
Niagara University
Undergraduate Research Conference



Friday, April 27, 2018

St. Vincent's Hall and Russell J. Salvatore Dining Commons

AGENDA

Hospitality Room for Participants and Faculty Sponsors

(Coffee and Donuts)

8:30 AM – 12:00 PM

St. Vincent's Hall, Room 310

Panel Presentations

9:00 AM – 2:20 PM

St. Vincent's Hall

(Schedule Follows)

Lunch for Participants and Faculty Sponsors

11:30 AM – 3:00 PM

Russell J. Salvatore Dining Commons at Clet Hall

(Participants will receive a lunch voucher upon check in at Russell J. Salvatore Dining Commons)

Poster Presentations

1:00 PM – 3:00 PM

Russell J. Salvatore Dining Commons

I want to extend a warm welcome to the 2018 NU Undergraduate Research Conference sponsored by the University Honors Program. Niagara University's dedication to research and academic excellence will be on full display during today's conference. I encourage you to attend as many of the panel and poster presentations as you can in order to show your support for the young scholars in our midst and to learn about the exciting research taking place here at Niagara. I am confident that the presentations will be informative and educational.

I want to thank Mrs. Jennifer Ebbole, Administrative Coordinator for the Honors Program, who has done most of the behind-the-scenes work necessary to make this conference a reality. Without her, there would be no conference. Finally, I want to thank all the participants and their sponsors for their hard work. The University Honors Program wishes them all the best in their future research and endeavors.

Dr. Michael Barnwell

Director, University Honors Program

PANEL PRESENTATIONS

9:00 AM – 1:25 PM

ST. VINCENT'S HALL 407

10:10 AM

History/International St-General: Dr. Robert Kane

Maine Walker

“Conflict in the South China Sea”

11:15 AM

History: Dr. Thomas Chambers

Miles Michienzi

“Ex Animā Actas: Beliefs Translated to Battle”

12:20 PM

History: Dr. Mustafa Gokcek

Alexander Bush

“Role of Professional Revolutionaries in the Formation of the 1917 Soviets in Russia.”

Ryan Dutschman

“The Soviet Invasion of Afghanistan: A New Perspective”

Samantha Kaczor

“Stalin's Revisionism: The Rewriting of the Russian Revolution”

Elizabeth Marohn

“Rock and Roll in the Soviet Union”

9:00 AM – 1:25 PM

ST. VINCENT'S HALL 312

9:05 AM

Philosophy: Dr. Alexander Bertland

Christine Burke

"Marcuse in the Advertising Age: The Rise of One-Dimensionalism in the Consumer Society"

12:20 PM

Communication Studies: Dr. Carrie Teresa

Emily Parisi

"Christianity, What's the Point? Media Stereotypes of Christians and an Ethnographic Review of Their Lives"

1:25 PM

Communication Studies: Dr. Carrie Teresa

Nico Santangelo

"Niagara Falls: The Rhetorical Collapse of Urban Renewal"

9:00 AM – 12:10 PM

ST. VINCENT'S HALL 309

9:05 AM

Finance: Edward Hutton

Natalia Antropova

"Evaluating the Impact of the Liquidity Coverage and Tier 1 Capital Ratios for United States Banking Institutions"

11:15 AM

Computer & Information Science: Dr. Yonghong Tong

Jacobe Wendell

"Machine Augmented Environments"

Leo Kane

"Smart Hockey Arena"

9:00 AM – 1:15 PM

ST. VINCENT'S HALL 306

9:05 AM

Statistics: Dr. Patrick Tutka, Dr. Marlo Brown

Dustin Dorsino

"Positional Salary Cap Allocation and its Relationship with On-field Performance in the NFL"

11:15 AM

Psychology: Dr. Susan E. Mason

Sophia Smith

"An Examination of Social Inequalities that Impact Older Women"

Sophia Smith

"A Review of Intergenerational Attitudes Toward Older Adults Before and After Interaction"

Abbie Hibschi

"The New Age of Creative Expression: The Effect of Blogging on Emotional Well-Being"

Olivia Rizzacasa

"Assessing College Student-Athletes' Stress and its Potential Effects on Performance"

Brianna Chupa

"The Correlation Between Childhood Trauma and Later Life Substance Abuse"

9:00 AM – 1:15 PM

ST. VINCENT'S HALL 205

9:05 AM

Microbiology: Dr. Mark Gallo

Shanique Service

"Norepinephrine's Effect on Enterobacteriaceae Growth, Communication, and Pathogenicity"

10:10 AM

Biology: Cassandra Marnocha

Haley Parker

"Cycling of inorganic sulfur by Acidithiobacillus sp. provides insights into the complex geochemistry of the Iroquois National Wildlife Refuge acidic springs"

POSTER PRESENTATIONS

Analytical Chemistry: Dr. Robyn E. Goacher

Maham Alamgir, Brent Boleslav

“Distributed Pharmaceutical Analysis Laboratory (DPAL): Metformin Analyzed via HPLC.”

Biochemistry: Dr. Robyn E. Goacher

Emilee Welton, Julia Freemire

“Optimizing the 3, 5-Dinitrosalicylic Acid (DNS) Assay for Glucose and Xylose in Varied Buffers”

Biology: Cassandra Marnocha

Lauren Augustyniak, Haley Parker

“ACIDITHIOBACILLUS SP. ISOLATE MEDIATES COPPER LEACHING IN IROQUOIS NATIONAL WILDLIFE REFUGE ACID SPRINGS”

Biology: Dr. Robert Greene

Christian Domin

“Measuring Apoptosis in HeLa Cervical Cancer Cells and CAL-27 Oral Cancer Cells After Treatment with Curcumin and Photodynamic Therapy”

Biology: Dr. Mark Gallo

Janelle Fancher, Maria Kajdasz, Shania van Nuland

“Isolation of Bacteriophage in Staphylococcus Species”

Biology: Dr. Mark Gallo

Rene Hoover, Carley McMullen

“Effects of Plastic Polymer Composition on Early Microbial Association in a Freshwater Environment”

Biology: Dr. Mark Gallo

John Klem

“Rate of Plasmid Loss When Selective Pressure is Removed: Use It or Lose It”

Biology: Cassandra Marnocha, Dr. William Edwards

Joy O'Brien, Kaleigh Block

“Analyzing the Switch: Oxygenic and Anoxygenic Photosynthesis in Cyanobacteria”

Biology: Dr. Robert Greene

Britteny Purcell

“Vitamin D Effects on PDT Apoptosis in MCF-7 Cells”

Biology: Dr. Mark Gallo

Abigail Salter, Rafay Tariq

“Characterization of Staphylococcus from White-Tailed Deer in Western New York”

Biology: Dr. Virginia Glazier

Megan McGraw, Emilee Welton

“Allelic Heterozygosity in *C. albicans* Zn(2)Cys6 Transcription Factor Function”

Biology - Biotechnology: Dr. Mark Gallo

Mia Byrd

“Isolation of Glycosyl Hydrolases Towards Goal of Universal Blood”

Biology - Biotechnology: Dr. Mark Gallo

Nadine Husami

“Production of a Glycoside Hydrolase for Universal Blood?”

Chemistry: Dr. Luis Sanchez

Connor Chew

“Tuning chemoselectivity toward an affordable synthesis of aurantioclavine”

Chemistry: Dr. Luis Sanchez

Connor Lynch

“Development of a biaryl oxidative coupling-based route to the anti-tumor natural products TMC-95”

Chemistry: Dr. Luis Sanchez

Jenna Schlosser

“Preparation of L- and D-vinylglycine-based building blocks for the synthesis of medically relevant complex molecules”

Chemistry: Dr. Luis Sanchez

Elaina Spendio

“Developing a synthetic route to caramboxin, a rare bioactive non-peptidic amino acid”

Chemistry BS: Dr. Robyn E. Goacher

Zachary Augustyn,

“Synergy Between Simultaneous and Sequentially Applied Laccase and Xylanase in the Degradation of Wood into Biofuels”

Chemistry/Biochemistry: Dr. Robyn E. Goacher

Sarah Gehl

“Ink Aging: Does Leaving Inks for One Week or One Month Alter Which Appears on Top?”

Communication Studies: Dr. Carrie Teresa, Dr. Joseph Sirianni

Bridget Cauley, Zachary Pinti

“You're a Girl, He's a Man: Feminist Film, Interpretive Agency & Gerald's Game”

Communication Studies: Dr. Carrie Teresa

Abigail Edwards

“Instagram and Its Effects on Disordered Eating”

Communication Studies: Dr. Carrie Teresa

Melisa Reynoso

“Tobacco Ad Effectiveness”

Communication Studies: Dr. Carrie Teresa

Joseph Scirto

“Alcohol Advertising and Social Interaction”

Communication Studies: Dr. Carrie Teresa

Matthew Vizzi

“Instagram: Understanding the self in a community of never ending social comparison”

Computer & Information Science: Dr. Yonghong Tong

Joseph Martin

“Smart Home Security”

Computer & Information Science: Dr. Yonghong Tong

Christopher Miles

“IoT in HealthCare”

Computer & Information Science: Dr. Yonghong Tong

Wesley Smiley

“Smart Classroom Application”

Computer & Information Science: Dr. Yonghong Tong, Dr. Suzanne Wagner

Jeffery Weber, Noah Barnard

“Connect and Protect Niagara App”

Computer & Information Science: Dr. Yonghong Tong

Jacobe Wendell

“Machine Augmented Environments”

Criminology, Criminal Justice, and Social Work: Dr. Rolanda L. Ward

Carl Messmer

“Buffalo Federal Court Reentry Program”

English: Dr. Paula Kot

Sarah Wagner, Deanna Catalano, Andrea Visca, Alex Staszcyk

“Expanding the Canon: Caroline Chesebro’s ‘Barbara’s Duty’”

English: Dr. Paula Kot

Jenna DiMartile, Kayla Storto, Franki Gugino

“Female Fragmentation: Guernsey’s ‘On the Ridge’”

English: Dr. Paula Kot

Arianna Gabriel, Philip Sembert, Emily Ramunno, Emma Cansdale

“Defining Women in the Short Story ‘After Many Days’”

History: Dr. Thomas Chambers

Michael Broccolo

“War Crimes on Okinawa”

International Studies: Dr. David Reilly

Kevin Barry

“Free Speech and Censorship on College Campuses”

International Studies: Dr. David Reilly, Dr. Christopher Lee

Kimberly Keysa

Por La Paz; The Colombian Armed Conflict & Peace Process

International Studies: Dr. Christopher Lee

Arianna Drissi

“Political Prisoners”

International Studies: Dr. Christopher Lee

Dylan Kubala

“Sports and Foreign Policy”

International Studies: Dr. Christopher Lee

Benjamin Schian

“What the Frack?”

International Studies: Dr. Jamie Pimlott, Dr. David Reilly

Christopher Selak

“Conflict of Paradigms: International Controversies of Capital Punishment in Saudi Arabia, China and the United States”

International Studies: Dr. Christopher Lee

Lukas Wenninger

“Latin America - Politics and Corruption”

International Studies: Dr. David Reilly

Ibrahim Yilmaz

“The Rising Power of Right-Wing Populism in Europe”

International Studies / Economics: Dr. David Reilly, Dr. Goncalo Monteiro

Nicole Matheis

“Who Becomes A Terrorist? The Origins of Islamist Extremism”

Management - International: Dr. Victor Pimentel

Angela Kendt

“The Effect of Free Trade and Automation on U.S. Manufacturing Jobs”

Nursing: Dr. Malena King-Jones, Nanette Harmon, Dr. Mary Kozub

Anna Eckhardt

“Nursing Students' Cultural Competency with the Deaf Community”

Nursing: Dr. Frances Crosby, Carol Winkler

Ashleigh AK Miller

“Psychological Screening in Survivors of Pediatric Cancers”

Political Science / Environmental Studies: Dr. David Reilly

Trejahn Hunter

“Radicals on the Ridge”

Political Science / Environmental Studies: Dr. David Reilly

Ivette Leon

“Public Opinion on Fracking in New York and Pennsylvania”

Political Science / Environmental Studies: Dr. David Reilly

Amara Schultz

“The System of Greed, is Capitalism Killing the Environment?”

Political Science: Dr. Jamie Pimlott

Michael Buck

“Chief Justice: Leader or Title?”

Political Science: Dr. Christopher Lee

Anna Donnelly

“Domestic Violence vs. Prior Victimizations”

Political Science: Dr. Christopher Lee

William Fritz

“Is Government regulation of the Financial Markets Good or Bad for the Economy”

Political Science: Dr. Christopher Lee

Jason Hake

“Automation of the Military”

Political Science: Dr. Christopher Lee

Jordan Hartman

“Shootings in the United States”

Political Science: Dr. Christopher Lee

Alexandria LaMantia

“Decriminalization of Drugs”

Political Science: Dr. Christopher Lee

Emily Leffler

“Comparing the Black Vote in 2008 to the Women's Vote in 2016”

Political Science: Dr. Christopher Lee

George Lodick

“Relationship between Religion and Consumption of Pornography”

Political Science: Dr. Jamie Pimlott

Madison May

“Sex Education in the United States”

Political Science: Dr. Christopher Lee

Kevin McDonnell

“Systems of Government Effect on Wealth”

Political Science: Dr. Christopher Lee

Sadie Newcombe

“Gender and Organized Racism”

Political Science: Dr. Christopher Lee

Sadie Newcombe

“Far Right Movements”

Political Science: Dr. Christopher Lee

Morgan Palmer

“EDiplomacy”

Political Science: Dr. Christopher Lee

Olivia Sauro

“Arab-Israeli Conflict: Is a Two-State Solution Dead?”

Political Science: Dr. Christopher Lee

Brandon Schloss

“Globalization's Effect on Organized Crime”

Political Science: Dr. Christopher Lee

Freddie Wade

“Racism and Police Brutality in America”

Political Science: Dr. Christopher Lee

Emily Wilbur

“NRA and Congressional Results”

Political Science: Dr. Christopher Lee

Taylor Zurek

“Corruption and Human Trafficking”

Psychology: Dr. Milen Radell

Amanda Garry

“Intolerance of uncertainty and cognitive test anxiety in college-age students”

Psychology: Dr. Milen Radell

Lilly Lupinetti, John Taylor

“The Effect Of The Personality Traits Of Behavioral Inhibition And Intolerance Of Uncertainty On Performance In A Trust Game”

Psychology: Dr. Donna Thompson

Ellie Markarian

“Adult Attributions Regarding the Causes and Flexibility of Behavior”

Psychology: Dr. Donna Thompson, Dr. Milen Radell

Brian McGuire, Sara Vogel, Olivia Rizzacasa, Shannon Wilk

“Visual Acuity in Goldfish”

Psychology: Dr. Burt Thompson

Hannah Sullivan

“The Effect Cognitive Load and Jury Instructions have on Juror Decision Making”

Psychology: Dr. Milen Radell

John Taylor

“Human Foraging Behavior Under Uncertainty and its Relationship to Personality”

Psychology: Dr. Donna Thompson

Brigid Treverton, Cheyenne Loveland

“Effects of Single-Sex Schools on Gender Stereotyping”

Psychology: Dr. Timothy Osberg

Brigid Treverton

“Comparative validity of various food-related thinking styles in explaining symptoms of binge eating and bulimia”

Psychology: Dr. Milen Radell, Dr. Donna Thompson

Jenna Vandette, Sara Vogel, Musab Ersoy, John Taylor

“The easy-to-hard effect in goldfish visual discrimination”

Public Health: Dr. Deborah A. Leonard

Allison Emborsky

“Generating a Reproductive Health Guide for Niagara Falls Youth”

Public Health: Dr. Deborah A. Leonard

Victoria Erikson

“Combating Food Insecurity in the Niagara Falls Community”

Public Health: Dr. Deborah A. Leonard

Megan Farnham

“Dental Hygiene in Nicaragua”

Public Health: Dr. Deborah A. Leonard

Tessa Glavin, Gabrielle Wind, Ashley Mosley, Megan Cassata

“Poverty Related Childhood Obesity”

Public Health: Dr. Deborah A. Leonard

Vincenette LaGamba, Elisa Sloth, Jasmine Williams, Nadia Gordon

“Attacking a Hidden Epidemic”

Public Health: Dr. Deborah A. Leonard

Ellie Markarian

“Food Insecurity in Niagara Falls”

Public Health: Dr. Deborah A. Leonard

Justice Marshall

“Community Outreach Programs and Effectiveness on Prenatal Care and Postpartum Visits”

Public Health: Dr. Deborah A. Leonard

Kelsey Moulton, Mackenzie Lozina, Kara Hickey, Abigail Augustyn

“A Nutritional Niagara”

Public Health: Dr. Deborah A. Leonard

Caroline Reeb, Molly Balbierz, Audrey Fithall

“Recipes to a Healthier Life”

Public Health: Dr. Deborah A. Leonard

Madeleine Ross, Audrey Dunn, Amanda Ventrella, Margaret Smith

“Pollution and Community Health”

Public Health: Dr. Deborah A. Leonard

Abigail Salter

“Analysis of Outreach for Community Services for the Developmentally Disabled”

Public Health: Dr. Deborah A. Leonard

Taylor Sanders

“Intestinal Parasitic Infections in Rural Nicaragua”

Public Health: Dr. Deborah A. Leonard

Kaitlin Schreuder, Manpreet Singh, Christopher Clark

“Obesity in Niagara Falls”

Public Health: Dr. Deborah A. Leonard

Gabrielle Wind

“Reducing Unnecessary ER Visits”

Social Work / Rose Bente Lee Ostapenko Center for Race, Equality, and Mission: Dr. Rolanda L. Ward

Karissa Briggs

“Poverty Reduction in Niagara Falls, NY”

Social Work / Rose Bente Lee Ostapenko Center for Race, Equality, and Mission: Dr. Rolanda L. Ward

Meghan Lippa, Wamaka Twea, Nate Smith,

“Niagara Falls Workforce Development”

Social Work / Rose Bente Lee Ostapenko Center for Race, Equality, and Mission: Dr. Rolanda L. Ward

Carl Messmer, Kartika Carr, Courtney Betts, Sara Smyth

“Buffalo Federal Court Reentry Program”

Social Work / Rose Bente Lee Ostapenko Center for Race, Equality, and Mission: Dr. Rolanda L. Ward

Katherine Pandolfino, Meghan Lippa, Courtney Betts

“Youth and Recreational Play”

UGRC ABSTRACTS

College of Arts & Sciences

Biology, Biochemistry, Chemistry, Microbiology
Communication Studies
Computer and Information Sciences
English
Gerontology
History
International Studies
Nursing
Philosophy
Political Science
Political Science / Environmental Studies
Psychology
Public Health
Social Work
Statistics

College of Business Administration

Economics
Finance
Management - International

COLLEGE OF Arts & Sciences

Analytical Chemistry

Distributed Pharmaceutical Analysis Laboratory (DPAL):

Metformin Analyzed via HPLC.

Maham Alamgir

Brent Boleslav

Sponsoring Professor

Dr. Robyn E. Goacher

The Distributed Pharmaceutical Analysis Laboratory (DPAL)* is a project focused on the analysis of drugs in Africa, to identify mis-labeled or mis-dosed pills. Metformin is a pharmaceutical that is widely taken by individuals with Type-II diabetes. At Niagara University, we have worked to validate an HPLC method to determine whether metformin pills are indeed metformin, if they are dosed correctly, and whether there may be degraded products in the metformin. Our HPLC method is based on USP procedures for metformin analysis, adding a gradient column washing step. After this method passed system suitability checks and was approved by the DPAL project, the authors and analytical lab students at Niagara University analyzed 30 metformin tablets from Kenya against a calibration curve. Of these, 28 were found to be within 10% error of the labeled dosages. The remaining two pills were determined to be other pharmaceuticals in their corresponding packaging, which had been mixed into the metformin samples at some point between purchase and analysis. We are currently studying the stability of standard metformin solutions when stored at room temperature, and in the refrigerator (degrees C) and freezer (degrees C). We are also working on separating additional metformin related compounds (MRCs) from Metformin via HPLC, and on quantifying these MRCs. It is hoped that the stability evaluation and MRC study will streamline and expand the utility of our HPLC analysis of metformin pills in the future.

* The DPAL Project is run by the University of Notre Dame. For more information, see <http://padproject.nd.edu/get-involved/distributed-pharmaceutical-analysis-lab/>

COLLEGE OF Arts & Sciences

Biochemistry

Optimizing the 3, 5-Dinitrosalicylic Acid (DNS) Assay for Glucose and Xylose in Varied Buffers

Emilee Welton

Julia Freemire

Sponsoring Professor

Dr. Robyn E. Goacher

Biofuel production from lignocellulose relies on the release of simple sugars such as glucose and xylose, as the result of the degradation of polysaccharides in wood. Measurement of sugars in solution is often done by the DNS colorimetric assay. Glucose and other sugars cannot be measured directly by UV-VIS spectroscopy because they do not absorb light in this range. However, previous researchers have shown that the nitro group on the DNS molecule is reduced in the presence of reducing sugars (like D-glucose) to form an amine group, producing the strongly colored 3-amino-5-nitrosalicylic acid. DNS is normally used in combination with a sodium acetate buffer or citrate buffer, but some enzyme treatments for wood degradation are done in other buffers. Both acetate and citrate buffers are monoprotic, meaning they have a smaller pH range and buffer capacity. Universal buffer, containing phosphoric acid, acetic acid, and boric acid, is a polyprotic buffer, meaning it has a larger pH range and much larger buffer capacity, making the traditional method of DNS insufficient with universal buffer. As a result, a new method for using the DNS assay in a universal buffer was designed, optimized and carried out for glucose and xylose.

COLLEGE OF Arts & Sciences

Biology

ACIDITHIOBACILLUS SP. ISOLATE MEDIATES COPPER LEACHING IN IROQUOIS NATIONAL WILDLIFE REFUGE ACID SPRINGS

Lauren Augustyniak

Haley Parker

Sponsoring Professor

Cassandra Marnocha

Playing host to a series of acid springs, the wetlands of Iroquois National Wildlife Refuge are abundant with extremophile microbial communities. As a natural source of heavy metals and minerals, it is no surprise that past research has shown mostly acidophilic bacteria here, predominantly of the genus *Acidithiobacillus*. As there is limited research on the communities of this unique environment, this experiment sets out to evaluate the bioleaching properties of the predominate microbial species present there, specifically focusing on its ability to facilitate copper mobilization into the springs. This experiment is among a series of others, all with the intention of determining the ability of *Acidithiobacillus* spp. to introduce solubilized metals into the waters of these acidic springs, and thus altering the natural geochemistry of the wetlands.

COLLEGE OF Arts & Sciences

Biology

Cycling of inorganic sulfur by *Acidithiobacillus* sp. provides insights into the complex geochemistry of the Iroquois National Wildlife Refuge acidic springs

Haley Parker

Sponsoring Professor

Cassandra Marnocha

The acidic springs found within the Iroquois National Wildlife Refuge wetlands possess unique geochemical properties. They act as a source of sulfide, promoting the growth of microbial communities that have not previously been studied. After examining the community structure of two of the acidic springs, we found that they were low in species diversity when compared against the nearby Oak Orchard Creek. The genus, *Acidithiobacillus*, was predominant in the more acidic of the springs, and made up a notable percentage of the community of the second spring. We have isolated a strain most closely related to *Acidithiobacillus thiooxidans* that is capable of chemoautotrophic growth on inorganic sulfur compounds. This organism produces sulfate and elemental sulfur as it grows, and we are currently studying how it uses other sulfur species in its metabolism. The implications for the study of this particular strain of *Acidithiobacillus* would be the ability to predict how the presence of this microbe might change the geochemistry of the springs themselves, and the surrounding wetlands.

COLLEGE OF Arts & Sciences

Biology

Measuring Apoptosis in HeLa Cervical Cancer Cells and CAL-27 Oral Cancer Cells After Treatment with Curcumin and Photodynamic Therapy

Christian Domin

Sponsoring Professor

Dr. Robert Greene

In current research, HeLa cells and CAL-27 are induced to undergo apoptosis after treatment with curcumin, which is derived from the spice turmeric. This spice has been used as an anti-oxidant, an analgesic, and an anti-inflammatory medicine for centuries. Recently, curcumin has been shown to have anticancer properties due to its effect on biological pathways involved in cell-cycle regulation, oncogene expression, apoptosis and metastasis. Curcumin inhibits cellular signaling pathways that have key roles in cancer progression¹. Treatment of HeLa cervical cancer cells and CAL-27 oral cancer cells with increasing concentrations of curcumin showed induction of apoptosis. When combined with photodynamic therapy, cytotoxicity against HeLa but not CAL-27 cells was demonstrated. Fluorescence microscopy and flow cytometry were used to determine apoptosis. Results showed that induction of apoptosis and increasing concentrations of curcumin were positively correlated, suggesting that curcumin could improve the treatment of oral cancer, and that combined treatment with curcumin and photodynamic therapy could improve the treatment of cervical cancer. Genetic data from both cell types was also obtained, showing changes in gene expression in several genes known to be involved in apoptosis.

COLLEGE OF Arts & Sciences

Biology

Isolation of Bacteriophage in Staphylococcus Species

Janelle Fancher
Maria Kajdasz
Shania van Nuland

Sponsoring Professor
Dr. Mark Gallo

Pathogenic Staphylococcus strains that are antibiotic resistant can cause infections that are difficult to treat. The use of bacteriophage in treatment of Staphylococcus aureus infection has been proposed as a possible alternative to antibiotics. Isolation and identification of new bacteriophage is an exciting area of research that may yield novel treatments for infections that have been challenging to eliminate by traditional means. One previously unexplored source of Staph and their corresponding phage are strains associated with wild animals. In this study, Staph were isolated from white tail deer, Odocoileus virginianus. The resulting bacteria were analyzed for the presence of lytic phage that were active against RN4220, a permissive strain of S. aureus. Sixteen independent bacteriophages were detected and their range of activity on other Staphylococcus species was determined.

COLLEGE OF Arts & Sciences

Biology

Effects of Plastic Polymer Composition on Early Microbial Association in a Freshwater Environment

Rene Hoover
Carley McMullen

Sponsoring Professor

Dr. Mark Gallo

Plastic polymers have become omnipresent in our environment. From beverage bottles, to packaging, and even automobiles, it's hard to imagine our lives without plastic. But, what happens once a piece of plastic is discarded? In our environment we consider it trash, but on a microscopic level our plastics are home to a diverse ecosystem of microbes forming complex biofilms and producing enzymes that profoundly affect their habitat.

To learn more, we submerged six, common plastics in the Niagara River, and examined the microbial life that colonized them. Microbial communities of bacteria formed quickly and after one week the plastic samples were collected, DNA was extracted from the attached microbes, and sent out for genetic analysis. The results confirmed a rich, diverse microbial consortium that varied greatly between the plastic polymers and that the numbers and the diversity of microbes changed over time. These results indicate that different species of bacteria may prefer particular plastic surface chemistry and compete with each other for resources on these locations. Microbial ecosystems are complex. The research shows that microbial communities can and do form on plastics in the environment and that they do so discriminately. Learning which microbes are present on different polymers and what metabolic processes they carry out in their ecosystems may help us find new, innovative ways to deal with discarded plastics in our own environment.

COLLEGE OF Arts & Sciences

Biology

Rate of Plasmid Loss When Selective Pressure is Removed: Use It or Lose It

John Klem

Sponsoring Professor

Dr. Mark Gallo

Plasmids are extra chromosomal elements that are normally found in most bacteria. One plasmid, p-Glo(TM), is used in E. coli for many experiments, especially as part of the Advanced Placement Biology curriculum. This plasmid contains the green fluorescent protein gene under control of the lactose promoter, the beta lactamase gene whose product provides beta-lactam antibiotic resistance, an origin of replication, as well as a multiple cloning site. The plasmid is retained in the cell due to selective pressure of the antibiotic. However, very little experimentation has been done on the rate of the loss of plasmids in bacteria. Plasmid loss will be explored when under different selective pressures, namely the additional cost of expression of GFP protein on ability to compete for resources.

COLLEGE OF Arts & Sciences

Biology

Analyzing the Switch: Oxygenic and Anoxygenic Photosynthesis in Cyanobacteria

Joy O'Brien
Kaleigh Block

Sponsoring Professor

Cassandra Marnocha
Dr. William Edwards

Microbial mats found at the bottom of sinkholes in Lake Huron are comprised mainly of cyanobacteria capable of anoxygenic photosynthesis via sulfide. In anoxygenic photosynthesis, sulfide is oxidized and elemental sulfur is released into the environment. To better understand the range of environmental conditions in which this switch can occur, we are studying strains of *Pseudanabaena* and *Oscillatoria* which have members known to carry out this switch between oxygenic and anoxygenic photosynthesis.

We obtained pure cultures of *Pseudanabaena* sp. CCAP 1464 and *Oscillatoria limnetica* and are measuring growth rates in oxygenic conditions. This data will be a baseline for our future in-situ experiments in euxinic environments. *Pseudanabaena* sp. and *O. limnetica* have also been screened for sulfide:quinone oxidoreductase (sqr) using PCR. The sqr gene is required for the oxidation of sulfide and the oxygenic/anoxygenic photosynthesis switch. We have confirmed the presence of a Type I sqr gene in *Pseudanabaena* sp. which means it should be capable of anoxygenic photosynthesis in the presence of sulfide. We are still conducting PCR on *O. limnetica* with expectations that it carries the same sqr gene. By studying the switch, we will be able to examine the implications of anoxygenic photosynthesis within the environment.

COLLEGE OF Arts & Sciences

Biology

Vitamin D Effects on PDT Apoptosis in MCF-7 Cells

Brittney Purcell

Sponsoring Professor

Dr. Robert Greene

The role of the vitamin D signaling pathway in breast cancer has been heavily investigated since the discovery of the vitamin D receptor (VDR). As demonstrated by previous studies, vitamin D receptor ligands could be used therapeutically as a potential treatment of certain breast cancers due to its ability to inhibit the growth of cancer cells. Past studies have determined that vitamin D has increased the effects of anticancer treatments of a variety of neoplasms including prostate, breast, colorectal and skin cancers. The goal of the study was to use MCF-7 luminal breast cancer cells as an in vitro study to determine the possible synergistic relationship between vitamin D and photodynamic therapy (PDT). In the study MCF-7 cells were treated with varying doses of the photodynamic agent 5-aminolevulinic acid (ALA) along with low doses of Vitamin D. After ALA and vitamin D incubation, cells were exposed to a light emitting diode (LED). Cell apoptosis was determined by flow cytometry assessment and EVOS imaging system. The present study demonstrates that vitamin D increases the therapeutic effects of PDT and supports the hypothesis of a potential synergistic relationship between the two. The findings demonstrate a potential future role of vitamin D and ALA combination therapies for patients with luminal breast cancer.

COLLEGE OF Arts & Sciences

Biology

Characterization of Staphylococcus from White-Tailed Deer in Western New York

Abigail Salter

Rafay Tariq

Sponsoring Professor

Dr. Mark Gallo

Varying strains of Staphylococcus have effects that can often render organisms ill, if not causing lethality. Strains of specific concern are those that exhibit antibiotic resistance, because they become virtually untreatable. Thus, antibiotic resistance has become a great concern in the clinical world because of the health implications it may have. However, humans are not the only hosts of Staphylococcus. Animals in the wild are hosts to microbes that may exhibit antibiotic resistance naturally, although it may be induced by exposure to antibiotics. Such hosts include white-tailed deer, *Odocoileus virginianus*. Staphylococcus from the noses of these deer have been grown, isolated, and purified. The purified samples have been grown in mstaph broth and these samples are being used to test for antibiotic resistance, create glycerol stocks, analyze chromosomal DNA, and identify potential plasmids. Resistant strains will be isolated for analysis of chromosomal DNA. As this project progresses, the antibiotic resistance profiles of all 219 samples will be determined. The DNA of the resistant samples will then be run through PCR with Mec primers in hopes that antibiotic resistance genes will be identified. Genes and variants of the genes associated with antibiotic resistance will be identified.

COLLEGE OF Arts & Sciences

Biology

Allelic Heterozygosity in *C. albicans* Zn(2)Cys6 Transcription Factor Function

Megan McGraw
Emilee Welton

Sponsoring Professor
Dr. Virginia Glazier

Candida albicans is a common fungal commensal found in the human gut, oral cavity, skin and vagina. In immunocompromised individuals, an overgrowth of *C. albicans* can occur and become life threatening. Several zinc cluster transcription factors in *Candida albicans* have been identified but most have not been studied at length. Rob1 is one of the zinc cluster transcription factors that has previously been studied in our lab. Rob1 was found to have an integral part in the production of the biofilms. The biofilm is an essential characteristic that *C. albicans* contains, this allows the yeast to establish a reservoir for infection. During these studies our lab identified differences between the two alleles of *ROB1* resulting in allelic heterozygosity. We have extended our research to identify allelic heterozygosity in other zinc cluster transcription factors. Sef2 is one of the transcription factors that is currently being studied. The objective of this work is to identify zinc cluster transcription factors with allelic heterozygosity and understand the effects of allelic heterozygosity on *Candida albicans* virulence traits.

COLLEGE OF Arts & Sciences

Biology - Biotechnology

Isolation of Glycosyl Hydrolases Towards Goal of Universal Blood

Mia Byrd

Sponsoring Professor

Dr. Mark Gallo

Glycosyl hydrolases, as their name implies, are enzymes able to remove sugars. Sugars found on the surface of blood are responsible for their antigenic properties between A, B, and O type blood. It follows that removal of sugars should produce a "universal blood." The trisaccharides on the surface of blood contain a terminal moiety of either an N-acetylgalactosamine linked in an alpha 1,3 configuration to fucose for A type blood or galactose linked in a similar manner to fucose for B type blood. Many bacteria have glycosyl hydrolases as means to break down complex carbohydrate polymers. Several groups have identified enzymes with activities against the sugar residues on blood however none are of sufficient catalytic activity to be commercially viable. This research will isolate enzymes from novel groups of bacteria in hopes of identifying enzymes with greater activity and specificity for the removal of sugars from blood.

COLLEGE OF Arts & Sciences

Biology - Biotechnology

Production of a Glycoside Hydrolase for Universal Blood?

Nadine Husami

Sponsoring Professor

Dr. Mark Gallo

The antigenic trisaccharides of A- and B-type blood cells are the source of problematic immune responses that are associated with blood transfusions. Enzymatic cleavage of the terminal sugars of A- and B-type blood cell antigens — N-acetylgalactosamine and galactose, respectively; has been proposed as a method for the production of O-type blood from any blood cell type. Glycoside hydrolases have been studied due to their ability to cleave carbohydrate linkages but there has not yet been a glycoside hydrolase with sufficient activity for all possible glycoside linkages associated with the antigenic portions of red blood cells. One particular family, glycoside hydrolase 98, appears to possess the ability to cleave both A- and B-type sugar antigens. Bioinformatic comparative analyses of this family has led to the discovery of a gene that could provide a potential enzyme in certain bacterial strains. This project aims to analyze these glycoside hydrolase 98 enzymes through gene cloning and expression, enzyme isolation, purification, and overexpression in *E. coli*.

COLLEGE OF Arts & Sciences

Chemistry

Tuning chemoselectivity toward an affordable synthesis of aurantioclavine

Connor Chew

Sponsoring Professor

Dr. Luis Sanchez

Aurantioclavine is a natural product isolated from *Penicillium aurantiovirens* that gained the interest of the synthetic community for its proposed role in the biosynthesis of the complex polycyclic alkaloids of the communesin family. Members of this family display notable bioactivities, including insecticidal properties and cytotoxicity toward leukemia cell lines.

Our interest in this important compound lies in its structural resemblance to tryptamine, a derivative of the amino acid tryptophan. Since tryptamine is readily available and more than a hundred times less expensive than the starting materials used in the reported total syntheses of aurantioclavine, we aim at developing a rational reaction sequence to progressively transform tryptamine and access aurantioclavine synthetically. This approach, nevertheless, is bound to involve an “unfavored” cyclization in order to assemble aurantioclavine’s characteristic seven-membered ring. We expect to tune the chemical selectivity of this process via the functionalization of the indole ring and pendant chain of tryptamine—altering the geometry and electronics of the functionalities involved in the cyclization. Our progress in these efforts will be presented.

COLLEGE OF Arts & Sciences

Chemistry

Development of a biaryl oxidative coupling-based route to the anti-tumor natural products TMC-95

Connor Lynch

Sponsoring Professor

Dr. Luis Sanchez

Aurantioclavine is a natural product isolated from *Penicillium aurantiovirens* that gained the interest of the synthetic community for its proposed role in the biosynthesis of the complex polycyclic alkaloids of the communesin family. Members of this family display notable bioactivities, including insecticidal properties and cytotoxicity toward leukemia cell lines.

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COLLEGE OF Arts & Sciences

Chemistry

Preparation of L- and D-vinylglycine-based building blocks for the synthesis of medically relevant complex molecules

Jenna Schlosser

Sponsoring Professor

Dr. Luis Sanchez

The unusual amino acid vinylglycine and a number of related compounds have been studied throughout the years for their involvement in certain biological processes and special reactivity. Given the presence of an alkene moiety, the structure of vinylglycine could be manipulated through a variety of chemical reactions, leading to larger and more valuable amino acid-like structures. Exploiting late-stage transformations on vinylglycine-containing peptide-like molecules could be of great use in the medicinal field.

While the preparation of vinylglycine has been extensively investigated in the past, its production is still problematical due to its sensitivity to racemization and isomerization, which renders key steps irreproducible during its synthesis. This project aims at developing an inexpensive approach to synthesize L- and D-vinylglycine derivatives as single enantiomers, using D- and L-serine respectively as starting materials. Additionally, we expect to find a means to protect this structure from racemization and isomerization via an appropriate derivatization. Our progress in these endeavors will be presented.

COLLEGE OF Arts & Sciences

Chemistry

Developing a synthetic route to caramboxin, a rare bioactive non-peptidic amino acid

Elaina Spendio

Sponsoring Professor

Dr. Luis Sanchez

While safe for everyone else, ingestion of *Averrhoa carambola*, more commonly known as star fruit, can be harmful to chronic kidney disease patients; symptoms such as vomiting, mental confusion, and seizures and even deaths have been reported. Caramboxin has been recently identified as the active compound responsible for these effects and its molecular structure has been determined to be an amino acid-like moiety resembling phenylalanine.

Our interest in caramboxin lies on its orsellinic acid-like aromatic ring, a feature present in a number of medically relevant natural products. These compounds and their analogues are currently being investigated for the treatment of malaria, menopause symptoms, and various forms of cancer. We envision that caramboxin, as an amino acid, has the potential to be incorporated in peptide-like compounds for the development of novel drugs. With this in mind, synthetic access to large quantities of this rare active amino acid for biological studies is highly desirable.

Given that the chirality of caramboxin has not been determined, the present project aims at its first total synthesis for structural confirmation. Furthermore, our synthetic route, which begins with aspartic acid, may provide a glimpse at how this molecule is produced in nature by *Averrhoa carambola*.

COLLEGE OF Arts & Sciences

Chemistry

Synergy Between Simultaneous and Sequentially Applied Laccase and Xylanase in the Degradation of Wood into Biofuels

Zachary Augustyn

Sponsoring Professor

Dr. Robyn E. Goacher

With the ever-growing shortage of gasoline in today's modern industry, finding a fuel substitute is becoming increasingly important. A new field of research has opened with the interest of using plant-based materials as a new source of energy, in the form of cellulosic biofuels derived from wood. Polysaccharides in wood can be degraded into sugars, which can then be fermented into alcohol to be used as a fuel. A key portion of this research is to break down the lignin that sheaths the cellulose and hemicellulose (the polysaccharides). This poster will discuss a study of the synergy between two particular enzymes: laccase (which degrades lignin) and xylanase (which degrades the hemicellulose termed xylan). Specifically, the aspect studies how well the enzymes work together in the degradation process. This poster will show the relevant data for the analysis of enzyme-treated solid wood using several solid-sampling instruments (FTIR-ATR, TGA, and ToF-SIMS). The data was analyzed using principal component analysis (PCA) to identify trends in the treatments. This research has the potential to clarify one piece of the complex puzzle that is today's modern energy crisis.

COLLEGE OF Arts & Sciences

Chemistry/Biochemistry

Ink Aging: Does Leaving Inks for One Week or One Month Alter Which Appears on Top?

Sarah Gehl

Sponsoring Professor

Dr. Robyn E. Goacher

Ink forensics, and the ability to detect deposition order of inks can play an important role in the judicial and criminal justice systems. Determining the deposition order of inks would allow a forensic analyst to assess whether or not an important paper document had been forged or altered after the initial writing was completed. This research aims to continue exploring the use of Time-of-Flight Secondary Ion Mass Spectrometry (ToF-SIMS), a surface sensitive technique, to analyze black ballpoint ink intersections, specifically Papermate, Bic and Staples brand pens [1]. Multiple data analysis techniques were used to determine the deposition order of the inks including Multivariate curve resolution (MCR) and regions of interest (ROIs). Previous work evaluated drying times of 1 minute, hour and day while this work explores samples that had 1 week and 1 month pass between writing the first and second lines. These samples were analyzed initially after the 2nd line was written, and again after three months. This project explores how the drying time influences the ability of ToF-SIMS to distinguish the inks and correctly portray the deposition order. Furthermore, inks were compared to see if there were any ink components that changed between the initial analysis and after months of aging.

1. Goacher, R. E.; DiFonzo, L. G.; Lesko, K. C., Challenges Determining the Correct Deposition Order of Different Intersecting Black Inks by Time-of-Flight Secondary Ion Mass Spectrometry. *Analytical Chemistry* 2017, 89 (1), 759-766.

COLLEGE OF Arts & Sciences

Communication Studies

Niagara Falls: The Rhetorical Collapse of Urban Renewal

Nico Santangelo

Sponsoring Professor

Dr. Carrie Teresa

This research examines the complex political rhetoric surrounding urban renewal in Niagara Falls, NY, and how public memory of the project evolved.

While the current public perception of urban renewal era places its end in the late 1970s, the cementing of urban renewal's failure in the eyes of Niagara Falls citizens occurred in 2002 with the loss of the Niagara Falls Convention and Civic Center. This expanded timeline presents the tenure of five mayors, and the rhetoric they used to shape public memory of urban renewal.

This research focuses on articles in the Niagara Gazette and other local newspapers covering urban renewal from 1960 to 2002. Additional selections from the New York Times provide a national perspective into the rhetorical evolution. Promotional materials from the era provide a glimpse into the intended legacy of urban renewal, and how the lasting public memory strayed from this ideal framing.

COLLEGE OF Arts & Sciences

Communication Studies

Christianity, What's the Point? Media Stereotypes of Christians and an Ethnographic Review of Their Lives

Emily Parisi

Sponsoring Professor

Dr. Carrie Teresa

Who are Christians? What do they look like? How do we identify this particular group of people? Modern media has represented this group as people who are strict and lawful. As people who are boring and often judgmental of those around them. These representations are false stereotypes that media have created through the simplification of a complex identity group. This comprehensive study charts the media stereotypes of Christianity that help to shape society's assumptions of the people who practice. It will then challenge those stereotypes through an ethnographic study of What's the Point Ministries, an emerging church based in Lewiston, NY. Just like gender, race, or sexuality, religion is an important part of many people's social identity and is often misunderstood and inaccurately represented. Through participant observation and in depth interviews this study aims to help better understand the experiences of those who identify as Christian to shatter the stereotypes surrounding them.

COLLEGE OF Arts & Sciences

Communication Studies

You're a Girl, He's a Man: Feminist Film, Interpretive Agency & Gerald's Game

Bridget Cauley

Zachary Pinti

Sponsoring Professor

Dr. Carrie Teresa

Dr. Joseph Sirianni

What makes a film feminist? Can the interpretation of a cultural text be right or wrong? Most importantly, how do audiences impact the collective understanding of media studies? Critical analysis and ethnography combine to present this collaborative research on Netflix's *Gerald's Game*, based on the 1992 Stephen King novel. Discover the power of interpretive agency, dissect the cinematic experience and confront the question: is *Gerald's Game* a feminist film? Two Communication Studies undergraduates have solicited the help of Niagara University's community to analyze *Gerald's Game* through various lenses. The project applies two separate approaches to research: first, researchers authored individual textual analyses of *Gerald's Game* and compared their varying perspectives; second, researchers produced a short documentary film highlighting feminist film theory, interpretive agency and the meaning of *Gerald's Game* as interpreted by several of Niagara's students. This project is unique in kind, abundant in discoveries and proudly represents the staff and students of the Communication Studies department.

COLLEGE OF Arts & Sciences

Communication Studies

Instagram and Its Effects on Disordered Eating

Abigail Edwards

Sponsoring Professor

Dr. Carrie Teresa

Fitspiration and the concept of the thin ideal have become increasingly influential as Instagram and other visual social networking sites (SNS) have emerged. Accordingly, cyber judgment, bullying, and self-comparison are at an all time high. With this type of behavior come the repercussions of the development of body dissatisfaction, disordered eating, and self-sabotage. Using a critical discourse analysis and ethnographic approach, this study aims to understand how Instagram's reward system of likes and comments can incite society's unrealistic body goals and unhealthy practices. The behavior of Instagram users was studied closely using a Social Cognitive Theory framework. With exposure to SNS visual aesthetics and reward systems, users are encouraged to exercise and eat for appearance rather than health and happiness. Trying to obtain these unrealistic standards has become problematic for women of all ages, especially those with high risk of disordered eating and body dissatisfaction.

COLLEGE OF Arts & Sciences

Communication Studies

Tobacco Ad Effectiveness

Melisa Reynoso

Sponsoring Professor

Dr. Carrie Teresa

Anti-smoking advertisements are not as effective as they seem. The sole purpose of anti-smoking advertisements is to encourage smokers to quit and to prevent non-smokers from starting. When an advertisement does not serve its purpose, it becomes counterproductive and certain viewers become immune to, or worse, skeptical of, the message. For this project, two sets of semi-structured interviews were conducted. One group has never had a cigarette and the other group is made up of addicted smokers. This study revealed that smokers are unaffected by the message in anti-smoking advertisements, while non-smokers are slightly effected.

COLLEGE OF Arts & Sciences

Communication Studies

Alcohol Advertising and Social Interaction

Joseph Scirto

Sponsoring Professor

Dr. Carrie Teresa

This study examines the impact that media advertising has on several Niagara University student's drinking habits. More specifically, the role it plays in both their choice of alcohol along with the frequency of their consumption as a social practice. Further analysis also offers insight as to why many students regularly find themselves consuming alcohol at times they hadn't planned on drinking and how certain social media platforms factor into their lives. An ethnographic approach in which five students were examined at the local bars Partners and Tap Room was utilized. The students' activity on Snapchat was closely monitored as well to see how their behavior changes when alcohol is involved. Future research aiming to understand and expand upon media advertising's impact on student motives for drinking as a social practice will find this analysis useful.

COLLEGE OF Arts & Sciences

Communication Studies

Instagram: Understanding the self in a community of never ending social comparison

Matthew Vizzi

Sponsoring Professor

Dr. Carrie Teresa

Instagram is a social media platform used to connect users through the viewing and sharing of each others photos and videos. While there is a plethora of quantitative research showing how the Instagram community is riddled with issues like body image distortion and self-presentation anxiety, there are few studies that highlight personal experiences with the application. Using social comparison theory, this ethnographic study shows how Instagram use can affect users' ideals of self-worth and self-esteem through detailed anecdotes from respondents to create a realistic spectrum of user experiences.

Each respondent was interviewed for approximately one hour in their own home to make the process more comforting. To show the range of responses and importance of an ethnographic study in relation to this topic, the analysis section outlines the usage, self-determined affects and explanations of each respondent in relation to their Instagram use, self-worth and social comparison theory.

COLLEGE OF Arts & Sciences

Computer & Information Science

Machine Augmented Environments

Jacobe Wendell

Sponsoring Professor

Dr. Yonghong Tong

The use case below is for a hypothetical environment that relies on modern projections of Machine Learning and its seemingly difficult hurdles. This design ought to be important because if we were to have some sort of artificial intelligence that could specialize in the caretaking of your home it would change the dynamics of IoT (Internet of Things). Machine Intelligence will not only regulate the environment in which it exists, but additionally any environment that it is then placed in. This proposal features a factory floor plan that has been modified with data collecting sensors, commonly seen throughout IoT applications. These datasets will be fed into the use case design and the agent itself will be tested and rated on its actions. Requirements of this agent include: initial inexperience in the task at hand, gradual time it will take for software-engineers to insert protocols, and the ability to view its entire environment.

Although the factory-based use case may not seem overly ambitious (as we already see some cases of machine learning in industry), the goal is to show how a theoretical agent such as this could be applied to many different domains in IoT. The latter portion of the proposal will feature some hypothetical benefits of the factory example and how it may contribute to similar communities (another AI within a different domain: a grocery stores etc.), and the rest of the existing world.

COLLEGE OF Arts & Sciences

Computer & Information Science

Smart Home Security

Joseph Martin

Sponsoring Professor

Dr. Yonghong Tong

This is a smart home project designed for certain users who own a smart motion detector and a smart camera. This will hopefully decrease the amount of homes that are being broken into in neighborhoods.

The idea for this project is that a homeowner can keep up with the security of a house while no one is home. By the use of smart motion sensors, contact sensors, and smart cameras. A homeowner can keep up with things going on around their home. The concept is that the user can tell the hub that no one is home, then the motion sensors will turn on. When motion is detected the hub will send a notification to the owner of the houses phone saying: "Motion has been detected in the house". It will also send a link to a livestream of the smart cameras in the house. This will not only keep our homes safe, but also the people living inside of them.

The importance of using smart technology in a home will enhance the users capability to do more things with ease. The smartphones we carry on our person on a daily basis make our lives so much easier. With every update and new model of these devices it makes our lives a bit easier. With Smart technology in the common home the control over simple things, like turning on a light, will make our lives easier and less stressful.

COLLEGE OF Arts & Sciences

Computer & Information Science

IoT in HealthCare

Christopher Miles

Sponsoring Professor

Dr. Yonghong Tong

The Internet of Things (IoT) in healthcare is a growing field and expanding at a rapid rate as we progress with new sensors and technology. Many companies are hoping that assured living from IoT will be in more than just sample homes by the year 2020 and in senior living and assisted living homes across the country. Experts are predicting IoT in healthcare to be a \$120 billion-dollar market by the year 2020 and continue to expand.

Much of the technology already exist and we can install, the main devices in these homes could be smart wearable devices, smart beds, voice and facial recognition. All of these devices and sensors would help ensure the health and safety of those living in senior living homes or in assisted living homes, as many of these people can no longer do many tasks alone. These devices would also be able to store information with in a cloud and send this information to care givers and doctors, to produce more accurately diagnose the patient when a problem may occur.

This project will design and implement smart solutions for IoT in healthcare by using smart devices and wearable devices. This design mainly include special monitoring, motion, facial and voice recognition, smart beds, and cloud data management.

COLLEGE OF Arts & Sciences

Computer & Information Science

Smart Classroom Application

Wesley Smiley

Sponsoring Professor

Dr. Yonghong Tong

The Smart Classroom is designed with two purposes in mind. Save money for the school to be put into more valuable things and make the classroom environment more productive. Through my design of the smart classroom, the computer systems, lights and other technologies in the room will be scheduled to work when you need them to.

The system operates on four main pieces of hardware. A contact sensor, multiple smart plugs, smart lighting and a motion sensor. The contact sensor will perform most of the heavy lifting. The contact sensor is attached to the door and every time the door is opened, the lights and computers will turn on through the smart plugs. This prevents slow computer boot up times that tend to take away from precious class time. The smart plugs will also be operated on a schedule. If there is a class in a time slot, all the computers will turn on prior to class. If there isn't a class, all computers will be turned off except the front row in case anyone needs to use a computer for other reasons. This will help students and professors alike to get their work done effectively and quickly. The last piece of technology is the motion sensor. This will detect if there is someone in the room. If there is, it will keep the lights and computer on for them.

Although some may say that more technology only causes more problems, I truly believe that automating the process of our daily lives through technology simplifies our lives. With my design of the smart classroom, we will be more efficient in both our course work and energy consumption.

COLLEGE OF Arts & Sciences

Computer & Information Science

Connect and Protect Niagara App.

Jeffery Weber
Noah Barnard

Sponsoring Professor

Dr. Yonghong Tong
Dr. Suzanne Wagner

There are many residents and local agencies that share the desire to advance Niagara Falls, but often there is a breakdown in effective publishing of service information. Guidance to local services, volunteer opportunities, and training programs are just a few examples of why we need to begin developing a unified platform of information. “Roughly three-quarters of Americans (77%) now own a Smartphone, including lower-income Americans and those ages 50 and older are exhibiting a sharp uptick in ownership over the past year”, according a Pew Research Center survey conducted in November 2016. Using technology to our advantage we are partnering with local agencies to create an alpha-directory of local services.

This Connect and Protect Niagara app is an information system that collects data from resources and businesses in the Niagara region. This development solves the concerns of resident’s lack of awareness of local agencies, services and programs that are available to improve each resident’s quality of life. This also reduces the duplication of many services and creates a unified platform of services. This creates an efficient form of communication for agencies and residents. By partnering with agencies and residents within Niagara Falls, we can increase awareness while also establishing trust and equality.

The application of a website and mobile platforms allows a user to browse and search for these businesses based on their needs. The businesses listed in the directory can be manually input, or can be input by the business itself via Internet. We hope this innovative approach will enhance the effectiveness and efficiency of utilizing the emerging technologies in community.

(Note: This project has been supported by City of Niagara Falls)

COLLEGE OF Arts & Sciences

English

Expanding the Canon: Caroline Chesebro's "Barbara's Duty"

Sarah Wagner
Deanna Catalano
Andrea Visca
Alex Staszcyk

Sponsoring Professor

Dr. Paula Kot

This poster presentation argues for the literary significance of Caroline Chesebro's "Barbara's Duty." Caroline Chesebro's "Barbara's Duty" is a nineteenth-century short story that fits in with other works recognized by the literary canon, yet does not get the acknowledgment it deserves. By adding "Barbara's Duty" to the canon, readers will receive further insight into the mindset of both males and females during the nineteenth century, as well as the efforts of women to defy the expectations of society. "Barbara's Duty" provides insight into progress for the female gender working to revolutionize society despite the inevitability of gender roles; women at work in their private sphere; new societal views versus traditional societal views; and women gaining recognition through their strength and control.

COLLEGE OF Arts & Sciences

English

Female Fragmentation: Guernsey's "On the Ridge"

Jenna DiMartile

Kayla Storto

Franki Gugino

Sponsoring Professor

Dr. Paula Kot

This poster argues for the canonical significance of Clara Guernsey's "On the Ridge." This short story features a male protagonist (Ezra) who embodies the fragmentation and disease experienced by 19th-century women. The story also promotes female strength to reject societal constructs, including marriage.

COLLEGE OF Arts & Sciences

English

Defining Women in the Short Story 'After Many Days'

Arianna Gabriel
Philip Sembert
Emily Ramunno
Emma Cansdale

Sponsoring Professor

Dr. Paula Kot

In the 19th century, American women writers were much more conscious of what it meant to “wield the pen.” Although the readers in their time would often be disinterested in their poems or stories, modern literary critics and scholars are fascinated by the contributions of these artists. The exclusion of women’s writing in the American literary canon has sparked an interest in rediscovering literary geniuses who were not recognized in the past. While Frances Hodgson’s works such as *Little Lord Fauntleroy*, *The Little Princess*, and *The Secret Garden* received recognition and acclaim, her short story “After Many Days” has been forgotten from her list of achievements. This short story should be recognized and examined for its interesting stance on gender roles. The short story focuses on the duties and responsibilities that befall its protagonist, Tabitha Dunne. Arguably, Hodgson’s tale upholds that a woman’s place is in the domestic sphere where she should be loyal and subject to her husband’s wishes. However, the story criticizes the idea of a woman’s power through the character of Tabitha’s mother, a domineering, callous woman. Through an in-depth analysis of Frances Hodgson’s female and male characters, audiences can understand what the role of women looked like in the 19th century as well as their struggles.

COLLEGE OF Business

Finance

Evaluating the Impact of the Liquidity Coverage and Tier 1 Capital Ratios for United States Banking Institutions

Natalia Antropova

Sponsoring Professor

Edward Hutton

Since the beginning of 2018 banks and other financial institutions have to adopt a new set of accords called Basel III. It is designed to improve the overall liquidity of balance sheets and protect banks from liquidity crises. This “transformation” might seem useful and productive for the banks, especially after the financial crisis of 2007-2009 revealed how illiquid the U.S. financial system was. A segment of Basel III, Liquidity Coverage Ratio (“LCR”), has specifically targeted the insufficient liquidity of institutions. From now on, banks are required to maintain LCR of over 100%, the ratio which can be calculated by dividing high quality liquid assets (“HQLA”) over the projected net cash outflow for the 30 day stress period. HQLA are assets that can be converted into cash with no or very little capital loss. LCR is supposed to cause a change in managing assets on the balance sheet. Since only certain assets are HQLA, banks are required to increase the percentage of them in the portfolio and simultaneously reduce the number of less liquid assets. HQLA are cash, U.S. issued securities or U.S. guaranteed securities which have much smaller interest rate than other less liquid assets. As a result, the banks might be experiencing less profitability in order to maintain liquid assets. This loss of financing may in fact result in less capital, with the effect of increasing rather than decreasing bank safety. This paper examines the balance sheet of 21 financial institutions to establish whether or not any changes have been made to the assets portion of the balance sheet to prepare for LCR requirement.

COLLEGE OF Arts & Sciences

Gerontology

An Examination of Social Inequalities that Impact Older Women

Sophia Smith

Sponsoring Professor

Dr. Susan E. Mason

A demographic shift is about to occur worldwide, by 2030, people age 65+ will make up 12 percent of the world's population (Sugar, 2014, Chp.1). The U.S. can expect a monumental increase of both older males and females. Currently, "women make up 55 percent of all individuals aged 60 and over," and according to the 2005, U.S. Census, 80 percent of centenarians are women (Olivia Bogunovic, 2011, p.321). As people are living longer, there are many challenges associated with this increase in life expectancy. While many similarities can be found in the challenges faced by men and women as they age, there are some circumstances that women face more frequently than their male counterparts. In addition, there are several challenges that are gender specific. This presentation will examine the specific gender-related issues that target older women such as, how women's gendered identities are effected by anti-aging campaigns, how all aspects of aging are effected by the socioeconomic inequalities older women face, and medical differences in regard to mental health and physical health that women endure. Lastly, this presentation will emphasize the importance of addressing such sex-related differences in order to improve quality of life, as well as the individual aging experience.

COLLEGE OF Arts & Sciences

Gerontology

A Review of Intergenerational Attitudes Toward Older Adults Before and After Interaction

Sophia Smith

Sponsoring Professor

Dr. Susan E. Mason

Children are often exposed to ageist content in literature, film, media, and in other aspects of everyday life. This exposure can damage a child's attitude toward older adults, which can follow them into adolescence and beyond. But, I firmly believe that intergenerational interaction has a positive affect on negative age biases and can reduce ageism in children. Results of past studies have shown that there is a significant reduction in child ageism after interaction with older adults, although there are some limitations that should be taken into consideration. This presentation will discuss previous research pertaining to the benefits of interaction between older adults and youth. Additionally, this presentation will make suggestions on ways to improve age bias in children and young adults. Several examples of how students around the world are promoting intergenerational interaction will be shown. Lastly, this presentation will make proposals for future research.

COLLEGE OF Arts & Sciences

History

War Crimes on Okinawa

Michael Broccolo

Sponsoring Professor

Dr. Thomas Chambers

This project was a case study of the war crimes committed during the Battle of Okinawa in the Pacific theater of the Second World War. The project used a careful examination of primary documents including newspaper articles, memoirs, and propaganda posters along with secondary sources that consisted of academic journal articles and monographs. The goal of the project was to examine the intensity of the combat and try to explain the soldiers reasoning for committing the crimes they did. The research shows that the crimes committed were a culmination of the animosity that was developing throughout the war between American and Japanese soldiers. Frustration, survival, and exhaustion were the main driving forces behind the acts.

COLLEGE OF Arts & Sciences

History

Role of Professional Revolutionaries in the Formation of the 1917 Soviets in Russia

Alexander Bush

Sponsoring Professor

Dr. Mustafa Gokcek

Worker's soviets, meaning "worker's councils" are a type of radical representational democracy that derives power from the masses. These organizations came into being in 1905 and again in 1917 in Russia. Worker's soviets formed by individual factories voting representatives to a soviet, and then the assembled delegates were presided over by an executive committee voted from among the elected representatives. Soviets were influential in the revolutionary period between February and October 1917 and were used as organs of power and control by radical leftist groups, and eventually, the Bolsheviks. Determining the roles of professional revolutionaries in the formation of these soviets is critical to understanding the process of revolution in Russia as a whole. This research was conducted by analyzing numerous scholarly accounts of the period as well as newly available and translated primary documents that had been unavailable before. The debate comes down to whether the revolution was created from the top – down or from the bottom-up, and this paper indicates that, rather than a mass movement of the proletariat, the formation of the 1917 soviets was initiated by professional revolutionaries and dedicated political agitators.

COLLEGE OF Arts & Sciences

History

The Soviet Invasion of Afghanistan: A New Perspective

Ryan Dutschman

Sponsoring Professor

Dr. Mustafa Gokcek

The Soviet invasion of Afghanistan was viewed by the West as nothing more than a continuation of Soviet Third World expansion policy. With the Cold War's academic bias long gone, understanding the USSR's military action in Afghanistan requires a modern reinterpretation. The Soviet invasion of Afghanistan was a legitimate and rational operation to stabilize an increasingly unpredictable region on the southern border of the Soviet Union. Soviet-Afghan relations extend as far back as 1919, and the countries have typically had amicable relations. The invasion was also an opportunity to reassert Soviet superiority in Central Asia as they witnessed increasingly hostile rhetoric from American politicians. U.S. military buildups during the 1970s and 1980s also motivated the Soviets to take action. The bettering of relations between the United States and China, the two biggest threats to the Soviet Union, stoked the fire of fear amongst Soviet planners. Although stopping short of an invasion, the United States took similar action in Cuba in the early 1960s when a hostile nation threatened the security and national integrity of America. Instability in Afghanistan and surrounding nations could spread to the Muslim populations of the Soviet Union, threatening to break the USSR apart from within. President Jimmy Carter's decision to arm anti-Soviet rebels propelled the invasion from a minor military operation to one of the most dangerous proxy wars of the Cold War. This research uses writings from some of the preeminent Soviet scholars in addition to the memoirs of Soviet politicians and decision makers.

COLLEGE OF Arts & Sciences

History

Stalin's Revisionism: The Rewriting of the Russian Revolution

Samantha Kaczor

Sponsoring Professor

Dr. Mustafa Gokcek

In order to boost the public image of Joseph Stalin as a revolutionary hero during the October 1917 Revolution and the ensuing civil war, Stalin's government had made a concerted effort to alter historical documents and narratives to fit this portrayal of him. In particular, the rivalry between Leon Trotsky and Joseph Stalin comes to a head with Stalin's rise to power. This ends with Trotsky being written out of the official historical narrative entirely, exiled, and eventually executed by Stalinist spies in 1940. This research paper aims to discover the means and purpose behind this revisionism, as well as the impact it had on Soviet and Bolshevik historiography.

COLLEGE OF Arts & Sciences

History

Rock and Roll in the Soviet Union

Elizabeth Marohn

Sponsoring Professor

Dr. Mustafa Gokcek

Rock and Roll in the Soviet Union had a symbiotic relationship with the Soviet governmental and social policies during the 1960s and 1970s. This relationship created constant problems for the groups. The government had to make policies to keep the lyrics of the songs and the musicians in line with the official ideology. At the same time the musicians wrote lyrics that abided by the rules of the government or face punishment. This isn't to say that there were not groups that fought back and created music that the government didn't approve of. This music contained lyrics that were considered to be anti-Soviet in nature, which cause those who created them to be considered an enemy of the Soviet Union. Over the years historians tend to only look at Rock and Roll in the Soviet Union from either the lyrical side or the political/social side. These historians focus on the oppression versus rebellion rather than seeing that Soviet Rock could not have survived without the governmental polices. The social and political policies made by the government allowed for this music to flourish. The focus of this research is to illuminate this relationship between social/political polices of the government and the lyric/musician and how it affected the people of the Soviet Union.

COLLEGE OF Arts & Sciences

History

“Ex Animā Actas: Beliefs Translated to Battle”

Miles Michienzi

Sponsoring Professor

Dr. Thomas Chambers

War has been a recurring issue since the dawn of man, some would say war even predates humanity. Therefore it is fair to say that the who, when, where, and most importantly the why are causal in their relationship with the how of combat. The reason that a person has for being present on the lines of battle is often a very good indicator as to how that person will conduct themselves in a combat situation. Equally important is the mindset. Psychological and biological factors play a role in the combative prowess of the human being. Recently governments have passed treaties in an attempt to regulate war, this is the latest step in a long legal and philosophical saga of what is right and wrong during wartime. However, what compunction has a soldier whose life is on the line to follow rules and restrictions that promise death and defeat. This is a case study of the American Revolution. This is a war before war crimes existed as a material concept. This is a guerilla war, as all revolutions are. This is a look at what was done by the belligerents and a demonstration to show that their reasons dictated their deeds.

COLLEGE OF Arts & Sciences

History/International Studies

Conflict in the South China Sea

Maine Walker

Sponsoring Professor

Dr. Robert Kane

American leaders and citizens have had the privilege of considering the United States as the undisputed superpower in the world since the end of the Cold War. My research focuses on the increasing prospects of conflict in East Asia between the United States and China. China's rapid rise economically, coupled with its traumatic history during the period of imperialism, has developed an expectation of regaining global prestige. This expectation challenges the experience of American policy accustomed to a position of leadership in international affairs. The question is how this clash of rising expectations with established experiences will result? I examine recent Sino-American relations to determine a likely course of events while recommending a policy approach.

COLLEGE OF Arts & Sciences

International Studies

Por La Paz; The Colombian Armed Conflict & Peace Process

Kimberly Keysa

Sponsoring Professor

Dr. David Reilly

Dr. Christopher Lee

The Colombian Armed Conflict has been one of the worlds longest running internal conflicts in the modern world. We have continued to see this struggle play out today, as both state and non-state actors work to negotiate long awaited peace. In Colombia, political violence has been perpetrated on behalf of both the state, paramilitaries, and revolutionary guerrilla groups, specifically the Fuerzas Armadas Revolucionarias de Colombia (FARC) for over fifty years. I also take into account the role of the narco-State and narco-economy, as well as how the United State's War on Drugs and War on Terror has affected the conflict.

The strategy used to conduct this research will be Ragin and Lijphart's Comparative Method of political analysis. This will be a comprehensive study that examines instances of armed conflict before the peace accords, compared to those instances after the most recent peace accords in Havana, Cuba.

I will be examining if in fact, the peace negotiation efforts have been successful in reducing the amount of guerrilla, and paramilitary activity, thus, a reduction in political violence in Colombia overall. I argue that the passage of such a peace deal is monumental, in pursuing the prospect of lasting peace. However, demobilization efforts have been severely one sided, favoring the State and paramilitaries over the FARC.

Colombias case is truly unique, because of the various state and non-state actors that have reigned down terror on the civilian population. It is for that reason that an integral part of the peace process was reconciliation for the victims. The world is able to learn lessons in conflict resolution from the successes (and failures) of the Colombian peace process, that can be extrapolated to other countries across Latin America, Africa and the Middle East.

COLLEGE OF Arts & Sciences

International Studies

Free Speech and Censorship on College Campuses

Kevin Barry

Sponsoring Professor

Dr. David Reilly

The exercise of free speech has been a hot button issue in today's politically charged climate. Throughout the United States, there exists a notable percentage of individuals who are willing to censor speech that might be interpreted as distasteful, offensive, or hateful. Although such speech might be reprehensible in nature, Supreme Court precedent by-and-large protects such speech so long as it does not incite imminent lawless behavior. Despite this, an alarming percentage of individuals, most notably at Institutions of Higher Learning, find it acceptable to prohibit certain speech or expression of viewpoints that are offensive or biased against certain groups of people. Such findings have dangerous implications, as the bar for one might find offensive is rather vague, and has the potential to lead to the suppression of viewpoints and the inhibition of civil discourse.

The findings of several studies indicate that there are a notable percentage of students in favor of censoring certain speech. However, might there be a relationship between the type of institution a student attends (public v. private), and whether or not there is a willingness to censor speech? As public institutions typically have a much more diverse student body than private institutions (which are predominately white throughout the nation), it will be found that students at public institutions will be more willing to censor speech or expression which they might find as offensive or hateful. Through administration of a survey designed to gauge attitudes regarding speech and censorship at both a private and public university, I anticipate the data will support the hypothesis that students at public institutions are more likely to be willing to censor specific speech or conduct.

COLLEGE OF Arts & Sciences

International Studies

Political Prisoners

Arianna Drissi

Sponsoring Professor

Dr. Christopher Lee

This presentation will look into political prisoners and the relations within a related subfield.

COLLEGE OF Arts & Sciences

International Studies

Sports and Foreign Policy

Dylan Kubala

Sponsoring Professor

Dr. Christopher Lee

The power of sports goes much farther beyond the game that is played in the stadium. Sports have the power to go as far as helping to shape foreign policy for many countries.

COLLEGE OF Arts & Sciences

International Studies

What the Frack?

Benjamin Schian

Sponsoring Professor

Dr. Christopher Lee

This poster will be focused on hydraulic-fracturing, fracking" for natural gas. I will present on both what causes

COLLEGE OF Arts & Sciences

International Studies

Conflict of Paradigms: International Controversies of Capital Punishment in Saudi Arabia, China and the United States

Christopher Selak

Sponsoring Professor

Dr. Jamie Pimlott

Dr. David Reilly

Capital punishment internationally is a highly debated topic of discussion among individuals both in leadership and societies. Capital punishments original intended to deter and act as a form of retribution. However, among various countries, laws, restrictions and regulations add a unique perspective to each case. This study will examine the similarities and differences in three countries: Saudi Arabia, China, and the United States. Exploring the similarities and difference will hopefully shed light on the persistence of a human rights issue across the world.

COLLEGE OF Arts & Sciences

International Studies

The Rising Power of Right-Wing Populism in Europe

Ibrahim Yilmaz

Sponsoring Professor

Dr. David Reilly

This thesis aims to investigate the causes of increasing right-wing populist parties success between the time period of 2008 and 2018. The recent rise of the right-wing populism in Europe shows itself in different fields. First of all, the increasing votes for right-wing parties in local, national and European Parliament elections cannot be ignoring. Secondly, right-wing acts of violence and protests are increasingly manifest itself. Thirdly, Right-Wing discourse in European politics is increasing and becoming increasingly normal. Lastly, the right-wing parties supporters are absolutely against immigrant, foreign, and Muslim population in Europe.

COLLEGE OF Arts & Sciences

COLLEGE OF Business

International Studies / Economics

**Who Becomes A Terrorist? The Origins of Islamist
Extremism**

Nicole Matheis

Sponsoring Professor

Dr. David Reilly

Dr. Goncalo Monteiro

Recent headlines highlight the sobering reality that terrorism is on the rise and poses a serious threat to national security. In developing successful counterterrorism strategies, it is crucial to understand the role human capital plays in motivating an individual to engage in terrorist activities. This paper compares the socioeconomic characteristics of indicted or convicted Islamist terrorists to a representative sample of Muslim Americans. It presents an empirical analysis of the determinants involved in terrorist activities using data on known Islamist militants. The resulting evidence suggests that Islamist terror operatives obtain more years of schooling than the average Muslim American. U.S. citizens are less likely to become involved in terrorism, while Muslim converts and younger individuals are more likely. These results 'explode' the common stereotype that terrorism is a product of disadvantaged, naïve, and uneducated individuals.

COLLEGE OF Business

Management - International

The Effect of Free Trade and Automation on U.S. Manufacturing Jobs

Angela Kendt

Sponsoring Professor

Dr. Victor Pimentel

This paper explores the most recent history of the manufacturing industry in the United States. With the emergence of multinational free trade agreements and the rapid advancement of technology, employment via manufacturing jobs has been decreasing since the turn of the century. Despite the loss of these jobs, it is important to note that unemployment levels overall in the United States have been relatively low. In order to understand the decline of the industry in the United States, it is necessary to examine what happened to manufacturing jobs, who is affected, and how the jobs are shifting.

COLLEGE OF Arts & Sciences

Microbiology

Norepinephrine's Effect on Enterobacteriaceae Growth, Communication, and Pathogenicity

Shanique Service

Sponsoring Professor

Dr. Mark Gallo

We share our bodies with a collection of bacteria that construct our microbiome and have become key mediators inside us. Extracellular signals can affect the physiology of certain bacteria, disrupting this symbiotic relationship, thus allowing bacteria to become pathogenic to the host. Norepinephrine is a catecholamine that functions as a hormone and neurotransmitter to mobilize resources in mammals. It also stimulates the cell growth of *Escherichia coli*, a gram-negative bacterium in the intestinal tract. *E. coli* is a member of Enterobacteriaceae family, bacterium that share distinguishable properties including the ability to produce toxins, enzymes, and other factors that allow *E. coli* to function as a virulent pathogen. One such factor is an autoinducer, which regulates population density through quorum sensing as well as signals for virulence factor production. Whether other enteric bacteria can interpret this *E. coli*-specific autoinducer is unknown, as it is unclear if other enteric bacteria have autoinducers functioning at this level. This study will observe cell growth and virulence factor production in *Escherichia*, *Citrobacter*, *Vibrio*, *Salmonella*, *Yersinia*, *Klebsiella*, *Shigella*, *Enterobacter*, and *Serratia* to determine the effects of autoinducer crosstalk functionality on other Enterobacteriaceae.

COLLEGE OF Arts & Sciences

Nursing

Nursing Students' Cultural Competency with the Deaf Community

Anna Eckhardt

Sponsoring Professor

Dr. Malena King-Jones

Nanette Harmon

mkozub@niagara.edu

This study will demonstrate need for student nurses to have clinical and experiential exposure to students who are Deaf and use American Sign Language to communicate. Nursing students often do not learn the different needs a Deaf patient has and what resources they are legally obligated to. The subject population for this study will be nursing students in the second semester of their senior year, after completion of a community health nursing course where different cultural needs are taught in classroom. The goal of this study is to highlight the lack of knowledge some nursing students may have to serve this population and create discussions about how the nursing profession can do better in communicating with patients and educating nurses in cultural and language needs.

COLLEGE OF Arts & Sciences

Nursing

Psychological Screening in Survivors of Pediatric Cancers

Ashleigh AK Miller

Sponsoring Professor

Dr. Frances Crosby, Ed.D., RN

Carol Winkler, RN, MSN, PNP, PMHNP

The purpose of this project is twofold. First, a systematic review of literature was conducted to determine the psychological issues pediatric cancer survivors are facing post-treatment. Second, a survey was created for distribution to providers to ascertain the current state of screening in Western New York. Analysis of selected research has shown that the mental health of survivors can be affected long term by the diagnosis and treatment of cancer at a young age. This suggests that this target population needs additional screening and support after treatment has been deemed successful. Much of the literature supports the need for additional options for psychological services for this patient population. The research analyzed is not conclusive about the type of screening being provided, nor how it is utilized. Further research is recommended to address the latter. A survey has been created to be supplied to health care providers, inclusive of nurses, physicians, psychologists/psychiatrists, social workers, and other licensed professionals who work with this patient population. Responses will be analyzed to determine the type of screening tools being used, how they are utilized, and the providers' thoughts about the need for long term psychological surveillance.

COLLEGE OF Arts & Sciences

Philosophy

Marcuse in the Advertising Age: The Rise of One-Dimensionalism in the Consumer Society

Christine Burke

Sponsoring Professor

Dr. Alexander Bertland

Americans like to believe that they are among the freest people in the world, in large part because of the economic system we enjoy. But capitalism actually unfrees us in a way that is difficult to understand and nearly impossible to escape; philosopher Herbert Marcuse recognized this problem in the latter half of the twentieth century, inspiring important countercultural movements in the 1960s and 70s. However, as we move out of the industrial age and into the information era, we find ourselves moving ever further away from Marcuse's liberating ideals. This paper will argue that (1) advertising in the digital age propagates and perpetuates our unfreedom while at the same time allowing us to believe we are free and that (2) this demonstration of Marcuse's concerns proves that his analysis of capitalist society is still relevant today. It will define this unfreedom and explain how we play the role of oppressed oppressors, as well as giving specific examples of how advertising exacerbates the problem at hand.

Several of Marcuse's most important works are referenced, including *One-Dimensional Man* and *An Essay on Liberation*, and multiple secondary sources are cited as support for Marcuse's claims, including noted Communications scholar Robert W. McChesney. These sources help to show that we have become a one-dimensional society, though we are barred from realizing it, and prove that Marcuse's ideas are still profoundly relevant today.

COLLEGE OF Arts & Sciences

Political Science

Relationship between Religion and Consumption of pornography

George Lodick

Sponsoring Professor

Dr. Christopher Lee

Reviewing both the relationship of Religion and Pornography and also Pornography consumption and how it effects the religiosity of an individual.

COLLEGE OF Arts & Sciences

Political Science

NRA and Congressional Results

Emily Wilbur

Sponsoring Professor

Dr. Christopher Lee

Interest groups have an immense amount of influence on the inner working of Congress. The NRA in particular, is a very powerful group that advocates for gun rights and protection of the 2nd Amendment. This project will analyze the ways and to what extent, the NRA is effective in manipulating the members of Congress to support their agenda.

COLLEGE OF Arts & Sciences

Political Science

Chief Justice: Leader or Title?

Michael Buck

Sponsoring Professor

Dr. Jamie Pimlott

With the modernization of the Supreme Court and an evolved status from the least dangerous branch of government" to the center stage that the SCOTUS takes in our lives dealing with controversial issues

COLLEGE OF Arts & Sciences

Political Science

Domestic Violence vs. Prior Victimizations

Anna Donnelly

Sponsoring Professor

Dr. Christopher Lee

This study analyzes the correlation between individuals in a domestic violence/intimate partner violence relationship and their prior history of victimization.

COLLEGE OF Arts & Sciences

Political Science

Is Government regulation of the Financial Markets Good or Bad for the Economy

William Fritz

Sponsoring Professor

Dr. Christopher Lee

I will be conducting research to determine whether government regulation of the financial markets improves stability for the economy or in fact adds to its instability. I will look into Federal Reserve policies, laws regarding banking and bankruptcy.

COLLEGE OF Arts & Sciences

Political Science

Automation of the Military

Jason Hake

Sponsoring Professor

Dr. Christopher Lee

This presentation will analyze the increased use of automated technologies under military auspices and the influences they have when conducting war with their use.

COLLEGE OF Arts & Sciences

Political Science

Shootings in the United States

Jordan Hartman

Sponsoring Professor

Dr. Christopher Lee

Trying to understand why our country has so many shootings versus other countries.

COLLEGE OF Arts & Sciences

Political Science

Decriminalization of Drugs

Alexandria LaMantia

Sponsoring Professor

Dr. Christopher Lee

Addicts became criminals overnight, people who were considered patients of a disease shifted to criminals. This paper will be on the pros of decriminalizing drug use.

COLLEGE OF Arts & Sciences

Political Science

Comparing the Black Vote in 2008 to the Women's Vote in 2016

Emily Leffler

Sponsoring Professor

Dr. Christopher Lee

Identity politics has always been a part of the voting process in the United States. It has been used as a way to capture the support of some and used to suppress the vote of others. This paper investigates how identity politics have shaped the votes of women and African Americans, focusing particularly on the 2008 and 2016 presidential elections. In particular, seeks to explain why African Americans overwhelmingly supported Barack Obama in the presidential election of 2008 but why women did not give the same level of support to Hillary Clinton in 2016. Using data from the American National Election Studies from 2008 and 2016 I first construct measures to evaluate the degrees to which individuals identify themselves as a member of a relevant group, and then use logistic regression to determine how such group identities impact vote choice.

COLLEGE OF Arts & Sciences

Political Science

Sex Education in the United States

Madison May

Sponsoring Professor

Dr. Jamie Pimlott

Sex education in the United States is a highly debated topic of discussion for policy makers at the federal and state levels of government. The original intent of sex education is to educate adolescents on safe sexual practices with the goal of reducing unintended pregnancy. However, sex education has moved away from scientifically based curricula towards a policy that promotes abstinence which has been shown to be related to higher rates of unintended pregnancy. This study examines what relationship, if any, exists between sex education policy and other factors like religious beliefs, political party control, and the seldom discussed influence of women in state legislatures.

COLLEGE OF Arts & Sciences

Political Science

Systems of Government Effect on Wealth

Kevin McDonnell

Sponsoring Professor

Dr. Christopher Lee

Political scientists especially comparativists have long sought to answer whether some systems of government are more economically viable than others. Through a comparison of GDP (Gross Domestic Product) and citizen salaries, this study seeks to draw a correlation between systems of government (authoritarianism, democracy, socialism etc.) and a countries ability to attain wealth. This study will seek to contextualize countries' positions within the international economy historically as well.

COLLEGE OF Arts & Sciences

Political Science

Gender and Organized Racism

Sadie Newcombe

Sponsoring Professor

Dr. Christopher Lee

In my research, I delve into the issues of gender and organized racism in the contemporary United States.

COLLEGE OF Arts & Sciences

Political Science

Far Right Movements

Sadie Newcombe

Sponsoring Professor

Dr. Christopher Lee

My research delves into issues concerning organizational racism in the United States.

COLLEGE OF Arts & Sciences

Political Science

EDiplomacy

Morgan Palmer

Sponsoring Professor

Dr. Christopher Lee

The affect that multimedia has on foreign policy.

COLLEGE OF Arts & Sciences

Political Science

Arab-Israeli Conflict: Is a Two-State Solution Dead?

Olivia Sauro

Sponsoring Professor

Dr. Christopher Lee

Is a two-state solution the only hope for peace in Israel?

COLLEGE OF Arts & Sciences

Political Science

Racism and Police Brutality in America

Freddie Wade

Sponsoring Professor

Dr. Christopher Lee

With the evolution of technology in modern times the world itself has become much more globalized. The more globalized nature of the world has in turn allowed for non-state actors such as corporations to expand very rapidly often without the supervision of state entities. Criminal organizations in particular have been able to take advantage of the expanding anarchy created by globalization to become international entities that states such as the United States of America have had increased difficulty combating. Mexican drug cartels and terrorist organizations are both great examples of these rising and expanding international criminal organizations. With the use of technology and the assistance of international anarchy they have been able to thrive in the modern age in ways they may not have not been able to before.

COLLEGE OF Arts & Sciences

Political Science

Racism and Police Brutality in America

Freddie Wade

Sponsoring Professor

Dr. Christopher Lee

The focus of my research is to look at police brutality towards different races. For this research I will gather data on where police officers are over using their authority, as well as the race of the suspect. I will also look at how escalated the situation became between the suspect and officer(s). The purpose of this research is to find if there is a correlation between police officers over using their authority towards minorities, and to see if officers are more aggressive towards minorities.

COLLEGE OF Arts & Sciences

Political Science

Corruption and Human Trafficking

Taylor Zurek

Sponsoring Professor

Dr. Christopher Lee

In order to have a successful human trafficking ring, systemic corruption is a necessity. Because of this, criminals consider corruption to be a necessary investment and it may be the main cost factor for traffickers.

COLLEGE OF Arts & Sciences

Political Science / Environmental Studies

Radicals on the Ridge

Trejahn Hunter

Sponsoring Professor

Dr. David Reilly

Universities bear an intrinsic responsibility to provide their students with a versatile and thought-provoking understanding of the world around them. In order to achieve this level of understanding universities must integrate and facilitate radical thought and activity as major components of the learning experience for students to digest. An evaluation of Niagara University's student and faculty struggle toward progressive university changes and the campus's implementation of observable features directed toward integrating and facilitating the student engagement of equality, justice & activism will be exacted through a counterfactual analysis. More specifically, the "logically constructed" non-experimental counterfactual option will allow for the comparison of results between a fictitious Niagara University campus without the engagement of the student and faculty bodies and the actual campus encompassing their involvement. Resulting from this research a glimpse of the progress that NU has made in facilitating equality, justice & activism, and progress in these areas that can be made in the future, becomes perceptible. I anticipate the evidence to indicate that there is a significant correlation between Niagara University student and faculty engagement and the manifestation of observable progressive elements on campus. Niagara University, thus, has the potential to serve as a model university for others striving to realize a more just campus.

COLLEGE OF Arts & Sciences

Political Science / Environmental Studies

Public Opinion on Fracking in New York and Pennsylvania

Ivette Leon

Sponsoring Professor

Dr. David Reilly

Due to the location of the Marcellus Shale, fracking has become a controversial topic in New York. There is a huge controversy whether the advantages of fracking is beneficial or harmful to the public. Many in favor of fracking argue that the benefits of fracking include economic growth. Those who oppose, say it may encourage economic growth however, there are negative repercussions that go along with it. This study will examine public opinion from New York State residents in regards to fracking. Using sociodemographic data and statistics, I will examine the level of awareness and public opinions of NYS residents. My expectations will be that New York State counties that border Pennsylvania will not have a positive public opinion on hydraulic fracturing. Only will this study examine public opinion in NY/PA on fracking but also can be used for other states in the country that are enduring the same issue.

COLLEGE OF Arts & Sciences

Political Science / Environmental Studies

The System of Greed, is Capitalism Killing the Environment?

Amara Schultz

Sponsoring Professor

Dr. David Reilly

In the past decades, the environment has become an increasingly important topic in politics as scientific research resoundingly concludes current ways of life will result in environmental destruction to the point of collapse. With this imminent threat looming overhead, researchers have studied and developed policies to curtail the negative effects of industrialization and pushed to see changes integrated into government policy to improve the degrading environment. But, is it possible that these policies only scratch the surface of the destruction? Is it possible that certain economic structures are more likely to create long-term environmental prosperity? To figure this out, I will be comparing various countries and scoring them on the level of capitalism/socialism they display. I will then rank the countries and compare them environmentally, based on (1) air, water, and soil pollution, along with waste; (2) consumption of natural resources; and (3) loss of natural habitat and biodiversity. The factors that will determine the level of capitalism/socialism will be (1) to which degree the government interferes with the market, (2) budget spending on welfare programs, (3) presence and degree of universal benefits, (4) tax percentage, and (5) redistribution of wealth. I expect to find that countries with more capitalist policies, when compared to countries with more socialist policies, display higher amounts of air, water, and soil pollution, as well as exploit larger amount of natural resources. I predict capitalist states also generate more destruction of natural habitats and have higher loss of biodiversity.

COLLEGE OF Arts & Sciences

Psychology

The Correlation Between Childhood Trauma and Later Life Substance Abuse

Brianna Chupa

Sponsoring Professor

Dr. Susan E. Mason

This project was designed to collect data on the effects of traumatic experiences. A major goal of the study was to examine the relationship between past traumatic experiences and current use of drugs, including alcohol. Participants were asked to complete a questionnaire that consisted of basic demographic questions, as well as questions about the individual's drug use, alcohol use and its effects, and earlier traumatic experiences. The findings will contribute to our understanding of how individuals are affected by trauma.

COLLEGE OF Arts & Sciences

Psychology

The New Age of Creative Expression: The Effect of Blogging on Emotional Well-Being

Abbie Hibschi

Sponsoring Professor

Dr. Susan E. Mason

Creative expression has been proven to have a tremendous therapeutic value. While this normally takes place in the form of a journal or diary, blogging has become an increasingly popular venue for expression. Recent studies have shown that creating a blog has numerous positive effects on a wide range of populations, from adolescents with socioemotional difficulties to teens battling terminal illnesses. The present study attempts to identify if blogging about general topics can improve emotional well-being. Over the course of two weeks, 22 participants completed a series of 6 blog posts using a series of prompts. Some participants were asked to create a public blog, while others were asked to make their posts private and closed to comments. The results show that blogging did significantly improve the emotional well-being of the participants. This improvement advocates for the usefulness and therapeutic value of blogging.

COLLEGE OF Arts & Sciences

Psychology

Assessing College Student-Athletes' Stress and its Potential Effects on Performance

Olivia Rizzacasa

Sponsoring Professor

Dr. Susan E. Mason

The aim of this study was to measure the levels of everyday stressors of college student-athletes and the effects of stress on their performance. The participants included club sport athletes from the university and they completed a series of two surveys. The first survey that participants completed was the College Student-Athletes' Life Stress Scale. The follow up survey was a post competition assessment form. The results of the study showed implications of the possible effects of different stressors on athletic performance.

COLLEGE OF Arts & Sciences

Psychology

Intolerance of uncertainty and cognitive test anxiety in college-age students

Amanda Garry

Sponsoring Professor

Dr. Milen Radell

Test anxiety is common in the school and college settings and negatively impacts performance on tests and other tasks. The current study examined whether the personality trait of intolerance of uncertainty (IU), previously associated with anxiety and worry, is also related to cognitive test anxiety and performance on a memory task. Participants completed a paired-associate task in which they had to remember and recall a list of word pairs, after random assignment to one of three groups. Each group received different information about the difficulty of the task. One group was told that the task would be difficult, another that it would be easy, while the third received no information. All participants also completed self-report measures of IU, cognitive test anxiety, anxiety associated with task uncertainty, generalized anxiety, and family responsibility. We hypothesized that participants who received no information about the task would experience greater uncertainty and anxiety, in particular if they also had greater IU, and that this would negatively affect performance. As expected, a positive correlation was found between IU and cognitive test anxiety. Consistent with prior research, those with higher test anxiety performed worse on the task. However, neither the type of information provided about the task nor IU were related to performance. Finally, participants who reported greater responsibility to their families were more likely to have higher IU, and experienced more anxiety associated with the task.

COLLEGE OF Arts & Sciences

Psychology

The Effect Of The Personality Traits Of Behavioral Inhibition And Intolerance Of Uncertainty On Performance In A Trust Game

Lilly Lupinetti
John Taylor

Sponsoring Professor
Dr. Milen Radell

Trust plays a key role in decisions made during social interactions, and is affected by a number of factors, including personality, the social partner's reputation as well as prior experiences with that partner. The current study examined how the personality traits of behavioral inhibition (BI) and intolerance of uncertainty (IU) impact perceptions of trustworthiness and decision-making in a trust game. Participants interacted with three partners portrayed as trustworthy, untrustworthy, or neutral in biographical information. On a given trial, participants could either keep \$1 or send \$3 to one of the partners. In turn, the partner could either keep the whole amount, or send back \$1.50 to the participant. Whenever a participant sent money, they could choose to find out the outcome of their investment immediately or after a short delay. Participants were told that if they wait, they would receive more money back from their partner. They were also asked to rate the trustworthiness of each partner before and during the game. BI and IU were assessed using self-report questionnaires. Based on prior research suggesting that individuals with higher BI perceive neutral information more negatively, we hypothesized that these participants would be less likely to send money to the neutral partner, compared to those with lower BI. We also expected that those with higher IU would opt to receive immediate rather than delayed feedback, and therefore forego the potential for higher profit, in order to avoid the uncertainty associated with waiting.

COLLEGE OF Arts & Sciences

Psychology

Adult Attributions Regarding the Causes and Flexibility of Behavior

Ellie Markarian

Sponsoring Professor

Dr. Donna Thompson

Two opposing attribution theories were the basis of this study: entity theory and incremental theory. These theories were tested against various categories including intelligence, moral character, physical skills/talents, and personality traits. A survey containing different types of questions was created to investigate whether people are more likely be on the side of the entity theory which explains that outcomes related to these categories are fixed or uncontrollable, or if more people are on the side of the incremental theory which holds that these outcomes can be changed through effort. The design of this test will pinpoint which categories people are likely to attribute as entity vs. incremental and if the subjects are consistent with their beliefs in these areas. Results will shed light on whether or not these theories should be implemented in classrooms in order to promote people to attribute outcomes to the incremental theory so to avoid the consequences of attributing outcomes to the entity theory.

COLLEGE OF Arts & Sciences

Psychology

Visual Acuity in Goldfish

Brian McGuire

Sara Vogel

Olivia Rizzacasa

Shannon Wilk

Sponsoring Professor

Dr. Donna Thompson

Dr. Milen Radell

Our presentation summarizes an experimental study using operant conditioning to test visual acuity in goldfish (*Carassius auratus*). Two calico fantail goldfish were conditioned to look through portholes at the end of the tank. The fish could see black and white stripes positioned at a distance of 20 cm from the portholes. Stimulus cards varied from 3 to 55 black-white pairs (i.e., 3 to 55 cycles) per 11 cm. The fish were initially shaped to bite stimulus cards with 3 or 4 cycles by rewarding the fish with food for biting the porthole displaying stripes rather than a control stimulus (123 cycles). Testing began once fish reached an 80% criterion. Fish were presented with various 5 to 7 stimulus cards on each day of the 28 testing days, 20 trials per day. Both fish were successful, reaching a minimum of 70% accuracy, on stimulus cards with 18 or fewer cycles (comparable to 20/1025 on a Snellen scale). One additional calico fantail fish and three black moors are being trained with the eventual goal to compare the visual acuity of the black moors that were artificially selected to have enlarged telescopic eyes with the fantail fish that have unaltered eyes.

COLLEGE OF Arts & Sciences

Psychology

The Effect Cognitive Load and Jury Instructions have on Juror Decision Making

Hannah Sullivan

Sponsoring Professor

Dr. Burt Thompson

I investigated juror's ability to reach an accurate verdict while under different conditions of cognitive load. Half of the mock jurors were also provided clarifying information about eyewitness memory in the form of juror instructions. In the experiment, mock jurors read a trial summary describing an armed robbery at a convenience store that included eyewitness testimony. Jurors were randomly placed in conditions of high or low cognitive load to test if the need for cognition played a role in the decision making process. The conditions of high and low cognitive load affected the way jurors reviewed the case summary and eyewitness testimony. Jurors rendered a verdict and gave a confidence rating of their decision. Next, jurors either read the New Jersey "Henderson" juror instructions or read about an unrelated topic. Jurors rendered a second verdict and confidence rating at the end of the experiment. I predicted that mock jurors under the condition of low cognitive load that read the juror instructions would be more able to process initial information and make changes when new information became available. This experiment was also created to determine if confidence ratings were distinguishable between mock jurors based on their conditions of cognitive load and clarifying memory information. Implications about juror decision making under cognitive load was discussed.

COLLEGE OF Arts & Sciences

Psychology

Human Foraging Behavior Under Uncertainty and its Relationship to Personality

John Taylor

Sponsoring Professor

Dr. Milen Radell

Foraging behavior, and its relationship to the personality traits behavioral inhibition (BI) and intolerance to uncertainty (IU), both associated with an increased risk for anxiety disorders, was examined using a conditioned place preference task. In this task, participants searched for reward in a virtual environment consisting of multiple interconnected rooms. One of the rooms (the rich room) was paired with a high rate of reward but a low rate of punishment (i.e., chance to lose already acquired rewards) while another room was the opposite. Preference for each room, including a completely new room, was measured in a subsequent test. In addition, the amount of information available about the new room was manipulated. For some participants, the color of its door matched that of the rich room (informed condition) – for others, the color of the door was completely new (uninformed condition). We expect that individuals who rate higher in BI and/or IU will show greater avoidance of the new room, in particular when uninformed, and of the room where more punishment was previously administered.

COLLEGE OF Arts & Sciences

Psychology

Effects of Single-Sex Schools on Gender Stereotyping

Brigid Treverton
Cheyenne Loveland

Sponsoring Professor
Dr. Donna Thompson

College students answered a questionnaire measuring gender stereotypes to determine whether students from single-sex schools have different levels of gender-typed thinking than do students who attended coeducational schools. A second aspect of this study involves researching the concept of gender essentialism measured by the Human Attribution Scale. Based on previous work, it is also hypothesized that students who previously attended single-sex schools will be more prone to gender essentialist thought (Fine & Duke, 2015).

COLLEGE OF Arts & Sciences

Psychology

Comparative validity of various food-related thinking styles in explaining symptoms of binge eating and bulimia

Brigid Treverton

Sponsoring Professor

Dr. Timothy Osberg

College students (266 women, 61 men) completed measures of food related thinking styles (Desire Thinking Scale, Food Craving Action and Acceptance Questionnaire, Irrational Food Beliefs Scale, and Power of Food Scale) along with measures of eating disorder symptomology. Bivariate analyses revealed that Power of Food Scale (PFS) scores were the strongest correlate of both binge eating and bulimic symptomology. Hierarchical regression analyses demonstrated the incremental validity of PFS scores in relation to the other predictors.

COLLEGE OF Arts & Sciences

Psychology

The easy-to-hard effect in goldfish visual discrimination

Jenna Vandette

Sara Vogel

Musab Ersoy

John Taylor

Sponsoring Professor

Dr. Milen Radell

Dr. Donna Thompson

The easy-to-hard effect in perceptual learning shows that training with easier examples can facilitate initially difficult or impossible distinctions between very similar stimuli. This effect has been reported to occur in both humans and other species. In the current study, we tested whether easy-to-hard training could facilitate visual discrimination in common goldfish (*Carassius auratus*). Fish performed a two-alternative forced choice discrimination task, which consisted of simultaneously presenting two striped patterns at a constant distance away on the outside of the tank. The stimuli were visible through portholes mounted on the tank wall, with fish required to approach and bite the porthole corresponding to one of the stimuli (i.e., the target stimulus) in order to receive a food reward. The target stimulus remained constant throughout training. One set of fish were randomly assigned to a training schedule where stimuli became more similar as training progressed. The other set were trained only on the most difficult to distinguish version of the stimuli. All fish received the same total amount of training regardless of the assigned schedule. We hypothesized that fish placed on the easy-to-hard schedule would perform better at the most difficult stimulus pair compared to fish placed on the constant hard-only schedule, despite receiving less overall training at this difficulty.

COLLEGE OF Arts & Sciences

Public Health

Generating a Reproductive Health Guide for Niagara Falls Youth

Allison Emborsky

Sponsoring Professor

Dr. Deborah A. Leonard

The Oishei Report indicates that 15% of all 15-19-year-old females in the Niagara Falls region will get pregnant. Gonorrhea and chlamydia rates are also of concern. Reported in the Western New York Health Needs Assessment, the case rate for women is 1,748 in 100,000 for chlamydia and 523.0 in 100,000 for gonorrhea. There is web of causes surrounding these problems, some of those being poverty, education and lack of knowledge of resources. The cause I chose to target is the lack of knowledge among teens about the surrounding resources available to them. In cooperation with Planned Parenthood, I worked to create a reproductive health guide for youth in the Niagara Falls area. This was created through a series of surveys from healthcare providers and youth from The Connection. The goal is to distribute it to youth and they can use it as a tool to access the resources they so badly need. In theory, this could reduce the rates of teen pregnancy and sexually transmitted infections if the tools to accessing reproductive services are at their fingertips.

COLLEGE OF Arts & Sciences

Public Health

Combating Food Insecurity in the Niagara Falls Community

Victoria Erikson

Sponsoring Professor

Dr. Deborah A. Leonard

Proper nutrition is part education and part access, both of which can be difficult to obtain for those living in impoverished homes and/or communities. Evidence is presented that suggests that a significant percentage of the population served by Niagara Community Action Program is impoverished to the point where they must choose between paying bills or buying groceries and too often they are forced to choose to pay their bills, which leaves themselves and their families hungry and malnourished. Working with this community partner, some of the obstacles that might limit a lower income families' ability to provide adequate nutrition for themselves were identified and a plan was created for how to make the food these people do have, last as long as possible, and to increase the quantity of donations the food bank receives.

COLLEGE OF Arts & Sciences

Public Health

Dental Hygiene in Nicaragua

Megan Farnham

Sponsoring Professor

Dr. Deborah A. Leonard

Dental hygiene is an important part of everyone's health. Poor dental health can not only result in tooth decay and gum disease, but can also lead to heart attack or stroke if not treated. Infections can easily move into vulnerable places that are exposed to bacteria, and this can quickly turn into pain and difficulties. In the country of Nicaragua, there were 243 Dental personnel between 2000 and 2010. That is around 0.4 dentists per 10,000 people compared to 16 per 10,000 dentists in the United States. With staggering numbers of professionals in Nicaragua, the main goal is preventative care and education. Help from eager community members, local dentists, and the Medical Missions team would be educating communities throughout Nicaragua about the importance of dental hygiene. Children and young adults would be the main target group to set a foundation of dental health at a younger age. With donations of toothbrushes and toothpaste, as well as information on proper dental health, the hope is to create a group of people throughout communities that will not have to seek the limited dental care, and instead experience the effectiveness of preventative care.

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Public Health

Poverty Related Childhood Obesity

Tessa Glavin
Gabrielle Wind
Ashley Mosley
Megan Cassata

Sponsoring Professor

Dr. Deborah A. Leonard

18% of children in Niagara county are considered to be obese. In addition, 22,400 residents in the county live on or below the federal poverty level, leading to food insecurity. Buying unhealthy food is a lot less expensive than buying healthy/organic groceries. Parents want to feed their children for the whole month, but in doing so many resort to buying inexpensive highly processed unhealthy meals. This, on top of high inactivity levels, contributes to the high childhood obesity level. We have developed a program to address this problem by promoting healthy school lunches and afterschool programs that emphasize physical activity.

COLLEGE OF Arts & Sciences

Public Health

Attacking a Hidden Epidemic

Vincenette LaGamba

Elisa Sloth

Jasmine Williams

Nadia Gordon

Sponsoring Professor

Dr. Deborah A. Leonard

In 2015 alone there were more than 5,000 people who were affected by STDs just in Niagara County with a rate above the country's average. Behavioral causes for contracting STDs are the lack of knowledge and awareness of the effects of unprotected sex. On top of that, one-quarter of young adults that are in the high-risk age groups for STDs don't have health care coverage. To address these factors that influence the high rates of STDs, we have created a poster to get the word out about safety precautions that can be taken to lower chances of getting an STD. We also present resources to assist people in acquiring health coverage. To evaluate our progress we will conduct surveys throughout the community to see if health coverage has increased, the STDs rate has gone down or the knowledge about STDs has increased.

COLLEGE OF Arts & Sciences

Public Health

Food Insecurity in Niagara Falls

Ellie Markarian

Sponsoring Professor
Dr. Deborah A. Leonard

Food insecurity affects many members of the Niagara Falls community and occurs when a family or household cannot obtain the food necessary to feed each member. This insecurity is commonly due to a lack of money especially for the many families living at or below the poverty line. There are various services offered to help provide aid to these food insecure families and the Magdalene Project is one of those. A plan was put forward to help stock their food banks with food and other resources through increased donations. In addition, another plan will be presented that was created to inform individuals affected by food insecurity about food storage and limiting waste so to help these individuals optimize the food they do have access to.

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Public Health

Community Outreach Programs and Effectiveness on Prenatal Care and Postpartum Visits

Justice Marshall

Sponsoring Professor

Dr. Deborah A. Leonard

Maternal postpartum care is essential during the first six weeks after delivery because it promotes the overall improvement of a woman's health as she endures many physical, social, and psychological changes after giving birth. Women experience hormonal changes, pain as they recover from childbirth, and some experience postpartum depression. National evidence reveals that 40 percent of women do not attend the postpartum appointment. The postpartum visit is a full assessment of a woman's psychological, social, and physical well-being after birth; critical to her and the care of her newborn. Pelvic and breast exams are performed to ensure proper function and check for abnormalities. Further discussed is infant feeding, plans on returning to work, and also contraceptive use for future family planning. In short, the P3 Center at Niagara Falls Memorial Medical Center is community support and provides case management, pre- and post-partum depression screening, and breastfeeding support for mothers. 2017 data from the P3 Center shows that 31.5 percent of women did not attend their visit. Possible barriers preventing women from attending their appointments were identified and plans to combat those issues are being developed by both the P3 and OBGYN centers. "Centering" is one by-product of the collaboration between the two centers and is a form of prenatal care that is held within a group setting. The P3 Center and OBGYN Center at Niagara Falls Memorial intend to increase the rates of postpartum visit attendance in order to improve the overall improvement of women's health after birth.

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Public Health

A Nutritional Niagara

Kelsey Moulton
Mackenzie Lozina
Kara Hickey
Abigail Augustyn

Sponsoring Professor
Dr. Deborah A. Leonard

The majority of the Niagara Falls community falls below the poverty line causing the population to be malnourished. This malnourishment is caused by an imbalanced diet. There is evidence to suggest that many of the community members lack access as well as financial abilities to purchase nutritious foods such as fruits and vegetables. We will have school children take part in an after school program that teaches kids about nutrition and allows them to sustain a garden for the community. This program will also carry out into an over the summer camp program. We will be partnering with the state to receive state funding for the garden. To measure whether this after school gardening program was successful we could measure how many students participated in the afterschool program, how many families were provided with fresh produce from the gardens, as well as how many students would be interested in doing this every year, as well as how many schools would be willing to participate in an afterschool garden of their own.

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Public Health

Recipes to a Healthier Life

Caroline Reeb

Molly Balbierz

Audrey Fithall

Sponsoring Professor

Dr. Deborah A. Leonard

Niagara Falls residents often do not receive substantial amounts of nutrients from the food they consume due to a preference towards better tasting but less nutritious foods. Overcoming the barriers of flavor and cost can promote a healthy lifestyle. To promote healthy eating, the members of the Niagara Falls community who visit Heart, Love and Soul will be our target group. Healthy recipes that can be prepared and served at Heart Love and Soul were collected, and corresponding healthy recipe cards with nutritional facts were designed for distribution to community members during meal time. Additionally, a presentation on the effects and nutritional value of healthy eating was created to better educate community members on healthy eating. A quick survey has been designed to assess reactions to the meals and to see if community members prepared the meals at home.

COLLEGE OF Arts & Sciences

Public Health

Pollution and Community Health

Madeleine Ross
Audrey Dunn
Amanda Ventrella
Margaret Smith

Sponsoring Professor

Dr. Deborah A. Leonard

Niagara Falls has a long history of environmental pollutants. The community of Niagara Falls was built because of its high power to sustain industry. Unfortunately, industrial advances have resulted in many environmental pollutants. Many people do not realize the effects that environmental toxins can have on a community's overall health. According to the CDC, environmental pollutants have been linked to many kinds of cancers and also mental health issues, such as depression. We have designed a program to decrease the amount of pollution accumulated in Niagara Falls. Our team aims to improve community recycling habits and to educate community members on the effects of pollution. We will assess if our program is effective by testing individuals on their knowledge of pollution and health before and after our implemented program to see if there is an improvement in knowledge. We will also survey community members on their recycling habits to determine if recycling habits have increased. By looking at these factors we can indirectly measure pollution rates. We intend on creating ways to educate the public on the risk factors and dangers of pollution, as well as ideas to improve the community's health and recycling habits.

COLLEGE OF Arts & Sciences

Public Health

Analysis of Outreach for Community Services for the Developmentally Disabled

Abigail Salter

Sponsoring Professor

Dr. Deborah A. Leonard

The field of public health is one that covers a wide variety of issues from education, to vaccination, to health policy, to marketing a service or behavior. A problem that many organizations face in the public service field is spreading the word to the community about who they are and what services they have. According to the World Health Organization (WHO), people with disabilities report seeking more health care than people without disabilities. This same group of individuals has a greater amount of unmet needs. This susceptibility to deficiencies in healthcare opens up a market for organizations that provide care and assistance for those with disabilities and their families. Community Services for the Developmentally Disabled (CSDD) is one such non-profit organization that assists the Western New York region with these issues. This organization is highly regarded among its peers, but their goal is to spread information regarding their services. The main way this will be achieved is through outreach to parent support groups in the area so that a greater percentage of the community CSDD serves will know about their services. Such outreach will be analyzed in its effectiveness using specified survey questions regarding how individuals heard about the services that CSDD employs.

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Public Health

Intestinal Parasitic Infections in Rural Nicaragua

Taylor Sanders

Sponsoring Professor

Dr. Deborah A. Leonard

Neglected tropical diseases, specifically, parasitic infections are a major public health concern within developing countries. Intestinal parasite infections can cause dehydration and loss of nutrients, along with stunted growth and learning disabilities in individuals with long term exposure to parasites. Parasites are often encountered in contaminated water, which will be used to drink or clean food with. This issue is especially prominent in rural areas within Nicaragua where there is minimal access to clean water. Children are the primary group impacted by parasitic infections. Healthcare access is often limited in rural Nicaragua, therefore, education is vital in decreasing intestinal parasite infection rates. The purpose of this project is to spread education and awareness on infection in order to prevent it, and raise funds and supplies to treat the Nicaraguan people. I will be presenting epidemiological data on the severity of intestinal parasite infections, examples of educational materials, and a fundraising plan.

COLLEGE OF Arts & Sciences

Public Health

Obesity in Niagara Falls

Kaitlin Schreader
Manpreet Singh
Christopher Clark

Sponsoring Professor
Dr. Deborah A. Leonard

Nutrition is a key concept in living a healthy lifestyle. According to the 2016 Community Health Needs Assessment for Charitable Hospitals Community Service Plan 31.3% of adults are considered obese in Niagara Falls. Approximately 50% of adults in Niagara Falls are obese according to Niagara Falls Memorial Hospital. Also, high rates of obesity contribute to Niagara County's poor cardiovascular indicators. From 2009-2014, the percentage of adults who were obese increased by approximately 3.6%. Unfortunately, there are many behaviors that the members of the Niagara Falls community engage in that lead them to becoming obese. 79% of households report that they would rather buy unhealthy food because it is less expensive. Obesity is also a risk factor for many diseases that are big issues in Niagara Falls such as cardiovascular disease and diabetes. Both of these diseases are in the top five causes of mortality. Our program will target eating healthier, and the consumption of more fruits and vegetables to reach recommended daily amounts. Our program plans on reducing the obesity levels within the community. To measure our plan's success food logs of all the people who became involved in the program will be analyzed.

COLLEGE OF Arts & Sciences

Biology

Reducing Unnecessary ER Visits

Gabrielle Wind

Sponsoring Professor
Dr. Deborah A. Leonard

Health Home, a health agency in Niagara Falls, collects data to find what they call “hot spotters”, people who go into the ER over seven times a month. This number of ER visits is unnecessary and many patients return to the ER due to fact they were unhappy with their last visit or because they are not connected with the proper help. In December NFMCC had 100 hot spotters and in January it spiked to about 200. Part of this problem is because patients go to the ER for issues that can be treated by other health programs. A health fair was planned for the hospital staff, so that they can be more informed and be able to refer patients into these programs, thus reducing hot spotters in the ER. With this knowledge and a readily available resource guide, they can help patients can find better treatment, while also decreasing traffic in the ER. The success of this will be measured by analyzing surveys given to the faculty who attended this health fair.

COLLEGE OF Arts & Sciences
Social Work / Rose Bente Lee Ostapenko
Center for Race, Equality, and Mission
Poverty Reduction in Niagara Falls, NY

Karissa Briggs
Sara Smyth

Sponsoring Professor
Dr. Rolanda Ward

The Rose Bente Lee Ostapenko Center for Race, Equality, and Mission has collaborated with the Empire State Poverty Reduction Initiative (ESPRI) to perform data collection in the city of Niagara Falls. We will be giving surveys to the residents of Niagara Falls, NY in locations such as the Department of Social Services and the public library. Through the data collection and analysis, ESPRI will create a program that will partner with local agencies to help residents become gainfully employed. This program will also work to remove systemic barriers that residents face on a daily basis.

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Social Work / Rose Bente Lee Ostapenko Center for Race, Equality, and Mission

Niagara Falls Workforce Development

Meghan Lippa
Wamaka Twea
Nate Smith

Sponsoring Professor

Dr. Rolanda L. Ward

The Rose Bente Lee Ostapenko Center for Race, Equality, and Mission has collaborated with the Empire State Poverty Reduction Initiative (ESPRI) to examine the relationships between different populations and demographics of people and if these factors contribute to an increased risk of poverty. The information found allowed for an attempt to deconstruct and contrast peoples' personal definitions of poverty to current institutional measurements, and to analyze the validity of each.

In hopes of better understanding the nature of poverty and its roots, we considered various theories, previously attempted interventions and explored its needs and barriers. By analyzing the information present in current literature, the hope is to bridge the gap between what is known and what is assumed about poverty as a whole.

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Social Work / Rose Bente Lee Ostapenko Center for Race, Equality, and Mission

Buffalo Federal Court Reentry Program

Carl Messmer
Kartika Carr
Courtney Betts
Sara Smyth

Sponsoring Professor

Dr. Rolanda L. Ward

The Rose Bente Lee Ostapenko Center for Race, Equality, and Mission has collaborated with a federal reentry court to assess its current reentry program. This socio-criminological study focuses on the successful reentry of returning citizens who are involved in the Buffalo Federal Court system. Through the use of case files, and interviews with the returning citizens, we studied the effectiveness of the program. The effectiveness is based upon whether or not the returning citizens' needs are being met, as well as if the returning citizen recidivates.

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Social Work / Rose Bente Lee Ostapenko Center for Race, Equality, and Mission

Youth and Recreational Play

Katherine Pandolfino

Meghan Lippa

Courtney Betts

Sponsoring Professor

Dr. Rolanda L. Ward

The Rose Bente Lee Ostapenko Center partnered with the New Youth Recreation Center organization to conduct a literature review on youth recreation and youth outcomes. The goal of our project is to support the development of a youth recreational center in Niagara Falls. Our work involved reviewing various public health and social emotional outcomes. Based on these indicators further research was conducted on recreational play and positive outcomes on youth. In addition, negative outcomes in communities where a recreational center is not in place was analyzed. Recommendations were presented to the New Youth Recreation Center Board of Directors.

COLLEGE OF Arts & Sciences

Statistics

Positional Salary Cap Allocation and its Relationship with On-field Performance in the NFL

Dustin Dorsino

Sponsoring Professor

Dr. Patrick Tutka

Dr. Marlo Brown

In order to gain a competitive advantage on the field, NFL teams often look to implement salary cap efficiency strategies to optimize the allocation of available funds across their rosters. Most previous research has shown that these strategies contribute to a team's on-field success and league efficiency. The goal of this paper was to evaluate how positional allocation strategies effect on-field performance in the NFL. Salary data was collected on each NFL team's offensive and defensive starters from the 2011-2016 seasons. The percentage of a teams cap space allocated to a certain position or a unit was used to make predictions regarding season win totals and the likelihood of a team winning any game over the course of its schedule. Multiple and logistic regression analyses were used, specifically employing the techniques of stepwise regression and cross data validation. The interpretations rely on both specific players chosen to include in these analyses and the data available for analysis, which only covered the 2011-2016 seasons. The analyses did not find any relative salary commitment, positional or unit-based, that was significantly related to NFL on-field success. This suggests that the salary cap may not be an infallible way to improve the competitive balance throughout the league. The lack of consistent significance across multiple models also shows that the NFL is largely driven by unknown outcomes. Future research should look to analyze the relationship between positional allocation of cap dollars versus the on-field performance of those individual players, instead of the teams success.

