ph.D.

According to the World Health Organization, mental and behavioral disorders are the primary disability among young adults that will develop before the age of 25. That makes college a crucial time in a young adult's life. The goal of this research is to assess the impact of mental health stigmas on Worcester State students and their drive to seek on- or off-campus assistance.

Student Commuters and Residential Students**

Phyllis Moore

Faculty Advisor: Alex Briesacher, Ph.D.

This study will focus on the relationship between living arrangements and the academic performance (grade point average) of first-year and full-time undergraduate students at Worcester State University. The hypothesis I will analyze is that college students who share an on-campus residence with roommates have higher levels of stress than those who share an off-campus residence with roommates.

Belongingness and Performance in the Undergraduate Classroom**

Janet Novack

Faculty Advisor: Alex Briesacher, Ph.D.

This research attempts to identify barriers that prevent Worcester State University students from feeling confident in their work and performance in the classroom. The goal of this research is to identify the pattern and relationship of Worcester State University students' level of belongingness both on campus and in their major-specific classrooms and its effect on academic self-efficacy and performance.

Students' Food and Students' Mood: Analysis of Health, Nutrition, and Happiness**

Jacob Rodriguez

Faculty Advisor: Alex Briesacher, Ph.D.

The purpose of this study is to evaluate the relationship between physical health, mental health, and nutrition of students at Worcester State University.

The Social Implications of Art and Higher Education**

Amber Wheaton

Faculty Advisor: Alex Briesacher, Ph.D.

This study is to gauge how students feel about different aspects of the art program at Worcester State University. It will explore how students feel about these courses, and how the courses fit their schedules, as well as the off-campus location, the shuttle, and how students navigate transportation to this center for art courses they are enrolled in. These aspects will be connected to how art and higher education relate.

URBAN STUDIES

A 65-Year-Old WSU Graduate Student's Quest to Open a Museum to Honor His Late Father and the Metal Art He Created*

Robert Megerdichian

Faculty Advisor: Anne W. "Shiko" Gathuo, Ph.D.

I seek recognition of my late father, Abraham, as a bona fide artist. A skilled machinist, he would machine artistic interpretations of everyday objects from scraps of solid metal as gifts for family. With Worcester State training and contacts, I aim to establish a museum to house this exquisite metal art that will be a destination for industrial art lovers. This poster showcases some pieces and polls the viability of the proposed museum.

Welcome to Worcester? Inclusion and Exclusion in the Public Spaces of New England's Second Largest City**

Peter J. Peloquin

Faculty Advisor: Thomas E. Conroy, Ph.D.

This paper will show where and how Worcester has created spaces that are inclusive and exclusive in three ways: decisions made to accommodate the population's lifestyle needs in public spaces, decisions made for accessibility in the city's public spaces, and decisions made for citizen participation in the public process. Public spaces that will be taken into consideration include the Worcester Common, Elm Park, and Crompton Park, in relation to Worcester's Public Policy.

VISUAL AND PERFORMING ARTS

Equipoise

Veda Marie Bleau

Faculty Advisor: Catherine Wilcox-Titus, Ph.D.

Through research and original paintings, *Equipoise* demonstrates the influence of mathematics on art. Symmetry and balance have always been important to ancient artists. Modern artists, such as M.C. Escher and Simon Beck, have made extensive use of mathematics. M.C. Escher used grids in his prints. Simon Beck uses intricate geometric designs on a large scale. This project demonstrates that the common thread of symmetry and balance runs deep in art.

Acting through Analysis: On Shakespeare, The Seagull, and Stanislavski

Jasper E. Bliss

Faculty Advisor: Catherine Wilcox-Titus, Ph.D.

My project focuses on analysis and research into my role as Nikolayevna Arkadina in the fall 2017 production of Anton Chekhov's play, *The Seagull*. My acting draws upon an apprenticeship with Commonwealth Shakespeare Company in the summer of 2017, and systems developed by Konstantin Stanislavski and his followers. My project was also enriched by drawing upon my previous work as a costume designer.

Here to There: An Interdisciplinary Presentation of Music and Dance

Nicholas R. Chiancola

Faculty Advisor: Catherine Wilcox-Titus, Ph.D.

Music infiltrates our minds and resonates with our feelings. This presentation combines music and dance in five variations that communicate a variety of emotions. Subtle changes in key, major or minor, meter, tempo, and tone color achieve that result. Dance movements amplify the emotions. Music is often taken as simply an enjoyable craft. This presentation demonstrates it is a more complex multi-sensory experience that extends past the initial performance.

See/Say

Jeffrey Ellis

Faculty Advisor: Catherine Wilcox-Titus, Ph.D.

Art has been vexed by a division between art for art's sake and art made for commercial or propagandistic ends. This project uses a variety of printmaking techniques to project a clear political message while retaining a strong aesthetic content. The goal is to blur the line between art meant to advertise and art that is purely for visual consumption. The finished work informs without telling and speaks without words, while also being aesthetically compelling.

Lost in the Closet

Alexander Romito Gardner

Faculty Advisor: Catherine Wilcox-Titus, Ph.D.

This project tells the story of a gay male struggling with his identity. The performance combines genres of music, jazz and musical theater. Thematically, the genres are united by the feelings of alienation of the protagonist from mainstream society. Crucially, he eventually discovers ways to be comfortable with his identity. In the heteronormative society that we live in, it is crucial to show that there is not a limited number of "ways to be gay."

Using Art to Bridge Gaps Between Cultures**

Rebecca Tenen

Faculty Advisors: Stacey Parker, Kyle Martin, Catherine Wilcox-Titus, Ph.D.

Funding Source: Worcester State Foundation Student Research, Scholarship, and Creative Activity Grant

To discover ways art can be used universally, I observed art from the ancient world. I began to theorize that the fewer individual components in a piece of art, the less that people have to identify with individually. To test this theory, I turned sounds into images and then back into sound. The result of organized simplicity, invoking an equal response, could be a step closer to understanding how art can bridge gaps between cultures.

WORLD LANGUAGES

Hugo Boss: Behind the Uniform**

Jasmine Asassy

Faculty Advisor: Jeanne H. Moore, Ph.D.

Funding Source: Worcester State Foundation Student Research, Scholarship, and Creative Activity Grant

In 1931, Hugo Boss received full membership of the Nazi Party. He was a member of the Schutzstaffel, also known as the SS or the Protection Squadron. This was a militarized force organized and held under Adolf Hitler and the Nazi Party. This became one of the most powerful organizations in Nazi Germany and later on would be responsible for millions of genocidal killings, specifically of people of Jewish descent, during the years of the Holocaust.

Business Through the Holocaust**

Angelo Brito

Faculty Advisor: Jeanne H. Moore, Ph.D.

I am going to ask you one simple question: What is the main goal of a business? If you answered, "making a profit," you are correct. But what are the extremes a company will go through just to make a profit? Some companies will overcharge you, outsource materials, and some will go as far as conducting business with very shady people. In this paper, I will be going into the past of many companies that turned a blind eye just to make a profit.

Culturally Sensitive Nutrition Care of the Spanish-Speaking Patient**

Julia Cohen, Jessica Fournier, Alyssa Welch, Yensi Guerra

Faculty Advisor: Antonio Guijarro-Donadiós, Ph.D.

Funding Source: Provost Series Democracy and Diplomacy Grant

Professional dietitians must prepare themselves to meet the challenge of communicating messages to the Spanish-speaking population in the United States. Our presentation will include culturally sensitive nutrition care topics such as differences in dietary habits within the Latino community, establishing a counseling relationship, the Latino health profile, and effective communication.

Genocide: Good for Business?

Brandon Grierson

Faculty Advisor: Jeanne H. Moore, Ph.D.

This poster presentation discusses the corporations, both foreign and domestic to Germany, that were involved with the Nazis and Adolf Hitler during World War II, and the extent of each of their collaborations.

Yekke**

Liberty MacMillan

Faculty Advisor: Jeanne H. Moore, Ph.D.

"Yekke" (translated from German, meaning "Jew of German-speaking origin") is a historical fiction short story following a non-practicing Jewish man by the name of Peter Olzman as he attempts to save his life and flee the country. Along the way, he gets help from questionable figures, narrowly escapes death, and comes to terms with his mother's religion as well as the horrors inflicted by not only the Germans, but the war as a whole.

Latino Nutrition and Dietetics Issues**

Sabrina Paulson, Jamie Cruz, Ruba Dabbagh, Lizbelle Espinal

Faculty Advisor: Antonio Guijarro-Donadiós, Ph.D.

Funding Source: Provost Series Democracy and Diplomacy Grant

Spanish-language nutrition education materials must be culturally appropriate and reflect the diversity of Latino culture. This poster is based on a project that was developed to inform Latinos at the Hector Reyes House about nutrition and dietetics issues. Because the group members primarily speak Spanish, our presentation and interviews were conducted in Spanish.

Tyranny, Restoration, and Censorship**

Elliot Mercier, Joan Spinazola

Faculty Advisor: Jeanne H. Moore, Ph.D.

For our research project, we delved into the historical background surrounding literature in two different time frames: The Restoration period of England, and post-World War I Germany, 1918 to 1945. Events brought up to demonstrate these time periods will be the British Civil War (1642-1651) and the Night of the Long Knives for England and Germany, respectively. Authors mentioned during this investigation will include the Scholl twins and Fritz Gerlich for the German section, and Alexander Pope and Jonathan Swift for the discussion about England.

Jesse Owens' Encounters with Hitler and the United States**

Derick Mireku

Faculty Advisor: Jeanne H. Moore, Ph.D.

I am going to present a study of Jesse Owens and his history of being discriminated against as an athlete of color that followed him through all his career. For example, even when he won four gold medals in the 1936 Olympics, Hitler refused to shake his hand because Owens was a man of color. The project traces the rise of Jesse Owens and the history of the Olympics in Berlin, where he was discriminated against by Hitler. It will also have bearing on the problem of racism today.

The Art of War**

Arden Reinhardt

Faculty Advisor: Jeanne H. Moore, Ph.D.

"The Art of War" describes the ban against expressionism in Nazi Germany. Hitler used art as a form of propaganda during the Holocaust and believed that the Jews influenced expressionism and modern art. This project will focus on the 1937 exhibit of degenerate art and the politics behind the prohibition of expressionism and its artists.

WWII on the Eastern Front: Kursk**

Dalton Smith

Faculty Advisor: Jeanne H. Moore, Ph.D.

This story, titled "Kursk," details the challenges faced by a German tank officer during the Second World War. The author includes many historical details, an example being the equipment used and the fact that many German soldiers did not support Hitler. This story focuses on the Eastern Front of the war, mainly the battle of Kursk, and shows the hardships and instances of luck faced by the narrator that preceded his struggle in the Battle of Kursk.

Bertolt Brecht and German Theatre's Resistance to the National Socialist Movement****

Joan Spinazola

Faculty Advisor: Jeanne H. Moore, Ph.D.

With the rise of Hitler's Nazi party, theaters were closed, literature burned, and the new art held up to ridicule. But an underground movement kept hope alive. I will explore how theatre used satire to mock those who restricted personal freedoms and to educate and warn the world of the dire consequences that could follow.

WWII on the Eastern Front: Kalter Sommer**

Jacob Zandi

Faculty Advisor: Jeanne H. Moore, Ph.D.

The story "Kalter Sommer" details the conscription of the anti-Nazi guitarist Paul Wilhelm. Wilhelm, who recently returned from America, is drafted by the Wehrmacht and, fearing for the lives of his family, voluntarily reports for duty. After going through basic training, Wilhelm's unit is sent to the Eastern Front to fight against the Red Army. Wilhelm as a result has to deal with the fear of death and homesickness that comes with deployment.

Celebration of Scholarship and Creativity

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Celebration of Scholarship and Creativity Event Contributors

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Celebration of Scholarship and Creativity
presentations and the staff whose work supports
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