MEETING OF MINDS XXIV

FRIDAY, MAY 13, 2016
UNIVERSITY OF MICHIGAN-FLINT RIVERFRONT CENTER
Meeting of Minds XXIV

Today, we celebrate the twenty-fourth annual Meeting of Minds Undergraduate Research Conference! The purpose of this meeting is to highlight the accomplishments of undergraduate students and their interactions with faculty members from represented universities.

Each year the meeting is held on the campus of one of the participating universities. This year, the University of Michigan-Flint will host 128 presentations. This year’s conference is held in the Riverfront Event and Banquet Center, located on the University of Michigan-Flint campus.

Oral and poster presentations are grouped into four time slots (Sessions A & B in the morning and Sessions C & D in the afternoon), with multiple presentations occurring at one time. These sessions will take place in various locations throughout the Riverfront Center, with oral presentations located in the 2nd floor classrooms and the poster presentations located on the 1st floor lobby. All presentation details are included in the program.

We would like to extend a special thanks to all faculty sponsors who generously devoted the time and provided the means for their students to present their research accomplishments. Faculty sponsors are listed following the students’ names with each abstract.

MOM: A Brief History

Meeting of Minds had its gestation in Spring, 1992, when University of Michigan-Flint Dean Jackie Zeff proposed that the campuses in Flint and Dearborn join together to sponsor a symposium on undergraduate research for their students. As Zeff put the case for the conference at the time, “...one of the most engaging and transforming relationships between student and teacher is that of collaborators in a creative enterprise,” and such relationships could be promoted through an undergraduate research symposium. A joint committee of faculty and students met from late 1992 to early 1993 to plan and implement the project. The committee “hoped this conference would be the first in a series, and that later conferences would include more colleges and universities in that area.”

The first Meeting of Minds conference was held on May 14, 1993 at the University of Michigan-Flint. There was little doubt of the success of the event. As then University of Michigan-Dearborn Associate Dean Paul Zitzewitz noted about the conference, it “clearly generated excitement among the faculty and students who participated. I saw evidence of that excitement from seeing faculty members talking with their colleagues from other campuses; from hearing discussions among students, both Dearborn and Flint; and from observing new contacts made between Dearborn faculty and students.”

Since its inception, Meeting of Minds has grown in size and scope. Conferences have been held every year since the first was held in 1993. Acting on the desire to include more institutions, the committee invited Oakland University to participate in 1995. In 1996, Meeting of Minds was held at Oakland University for the very first time.
The University of Michigan-Flint is one of three campuses of the prestigious University of Michigan. Located in the heart of downtown Flint, UM-Flint is a premier urban campus nationally recognized leader in civic engagement, student veteran support, and outstanding academic programs. Since 1956, action-oriented academics is at the heart of the UM-Flint experience. This approach to learning allows the best students engage issues head-on, explore varying points of view, seek input from others, and become as familiar with realities as they do theories. UM-Flint faculty from over 100 areas of study pour their expertise and creativity into the development of research and service-learning projects that match course curriculum with today's most-pressing issues. Such projects bring learning to life, address community needs, and fulfill students' desires to contribute to the common good.

Since its founding in 1959 with a gift of 196 acres from Ford Motor Company, the University of Michigan-Dearborn has been distinguished by its commitment to providing excellent educational opportunities responsive to the needs of southeastern Michigan. Shaped by a history of interaction with business, government, and industry of the region, the University of Michigan-Dearborn has developed into a comprehensive university offering undergraduate and master’s degrees in arts and sciences, education, engineering and computer science, and management. One third of the campus, more than 70 acres, is maintained as one of the largest natural areas in metropolitan Detroit, serving as a research and educational resource for the campus and the region. The Henry Ford Estate, home to the automotive pioneer and his wife, Clara, for more than 30 years and a National Historic Landmark, is located on the University of Michigan-Dearborn campus.

For the 9,250 enrolled students, the University of Michigan-Dearborn is a place where students learn and grow, explore new ideas, and acquire the knowledge and skills they need to achieve their personal and professional goals. As graduates of University of Michigan-Dearborn, students will have a broad knowledge of the many fields of human achievement, and will be prepared for their careers with imagination, reasoning, and creative problem-solving abilities.

Oakland University was created in 1957, when the late Alfred G. and Matilda R. Wilson donated their 1,444-acre estate and $2 million to Michigan State University for a new college in Oakland County. In 1970, OU became an independent campus and is now a doctoral research-intensive state-assisted institution with over 20,700 students. Anchored by a strong liberal arts program, the university is organized into the College of Arts and Sciences, School of Business Administration, School of Education and Human Services, School of Engineering and Computer Science, School of Health Sciences, School of Nursing, and Oakland University - William Beaumont School of Medicine. Its faculty members have a distinguished record of research and scholarship, much of which is performed jointly with undergraduate students. Located in suburban northeast Oakland County, OU is easily accessible to millions of Detroit metropolitan residents.
Meeting of Minds XXIV
Friday, May 13, 2016
University of Michigan-Flint

PROGRAM

8:30-9:00 am  Registration and Continental Breakfast  Expo Center, Riverfront

9:00-9:10 am  Welcome and Opening Remarks  Expo Center, Riverfront
Douglas G. Knerr, Provost & Vice Chancellor
For Academic Affairs

Announcements
Andre Louis, Office of Research and Sponsored Programs
University of Michigan-Flint

9:15-10:15 am  Oral Session A  SOM Classrooms - Riverfront
Poster Session A  1st floor lobby, Riverfront

10:30-11:30 am  Oral Session B  SOM Classrooms - Riverfront
Poster Session B  1st floor lobby, Riverfront

11:45 am -12:30 pm  Lunch  Expo Center, Riverfront

12:45-1:00 pm  Photo Session  Expo Center, Riverfront

1:15-2:15 pm  Oral Session C  SOM Classrooms - Riverfront
Poster Session C  1st floor lobby, Riverfront

2:30-3:30 pm  Oral Session D  SOM Classrooms - Riverfront
Poster Session D  1st floor lobby, Riverfront

*The conference concludes immediately after the final session*
Meeting of Minds XXIV

Riverfront/School of Management Classroom Floor Map
Meeting of Minds XXIV

Oral Session A
9:15 am – 10:15 am

2315 Riverfront: Biological Sciences

#34
Title: Outgroup Effects in Phylogenetic Tree Construction
Author: Marcell Brikho
Faculty sponsor: Fabia Battistuzzi
Affiliation: Biological Sciences, Oakland University

#45
Title: Building A Large Phylogeny of Archaea
Author: Anthony Coleman
Faculty sponsor: Fabia Battistuzzi
Affiliation: Biological Sciences, Oakland University

#73
Title: Gender Differences Involving Serotonin Receptors in Type I Diabetic Rats
Author: Marisa Cervantes
Faculty sponsor: Amy Banes-Berceli
Affiliation: Biological Sciences, Oakland University

#74
Title: Characterization of the Effects of Zerumbone in Human Renal Cell Carcinoma (RCC) on the activation of the Janus Kinase Pathway
Author: Zachary Walker
Faculty sponsor: Amy Banes-Berceli
Affiliation: Biological Sciences, Oakland University

2317 Riverfront: Art and Art History

#39
Title: "The Hiroshima Peace Memorial Ceremony"
Author: Heather Coppinger
Faculty sponsor: Claude Baillargeon
Affiliation: Art and Art History, Oakland University

#41
Title: Hannah Höch: A Female Voice of the Berlin Dada Group
Author: Maren Obermanns
Faculty sponsor: Claude Baillargeon
Affiliation: Art and Art History, Oakland University
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#49
Title: Defining Authenticity in a Post-Colonial World: Art of the Northwest Coast
Author: Kelsey Robuck
Faculty sponsor: Susan Wood
Affiliation: Art and Art History, Oakland University

#56
Title: The Wrath of Divinity: Nagasaki's A-Bomb and the Urakami Cathedral
Author: Alexis Parchell
Faculty sponsor: Claude Baillargeon
Affiliation: Art and Art History, Oakland University

2319 Riverfront: Philosophy of the Mind

#20
Title: Marxism and the Baha'i Faith: A Comparison of Political and Theological Theory
Author: Joshua Koss
Faculty sponsor: Alan Epstein
Affiliation: Political Science, Oakland University

#25
Title: False Memory of Religious Events in a Community Sample
Author: Ellen Searle
Faculty sponsor: Jennifer Vonk
Affiliation: Psychology, Oakland University

#75
Title: A Sentimentalist Account of Cognitive Neuroscience and Ethics
Author: Jonathon Abdal
Faculty sponsor: John Halpin
Affiliation: Philosophy, Oakland University

#129
Title: An Analogue of the Median Voter Theorem in Approval Voting
Author: Ethan Bush
Faculty sponsor: Francis Su
Affiliation: Mathematics, University of Michigan-Flint

2321 Riverfront: Space and Beyond

#107
Title: Spewing Black Holes II: From Observations to Theory
Author: Hamael Changezi
Faculty sponsor: Rajib Ganguly
Affiliation: Computer Science, Engineering and Physics, University of Michigan-Flint

#108
Title: Spewing Black Holes III: A Theoretical Structure
Author: Paul Manion
Faculty sponsor: Rajib Ganguly
Affiliation: Computer Science, Engineering and Physics, University of Michigan-Flint
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#109
Title: Spewing Black Holes IV: From Theory to Observations
Author: Justin Wisby
Faculty sponsor: Rajib Ganguly
Affiliation: Computer Science, Engineering and Physics, University of Michigan-Flint

#110
Title: Spewing Black Holes V: A Theoretical Twist on Observing Outflows
Author: Daniel Agar
Faculty sponsor: Rajib Ganguly
Affiliation: Computer Science, Engineering and Physics, University of Michigan-Flint

2325 Riverfront: Literary Expressions

#11
Title: The Infinitude Beyond Resignation
Author: Ryan Hayes
Faculty sponsor: Kathleen Wider
Affiliation: Literature, Philosophy, and the Arts, University of Michigan-Dearborn

#46
Title: 19th-Century Marriage: Space for Fulfillment or Intellectual Prison?
Author: Kelsey Margetic
Faculty sponsor: Cecilia Saenz Roby
Affiliation: Modern Languages and Literature, Oakland University

#51
Title: First One Thing and then the Other
Author: Grace Weick
Faculty sponsor: Bailey McDaniel
Affiliation: English, Oakland University

#59
Title: “The good, the bad, and the ugly” The different sides of Antonio in Shakespeare’s Merchant of Venice
Author: Avery Mitevski
Faculty sponsor: Maureen Thum
Affiliation: English/Honors Department, University of Michigan-Flint
#23
Title: Cost-Effectiveness of Interventions to Prevent/Manage Hospital Acquired MRSA Infections: A Systematic Literature Review
Author: Ashley Edwards
Faculty sponsor: Gergana Kodjebacheva
Affiliation: Public Health & Health Sciences, University of Michigan-Flint

#30
Title: Gender differences in the incidence of cancer by type among children and adolescents in Michigan from 1999 to 2011
Author: Jeremy Blankenship
Faculty sponsor: Gergana Kodjebacheva
Affiliation: Public Health and Health Sciences, University of Michigan-Flint

#35
Title: Leukemia induced endothelial cell activation enhances leukemia cell growth identifying this process as a major contributor to overall leukemia progression
Author: Michael Maywood
Faculty sponsor: Gerard Madlambayan
Affiliation: Biological Sciences, Oakland University

#40
Title: Do the Sources of Social Support Affect Posttraumatic Growth?
Authors: Shelby Seyburn, Aundreah Walenski
Faculty sponsor: Kanako Taku
Affiliation: Psychology, Oakland University

#53
Title: Wrongdoers and Instigators: Relationships Between Perceived Stress and Posttraumatic Growth in High School Students
Authors: Lauren Harrison, Geena Osowski, Shelby Seyburn, Aundreah Walenski
Faculty sponsor: Kanaku Taku
Affiliation: Psychology, Oakland University

#60
Title: Impact of Domestic Violence
Author: Alexis Luczak
Faculty sponsor: Lacea Zavala
Affiliation: Education, University of Michigan-Dearborn
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#68
Title: Differential Reinforcement and Play Skills  
Author: Jessica Genaw  
Faculty sponsor: Jessica Korneder  
Affiliation: Human Development and Child Studies, Oakland University

#78
Title: M-STEP: Wayne County Teacher Perspectives of the New State Assessment  
Author: Frankie Sluschewski  
Faculty sponsor: Joseph Musial  
Affiliation: Psychology, University of Michigan-Dearborn

#80
Title: Culture of “hook up” Social Networks and Usefulness in HIV Prevention Among Males Who Have Sex With Males  
Author: Antione Martin  
Faculty sponsor: Deidre Verdun  
Affiliation: Public Health and Health Sciences, University of Michigan-Flint

#85
Title: Characterization of a Red-pigmented Bacterium from Water Celery  
Author: Wai Chun Hohmann  
Faculty sponsor: Jerry Sanders  
Affiliation: Biology, University of Michigan-Flint

#98
Title: Religious Belief: The Influence of Interhemispheric Interaction  
Author: Akrum Eidelsafy  
Faculty sponsor: Jeannette Stein  
Affiliation: Psychology, University of Michigan-Flint

#123
Title: When did my childhood become an art exhibit?!  
Author: Hannah Freedman  
Faculty sponsor: Charlotte Tang  
Affiliation: Computer Science, University of Michigan-Flint
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Oral Session B
10:30 am – 11:30 am

2315 Riverfront: Kids These Days!

#52
Title: Perceptions in Modern Dating
Author: Courtney Murphy
Faculty sponsor: Nicholas Iannarino
Affiliation: Language, Culture, and Communication, University of Michigan-Dearborn

#76
Title: Do Graduated Driver's License Programs Reduce Teenage Drivers Accident Rates?
Author: Timothy Vesper
Faculty sponsor: Amelia Biehl
Affiliation: Economics, University of Michigan-Flint

#92
Title: Millennial Apathy Theory
Author: Matthew Pickard
Faculty sponsor: Kyle Edwards
Affiliation: Cinema Studies, Oakland University

#101
Title: The Developmental Benefits of Playing Video Games for Children and Adolescents
Author: Faiha Osman
Faculty sponsor: Jason Jarvis
Affiliation: Psychology, University of Michigan-Flint

2317 Riverfront: How We Learn

#1
Title: Music Therapy: An intervention for psychiatric patients and their health care staff
Author: Emily Meihls
Faculty sponsor: Maureen Thum
Affiliation: Honors Program, University of Michigan-Flint

#44
Title: Multitasking among Medical Students: The Combination of Environment and Personality
Author: Tudor Moldovan
Faculty sponsor: Jason Wasserman
Affiliation: Biomedical Sciences, Oakland University

#79
Title: Benefits of an Art Therapy Based Mental Health Intervention Within a Preschool Classroom
Author: Cheyne Jarnol
Faculty sponsor: Cynthia Sifonis
Affiliation: Psychology, Oakland University
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#96
Title: Serving the Underserved - The Role of the Physician Assistant
Author: Deanna Patrosso, Eljesa Vitija
Faculty sponsor: Suzanne Selig
Affiliation: Public Health and Health Sciences, University of Michigan-Flint

2319 Riverfront: Community Engagement, Business, and Manufacturing

#36
Title: Incorporating industrial entomophagy via a study of food selection
Author: Emily Dixon
Faculty sponsor: Cindy Sifonis
Affiliation: Psychology, Oakland University

#99
Title: Adamant Arches
Authors: Shuyu Yang, Bruce Edler, Daniel Bloink
Faculty sponsor: Mazumder Quamrul
Affiliation: Computer Science, Engineering and Physics, University of Michigan-Flint

#111
Title: Greening and Grassroots
Author: Paris Freeman
Faculty sponsor: Paul Draus
Affiliation: Sociology, University of Michigan-Dearborn

#120
Title: Your City’s Risky Finances: Why use Interest Rate Swaps
Author: Brad Mikus
Faculty sponsor: Min Jung Kang
Affiliation: Finance, University of Michigan-Flint
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2321 Riverfront: Body and Mind

#61
Title: The Effects of Stress Inducer Yohimbibe and GABA-B Agonist Baclofen on Ethanol Self Administration in Rats
Author: Katerina Cvetanovski
Faculty sponsor: Keith Williams
Affiliation: Psychology, Oakland University

#65
Title: Effects of bisphenol A (BPA) on the expression of human progesterone receptor (PR) in T-47D breast cancer cells.
Author: Brigitte Dwyer
Faculty sponsor: Sumi Dinda
Affiliation: School of Health Sciences, Oakland University

#106
Title: Effectiveness of an Exercise Intervention for Gait Symptoms in Parkinson’s Disease
Author: Matthew Davis
Faculty sponsor: Nathaniel Miller
Affiliation: Psychology, University of Michigan-Flint

#114
Title: A Gene Expression Vector to Observe the Activity of the Hsp70 Promoter in Hyperglycemia
Author: Andrew Larke
Faculty sponsor: Frank Miskevich
Affiliation: Biology, University of Michigan-Flint

2325 Riverfront: Understanding the Universe

#62
Title: Dancing with the Stars: Calculating Stable Orbits in a Binary System
Authors: Ben Savoie, Matt Sutter, Patrick Ross
Faculty sponsor: James Alsup
Affiliation: Physics, University of Michigan-Flint

#72
Title: Einstein’s Greatest Theory
Author: Daniel Agar
Faculty sponsor: James Alsup
Affiliation: Physics, University of Michigan-Flint

#81 (ADDITION) 
Title: A translation of "La Politique du Rire"
Author: Ian Lancaster
Faculty sponsor: Dikka Berven
Affiliation: College of Arts and Sciences, Oakland University
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Poster Session B
10:30 am – 11:30 am

#8
Title: The Impact of Cosmetic Foundation use on Ratings of Physical Appearance and Trustworthiness in Males
Author: Rashonda Magee
Faculty sponsor: Marianne McGrath
Affiliation: Psychology, University of Michigan-Flint

#27
Title: Optimization of Fatty Acid Separation of Fish Oil Samples Using a Gas-Chromatography Mass-Spectrometer
Authors: Rachele Lubeckyj, Katelyn Keene
Faculty sponsor: Matthew Fhaner
Affiliation: Chemistry & Biochemistry, University of Michigan-Flint

#29
Title: Electrochemical Monitoring of Alpha, Delta, and Gamma Tocopherol Degradation in Commercial Fish Oil Samples
Author: Derek Linskey
Faculty sponsor: Matthew Fhaner
Affiliation: Chemistry/Biochemistry, University of Michigan-Flint

#50
Title: Improving Health Outcomes by Synthesizing Primary Care and Preventive Care
Author: Emma Watters
Faculty sponsor: Natalie Sampson
Affiliation: Health and Human Services, University of Michigan-Dearborn

#58
Title: The Tragic World of Child and Adolescent Sex Slavery in Michigan
Author: Emily Ouillette
Faculty sponsor: Lacea Zavala
Affiliation: Early Childhood Education Center, University of Michigan-Dearborn

#63
Title: Measurements of Radiation-Induced DNA Damage Products Employing LC-MS
Author: Cameron Hanson
Faculty sponsor: Michael Sevilla
Affiliation: Chemistry, University of Michigan-Dearborn

#69
Title: Thinking Upstream
Author: Heather Clement, Kelly Holda, Stephanie Gelen
Faculty sponsor: Maureen Tippen
Affiliation: Nursing, University of Michigan-Flint
#86
Title: Optimism & Satisfaction in Romantic Relationships
Author: Kayla McIntire
Faculty sponsor: Marianne McGrath
Affiliation: Psychology, University of Michigan-Flint

#87
Title: Belongingness and Subjective Well-Being Considering Conformity and Perceived Stigmatization
Author: Alicia Latimer
Faculty sponsor: Marianne McGrath
Affiliation: Psychology Department, University of Michigan-Flint

#93
Title: Improved Quality of Life for Parkinson’s Patients after Community-Based Bicycling Program
Author: Kadey Eggert
Faculty sponsor: Nathaniel Miller
Affiliation: Psychology, University of Michigan-Flint

#103
Title: Effect of a Community-Based Exercise Intervention on Fine Motor Dexterity in Parkinson’s Disease
Author: Holly Tipp
Faculty sponsor: Nathaniel Miller
Affiliation: Psychology, University of Michigan-Flint

#105
Title: Utilizing Software Models to Manage Cloud Infrastructures at Runtime
Author: Moesha Woods
Faculty sponsor: Mark Allison
Affiliation: Computer Science, University of Michigan-Flint

#112
Title: Effect of a Community-Based Exercise Intervention on Bradykinesia in Parkinson’s Disease
Author: Robert Moore
Faculty sponsor: Nathaniel Miller
Affiliation: Psychology, University of Michigan-Flint

#113
Title: Relationship Between Music Preference and Personality in a College Student Sample
Author: Lindsey Hieber
Faculty sponsor: Marianne McGrath
Affiliation: Psychology, University of Michigan-Flint
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Oral Session C
1:15 pm – 2:15 pm

2315 Riverfront: Media Portrayals of Women

#7
Title: Sexjectification: Media's Obsession with Exploiting Women
Author: Lucia Seprino
Faculty sponsor: Rebekah Farrugia
Affiliation: Communication, University of Michigan-Dearborn

#18
Title: A Content Analysis of Reproductive Justice on Scandal
Author: Linnea Torrice
Faculty sponsor: Joanne Reger
Affiliation: Women and Gender Studies, Oakland University

#19
Title: The Social Psychology of Gender
Author: Shelby Nardone
Faculty sponsor: Joanne Reger
Affiliation: Women and Gender Studies, Oakland University

#26
Title: Walking the Line Between Being Erotic or Innocent
Author: Jillian Hering
Faculty sponsor: Rebekah Farrugia
Affiliation: Communications and Journalism, Oakland University

2317 Riverfront: The State of Our Educational System

#2
Title: Reflection on Multi-Age Exploration
Authors: Marissa McCann, Shauna Phillips
Faculty sponsor: Christine Kenney
Affiliation: Early Childhood Education, University of Michigan-Flint

#3
Title: #Edcamp: For Teachers, By Teachers
Author: Marissa McCann
Faculty sponsor: Annie Whitlock
Affiliation: Education, University of Michigan-Flint

#21
Title: The Effects of Heteronormativity on Michigan’s Child Welfare Programs: An Analysis of Policy and Procedure
Author: Kelsey Cunningham
Faculty sponsor: Jo Reger
Affiliation: Women and Gender Studies, Oakland University
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#22
Title: School District Quality and Crime: A Cross-Sectional Statistical Analysis
Author: Chelsea Ringl
Faculty sponsor: Dennis Condron
Affiliation: Sociology, Anthropology, Social Work, and Criminal Justice, Oakland University

#2319 Riverfront: Promoting Social Justice Through Research
#17
Title: The Impact of LGBT Resource Centers on LGBT University Students
Author: Rebecca Starke
Faculty sponsor: Grace Wojcik
Affiliation: Gender and Sexuality Center, Oakland University

#31
Title: Family Ties to Sexualizing Eyes
Author: Gabriella Carlisi
Faculty sponsor: Rebekah Farrugia
Affiliation: Communication, Oakland University

#32
Title: The Effects of White Anti-Racist Instruction in the Classroom
Authors: Fanta Doumbia, Jia Ireland
Faculty sponsor: Kathleen Levinstein
Affiliation: Social Work, University of Michigan-Flint

#88
Title: Burning of the Declaration of Independence: Radical Social Work
Author: David Courter
Faculty sponsor: Otrude Moyo
Affiliation: Social Work, University of Michigan-Flint
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2321 Riverfront: Understanding and Predicting Behavior

#47
Title: The Buffering Capacity of Windows Against Negatively Valanced Stimuli
Author: Desiree Hanson
Faculty sponsor: Cynthia Sifonis
Affiliation: Psychology, Oakland University

#66
Title: The Interaction of the Behavioral Inhibition System, Sleep, and Emotion Regulation Difficulties as a predictor for Emotional Reactivity
Author: Daniel Lanni
Faculty sponsor: Scott Pickett
Affiliation: Psychology, Oakland University

#94
Title: Inside the Judicial Mind: Cognitive Bias and Heuristics
Author: Machhadie Assi
Faculty sponsor: Donald Shelton
Affiliation: Criminal Justice Studies, University of Michigan-Dearborn

#115
Title: Defining Greed
Author: Abdelmajid Jondy
Faculty sponsor: Roberto Rinaldi
Affiliation: Psychology, University of Michigan-Flint

2325 Riverfront: Literature from Across the Globe, Part I - CANCELLED
#6
Title: To Tea or Not To Tea
Author: Audrey Sharp
Faculty sponsor: Rebekah Farrugia
Affiliation: Communication Department, Oakland University

#13
Title: Emotion Regulation Difficulties as a Moderator of the Relationship between Perfectionism and Depression in College Students
Author: Jessica Drews
Faculty sponsor: Scott Pickett
Affiliation: Department of Psychology, Oakland University

#14
Title: A Car to Feed Your Desires
Author: Matthew Markley
Faculty sponsor: Rebekah Farrugia
Affiliation: Communication and Journalism, Oakland University

#38
Title: Electrochromic Properties of Butylated Phenols Induced by Electrochemical and Chemical Oxidation
Author: Nicole Zabik
Faculty sponsor: Sanela Martic
Affiliation: Chemistry Department, Oakland University

#43
Title: Impulse Control and Hostilities towards Women as Predictors for Perpetration of Relationship Violence in a Trauma Exposed Male Sample
Author: Daniel Gildner
Faculty sponsor: Scott Pickett
Affiliation: Department of Psychology, Oakland University

#77
Title: Detection of Iron-rich Protein Binding to Tau by Electrochemical Impedance Spectroscopy
Author: Anna Jahshan
Faculty sponsor: Sanela Martic
Affiliation: Department of Chemistry, Oakland University

#84
Title: Design and Development of Manual Transmission System
Author: Kenneth O’Brien, Yang Zhou
Faculty sponsor: Quamrul Mazumder
Affiliation: Mechanical Engineering, University of Michigan-Flint
#89
Title: Development of a Tugger Cart for Powder Coating Process
Author: Sandeep Solanki
Faculty sponsor: Quamrul Mazumder
Affiliation: CSEP, University of Michigan-Flint

#91
Title: Inspection Robot
Author: Skyler Shippy
Faculty sponsor: Quamrul Mazumder
Affiliation: Engineering, University of Michigan-Flint

#95
Title: Spewing Black Holes I: Observational Constraints on Velocity and Structure
Author: Adam Crutcher
Faculty sponsor: Rajib Ganguly
Affiliation: Computer Science, Engineering, and Physics, University of Michigan-Flint

#100
Title: CFD and Experimental Investigation of Erosion in S-Bend
Author: Kristen Rusinek
Faculty sponsor: Quamrul Mazumder
Affiliation: Computer Science, Engineering, and Physics, University of Michigan-Flint
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Oral Session D
2:30 pm – 3:30 pm

2315 Riverfront: Women’s Rights

#4
Title: Priceless Women
Author: Rodney Cobbins
Faculty sponsor: Patricia Emenyonu
Affiliation: Africana Studies, University of Michigan-Flint

#15
Title: Investigating Women’s Sexual Health in the Dewey Decimal System
Author: Mary Catherine Moeller
Faculty sponsor: Joanne Reger
Affiliation: Women and Gender Studies, Oakland University

#16
Title: Women's rights NGOs at the Universal Periodic Review
Author: Belacqua Behnke
Faculty sponsor: Jo Reger
Affiliation: Sociology/Women and Gender Studies, Oakland University

#24
Title: Gender Equity and Women in Law: Lean In or Lean On
Author: Megan Mull
Faculty sponsor: Suzanne Bergeron
Affiliation: Women and Gender Studies, University of Michigan-Dearborn

2317 Riverfront: Technological Advances

#12
Title: Belltex American Sign Language mobile app
Author: Linda Kachelski
Faculty sponsor: Marali Mani
Affiliation: Computer Science, Engineering and Physics, University of Michigan-Flint

#97
Title: Developing an innovative environment using Web 2.0 technologies
Author: HousamEldin Mohamed
Faculty sponsor: Charlotte Tang
Affiliation: Computer Science, Engineering and Physics, University of Michigan-Flint

#102
Title: Keyboard Playing Robot
Author: Shuyu Yang
Faculty sponsor: Ming Li
Affiliation: Computer Science, Engineering and Physics, University of Michigan-Flint
#119
Title: Drawing Robot Using Lego Mindstorms
Author: Zihao Yan
Faculty sponsor: Ming Li
Affiliation: Computer Science, Engineering and Physics, University of Michigan-Flint

## 2319 Riverfront: Examining the World Through Music and Art

#9
Title: A Lesson in "Mathematics" from Mos Def
Author: Jake Rapanotti
Faculty sponsor: Kellie Hay
Affiliation: Communications and Journalism, Oakland University

#10
Title: From a Peasant to a Prince to a King
Author: Taylor Dalton
Faculty sponsor: Kellie Hay
Affiliation: Communication, Oakland University

#28
Title: "Comic Book Representation of Atomic Power in Western Civilization, 1940's-Present"
Author: William Salamango
Faculty sponsor: Claude Baillargeon
Affiliation: Art and Art History, Oakland University

#64
Title: An Analysis of Concrete Musical Meaning
Author: Angelo Bruno
Faculty sponsor: Cynthia Sifonis
Affiliation: Psychology, Oakland University

## 2321: Literature From Across the Globe, Part II

#42
Title: The trip here and back: The role of women in immigration from Latin America towards Spain and the preservation of family cohesion through transnational practices
Author: Laura Sanchez
Faculty sponsor: Jorge Gonzalez del Pozo
Affiliation: Language, Culture, and Communication, University of Michigan-Dearborn

#48
Title: Biased Conceptions of the Self in Ben Jelloun's Partir
Author: Leah Sandner
Faculty sponsor: John Corso
Affiliation: Art and Art History, Oakland University

#54
Title: Political Symbolism in Latin American Romanticism
Author: Conner Susalla
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Faculty sponsor: Cecilia Saenz-Roby
Affiliation: Modern Languages and Literature, Oakland University

#71
Title: Translation into English of the French "Femmes Pirates - Les écumeuses des mers" by Marie-Eve Sténuit
Author: Jossette Bailey
Faculty sponsor: Jennifer Law-Sullivan
Affiliation: Modern Languages and Literature, Oakland University

2325 Riverfront: Hodge Podge: Chemistry and Engineering

#55
Title: Fluorinated Zinc Phthalocyanines as Imaging Probes: Balancing Fluorescence with Amphiphilicity
Author: Megan Kaster
Faculty sponsor: Evan Trivedi
Affiliation: Chemistry, Oakland University

#57
Title: Tensile Behavior of Carbon Fiber Reinforced Polymer
Author: Nicholas Parks
Faculty sponsor: Olanrewaju Aluko
Affiliation: Computer Science, Engineering and Physics, University of Michigan-Flint

#117
Title: The Response of Carbon Fiber Composite to Out of Plane Loading
Author: Nicholas Parks, Cody Cousins, Wesley Goodwin
Faculty sponsor: Olanrewaju Aluko
Affiliation: Computer Science, Engineering and Physics, University of Michigan-Flint
#5
Title: Spatial and temporal variation in enzymatic activities of St. Claire River and Lake Sediments via API ZYM
Author: Drashti Patel
Faculty sponsor: Sonia Tiquia-Arashiro
Affiliation: Department of Natural Science, University of Michigan-Dearborn

#37
Title: Agile Software Implementation of Academic Models for Enterprise Use
Author: Jalil Dennis
Faculty sponsor: Xiaohui (Kathy) Zhong
Affiliation: Mathematics, University of Detroit-Mercy

#67
Title: Emotion Regulation Difficulties as a Moderator of the Relationship between Behavioral Approach System Sensitivity and Alcohol Use
Author: Daniel Lanni
Faculty sponsor: Scott Pickett
Affiliation: Psychology, Oakland University

#82
Title: Overwintering Habits of Juvenile Blanding’s Turtles (Emydoidea blandingii) at Shiawassee National Wildlife Refuge, Saginaw, MI, USA
Author: Melissa Szymanski, Mallorey Smith, Sasha Davis, William Gibala
Faculty sponsor: Teresa Yoder-Nowak
Affiliation: Biology, University of Michigan-Flint

#83
Title: Thermoregulation in Juvenile Blanding’s Turtles (Emydoidea blandingii) at Shiawassee National Wildlife Refuge, Saginaw MI, USA.
Author: Melissa Szymanski, Mallorey Smith, Sasha Davis, William Gibala, Morgan Warda, Jessica Taylor, Krista Bergman-Hughes
Faculty sponsor: Teresa Yoder-Nowak
Affiliation: Biology, University of Michigan-Flint

#90
Title: The Western: Genre Semiology, Transcendence, and Transition
Author: Matthew Pickard
Faculty sponsor: Kyle Edwards
Affiliation: Cinema Studies, Oakland University

#116
Title: What Your Messy Personal Space May Say About You: Perceivers’ Office-Based Personality Judgments
Authors: Sarah Dyszlewski, Brandon Taylor
Faculty sponsor: Terrence Horgan
Affiliation: Psychology, University of Michigan-Flint
#118
Title: HPV Knowledge in a College Student Sample: The Effects of Gender and Vaccination Status
Author: Lindsey Hieber
Faculty sponsor: Thomas Wrobel
Affiliation: Psychology, University of Michigan-Flint

#121
Title: Facial Perception as a Risk Avoidance Technique
Author: Kayla Bennett
Faculty sponsor: William McKibbin
Affiliation: Psychology, University of Michigan-Flint

#122
Title: Political Conservatism and Affect
Author: Dustin Burns
Faculty sponsor: William McKibbin
Affiliation: Psychology, University of Michigan-Flint

#124
Title: "Schedule change really disrupts a lot of things!": Never-Ending Physician Scheduling in a Multi-Function Multi-Setting Practice
Author: Hannah Freedman
Faculty sponsor: Charlotte Tang
Affiliation: Computer Science, University of Michigan-Flint
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ABSTRACTS

#1
Title: Music Therapy: An intervention for psychiatric patients and their health care staff
Author: Emily Meihls
Faculty sponsor: Maureen Thum
Affiliation: Honors Program, University of Michigan-Flint

Abstract: Music therapy has been developing for several decades, and in recent years has been formally recognized as a highly accredited profession. This non-traditional therapy has been implemented in several forms to help a vast amount of patient populations through healing, post-operative recovery, dementias, and various other medical conditions. The struggling patient population of psychiatric disorders has undergone extensive research and countless treatment methods with little success. Several treatments are aimed at “curing” patients of their conditions, rather than treating and managing symptoms. Through the implementation of music therapy, the psychiatric patient community could see drastic improvements in patient symptoms and responsiveness from the non-traditional approach. Furthermore, the healthcare team involved in the direct care of these patients could benefit from this methodology. Psychiatric nurses experience the highest rates of nursing burnout across the wide-spread disciplines. By executing a non-traditional tactic into their workforce, a decreased rate of burnout could be achieved. With a decreased rate of burnout, a better patient care environment will be achieved to prompt proper healing and recovery for the psychiatric patient needs.

#2
Title: Reflection on Multi-Age Exploration
Authors: Marissa McCann, Shauna Phillips
Faculty sponsor: Christine Kenney
Affiliation: Early Childhood Education, University of Michigan-Flint

Abstract: Over the course of a year we took a journey to discover what happens when children ages 3-5 play together for an extended amount of time. We will discuss the advantages and challenges that resulted from a multi-age open exploration. Participants will leave with a better understanding of multi-age exploration, ideas for provocations for multi-age exploration, and strategies of how to implement these in the classroom.

#3
Title: #Edcamp: For Teachers, By Teachers
Author: Marissa McCann
Faculty sponsor: Annie Whitlock
Affiliation: Education, University of Michigan-Flint

Abstract: Our research project focused on a new model of teacher professional development called Edcamps. Edcamps are also known as "un-conferences" because of how different they are from traditional school professional development. During the study we focused on the following questions: 1) What attracts educators to Edcamps? And 2) What do participants of Edcamps learn and how will this learning impact their classroom practice or their work in a related field? We attended two Edcamps in Michigan. We interviewed eight conference participants about what they valued about the Edcamp-style professional development. The participants interviewed represented a range of educators from
many different grades, subjects areas, and positions varying from third to eighth grade teachers, including one instructional technology consultant. We coded the interview responses and common themes emerged about what these educators valued about Edcamps.

#4
Title: Priceless Women
Author: Rodney Cobbins
Faculty sponsor: Patricia Emenyonu
Affiliation: Africana Studies, University of Michigan-Flint

Abstract: Priceless Women is a avant-garde theatre performance aimed to combat domestic violence against all women. The spoken word expressive dance piece takes 3 minutes and 30 seconds. Priceless Women is part 5 of a one man stage play format. It is performed with or without a musical accompaniment. There is a visual aid introduced to the audience before the performance in efforts to help focus the attention on protecting women rights.

#5
Title: Spatial and temporal variation in enzymatic activities of St. Claire River and Lake Sediments via API ZYM
Author: Drashti Patel
Faculty sponsor: Sonia Tiquia-Arashiro
Affiliation: Department of Natural Science, University of Michigan-Dearborn

Abstract: Spatial and temporal variations in enzymatic activities of lake and river sediments were determined using API ZYM assay. API ZYM is a semi-quantitative micromethod designed to determine activities of 19 different enzymes. Three sites were selected on St Claire River (SC1, SC2, and SC3) and three sites on Lake St. Clair (LC1, LC2, LC3). A 1:10 sediment : water extract was prepared; and 30 l of the extract was dispensed in each of the 20 cupules. Each of the 19 cupules contained substrate for the 19 enzymes and and one cupule served as a control. Once incubated one drop of ZYM A and ZYM B were added to the cupules and results were collected after 10 mins. Results were analyzed with a variety of tests. T-test was used to compare activities between river and lake. There was no significant distinction between the river and the lake except for lipase and leucine aminopeptidase, of which St. Claire river sediments had more enzymatic activities. ANOVA test was used to compare lake and river site sediments for enzymatic activities. Leucine aminopeptidase and valine aminopeptidase activities were significantly among the three sites. SC3 had highest activities of leucine, valine aminopeptidase and β-glucuronidase. Leucine aminopeptidase activity was significantly different in each of the three lake sites and with the highest activity in LC3. The research results give an important insight on different contaminants lake and river water are being exposed to and how these contaminants influence the diversity of the microbial community.
#6 Title: To Tea or Not To Tea  
Author: Audrey Sharp  
Faculty sponsor: Rebekah Farrugia  
Affiliation: Communication Department, Oakland University

Abstract: In this essay, two advertisements for sweet tea products, namely Gold Peak and Crystal Light, are compared to display how advertisers use the human desire for wealth, health, and beauty to convince buyers to purchase their product. The Gold Peak ad appeals to the consumer who is focused on luxury and the ‘naturalness’ of a product, while the Crystal Light ad bids to health-conscious individuals, specifically targeting women focused on counting calories. However, both advertisements attempt to plead to the natural human desire for the ‘finer things in life’ deemed appealing by society. This essay digs into the psychology behind the reasons why advertisers use certain visual and verbal appeals to gain their audience’s attention.

#7 Title: Sexjectification: Media’s Obsession with Exploiting Women  
Author: Lucia Seprino  
Faculty sponsor: Rebekah Farrugia  
Affiliation: Communication, University of Michigan-Dearborn

Abstract: I will be presenting a paper that I wrote for my COM 287 Media and Social Identity class. It is a paper that talks about how my research and analysis of magazine ads concludes that women in the media are being over sexualized, over objectified, and how it is causing problems consciously and sub-consciously for the American public. I will be projecting the ads for the audience to see as I read my essay. It is a subject I am passionate about, as is my professor who recommended that I submit it to present at this conference.

#8 Title: The Impact of Cosmetic Foundation use on Ratings of Physical Appearance and Trustworthiness in Males  
Author: Rashonda Magee  
Faculty sponsor: Marianne McGrath  
Affiliation: Psychology, University of Michigan-Flint

Abstract: In this investigation cosmetic foundations and complexion will be examined in an attempt to discern a connection in evolutionary psychology and modern cosmetic foundation practices. Not that much research in this area has been published by psychologists and many of the articles that are published are paid for cosmetic companies. Consenting 32 male, 91 female, and 1 transgender participants will be used in this study and will be recruited from Facebook and The University of Michigan – Flint using email, Facebook posts, and Blackboard. Participants will be asked to fill out an online survey through Qualtrics rating individuals either wearing foundation or not. Upon viewing the photos participants will be asked to rate trustworthiness and attractiveness. A t-test data analysis will examine the correlation between trust, physical appearance and complexions. The prediction is that the participants will rate photos of males wearing foundation as more attractive and trustworthy, compared to the non-foundation condition. Implications of this study could help researchers with future studies on attraction and looks. This study could be applied to real life in situations of males wanting to know if a balanced complexion is found attractive and if it is associated with trust.
#9
Title: A Lesson in "Mathematics" from Mos Def
Author: Jake Rapanotti
Faculty sponsor: Kellie Hay
Affiliation: Communications and Journalism, Oakland University

Abstract: Mos Def, now Yasiin, is one of the few conscious rap artists who has achieved commercial success. He is not only recognized for his lyrical skills but also he openly addresses pressing social issues. In this paper the author examines for primary themes that course through Mos Def’s famous track, “Mathematics.” The themes are corporate and governmental corruption, surveillance, effects of drugs in poor, mostly black neighborhoods, and the prison industry complex. Although this song was released in 1999, all of the topics are relevant, if not more dire today. Providing musicological and textual analysis, the author demonstrates that Mos Def’s track. For listeners/fans, “Mathematics” may be read as a conscience raising song. For Mos Def, music is a way to forge change and save lives. He embodies exactly what Afrika Bambaataa intended the fifth element of hip hop to be: knowledge of self and community. This analysis demonstrates how it is that Mos Def’s music requires skill to even listen to his message.

#10
Title: From a Peasant to a Prince to a King
Author: Taylor Dalton
Faculty sponsor: Kellie Hay
Affiliation: Communication, Oakland University

Abstract: In this paper the author examines the current literature on masculinity and hip hop, addressing both dominant and alternative forms that masculinity take in culture. This literature is then applied to Kendrick Lamar; a new maverick in the hip hop world who pushes the boundaries of what masculinity ought to be. In the songs “u” and “These Walls” Kendrick kicks open the door that currently keeps men from addressing the vulnerabilities as stake for men who experience and openly talk about depression, mental illness, and hopelessness. In the track entitled, “These Walls”, Lamar turns his attention to the perspective of his lover, a women who feels loss even during intimacy. The analysis of these two songs reveals complex gender reflection and negotiation that is missing from most contemporary rap music.

#11
Title: The Infinitude Beyond Resignation
Author: Ryan Hayes
Faculty sponsor: Kathleen Wider
Affiliation: Literature, Philosophy, and the Arts, University of Michigan-Dearborn

Abstract: This essay argues that (I) Soren Kierkegaard’s argument as presented in Fear and Trembling that despair is caused by a loss of self and then solved by making the move to resignation and then further to faith fails by going a step too far, and further states that (II) this despair, rightly observed, can actually be solved by committing fully to the finite and the innate human condition therein. Hayes, Ryan (2016) “The Finitude Beyond Resignation”.
#12
Title: Belltex American Sign Language mobile app
Author: Linda Kachelski
Faculty sponsor: Marali Mani
Affiliation: Computer Science, Engineering and Physics, University of Michigan-Flint

Abstract: The Belltex American Sign Language mobile app serves many purposes. The primary purpose for the app is a 24/7 life alert for deaf and hard of hearing consumers, secondly the app serves as a global communication network for native ASL users. Furthermore, government leaders are in the phase of rebuilding our nation’s infrastructure, which is significant due to an under served community. The device is feasible, desirable, and efficient. The Belltex mobile app offers live and simultaneous translation services, and can be modified for non-emergency communication contacts as well.

#13
Title: Emotion Regulation Difficulties as a Moderator of the Relationship between Perfectionism and Depression in College Students
Author: Jessica Drews
Faculty sponsor: Scott Pickett
Affiliation: Department of Psychology, Oakland University

Abstract: The present study aimed to better define the effect of emotion regulation on the relationship between perfectionism (standards) and depression. It was hypothesized that perfectionism predicts depression, and high emotion regulation difficulties would strengthen the relationship. 330 students from the Oakland University Psychology subject pool participated in a variety of questionnaires including those assessing perfectionism, emotion regulation, and depression. Results indicated a significant two-way interaction where those with high difficulties in emotion regulation experienced no difference in symptoms of depression across perfectionism but those with low difficulties in emotion regulation reported higher symptoms of depression for low perfectionism (standards) compared to high. The hypotheses were not supported, but research was extended as the study identifies emotion regulation as a moderator in the relationship between perfectionism and depression, such that improvements in emotion regulation may buffer against perfectionism standards.

#14
Title: A Car to Feed Your Desires
Author: Matthew Markley
Faculty sponsor: Rebekah Farrugia
Affiliation: Communication and Journalism, Oakland University

Abstract: The social world is a reflection of advertising. We are constantly guided into what we should own, wear, and perhaps act like. This has become a problem, as each day goes by, consumers make less informed decisions about purchasing and rather let advertisers make all the decisions for them. Advertisers play a crucial role in guiding consumers into false rewards in exchange for commodity goods. In order to understand the effects of social rewards, using media theory, I have conducted a textual analysis of a Maserati and Hyundai luxury sedan print advertisements. While both portray the value of luxury they contain differences in their social meanings, social values, and psychographics when appealing to potential buyers. The social rewards vary as Maserati represents the idea of obtaining status and wealth while Hyundai attributes its campaign to being recognized as a “smarter” consumer. By looking closer into advertisements, we as consumers can better understand the hidden agendas of
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advertisements. Only then can we begin to make informed decisions in regards to purchasing and the reasons behind it.

#15
Title: Investigating Women’s Sexual Health in the Dewey Decimal System  
Author: Mary Catherine Moeller  
Faculty sponsor: Jo Reger  
Affiliation: Women and Gender Studies, Oakland University

Abstract: The field of Library Science lacks feminist research that deconstructs the classification system upon which the field is founded. The Dewey Decimal System is a prominent structure in libraries around the world. These knowledge systems marginalize women and in turn act to systematically justify oppression. The existing research that critically analyzes this system focuses on its marginalization of LGBTQIA identities. This study identifies marginalization in the Dewey Decimal System by exploring classifications of topics relevant to women’s health. By exploring the knowledge classes, divisions and subdivisions under which knowledge surrounding marginalized identities are categorized we can determine how knowledge structures are affected by oppressive structures in library classification.

#16
Title: Women’s rights NGOs at the Universal Periodic Review  
Author: Belacqua Behnke  
Faculty sponsors: Jo Reger, Laura Landolt  
Affiliation: Sociology/Women and Gender Studies, Oakland University

Abstract: Abstract: The Universal Periodic Review (UPR) of the UN Human Rights Council represents a unique opportunity for domestic and international non-governmental organizations (NGOs) to participate in intergovernmental organizations (IGOs). However, NGO behavior in IGOs is often ignored due to International Relations theoretical emphasis on state behavior, or is viewed separately from struggles with states. By contrast, this paper uses content analysis of NGO statements at the UPR to identify women’s rights NGO statements that are critical of and sympathetic to states, and to compare this pattern to that of all other human rights NGOs. Differences and similarities between women’s rights and other human rights NGOs may reveal interesting answers to questions about state feminism, questions about relationships between domestic and international women’s rights NGOs, and insider and outsider coalitions.

#17
Title: The Impact of LGBT Resource Centers on LGBT University Students  
Author: Rebecca Starke  
Faculty sponsors: Grace Wojcik, Jo Reger  
Affiliation: Gender and Sexuality Center, Oakland University

Abstract: This project explores the impact of Lesbian, Gay, Bisexual, Transgender (LGBT) resource centers on LGBT university students. Through this study, I explore how these centers affect the recruitment, peer support, and personal safety of LGBT university students. In interviews with 15 current students of Oakland University (OU) who identify as LGBT, I asked the participants questions about their experiences with the LGBT resource center at OU. This research provides a basis upon which to improve LGBT resource centers and increase their numbers at more universities across the country.
# # #

# 18
Title: A Content Analysis of Reproductive Justice on Scandal
Author: Linnea Torrice
Faculty sponsor: Jo Reger
Affiliation: Women and Gender Studies, Oakland University

Abstract: In this research, I examined how issues of reproductive justice are portrayed on the television show Scandal. Looking at issues of reproductive justice is important because reproductive freedoms such as abortion access, among others, are increasingly threatened by lawmakers and economic circumstances. Scandal a culturally significant show because of its popularity and its ability to generate discussion on social media. I conducted a content analysis of every even-numbered episode in the show’s fourth season, which originally aired from 2014 to 2015, looking for instances of conversations or references to a number of reproductive justice issues.

# 19
Title: The Social Psychology of Gender
Author: Shelby Nardone
Faculty sponsor: Jo Reger
Affiliation: Women and Gender Studies, Oakland University

Abstract: This project is a syllabus for “The Social Psychology of Gender” course that effectively blends both the study of psychology as well as women and gender studies. This syllabus is structured from a sociocultural perspective with a feminist framework for understanding gender. In the project, I explain the reasoning for these choices, lay out an argument for why evolutionary psychology is problematic to teaching the psychology of gender and detail the process for designing this syllabus. I used several syllabi from multiple universities coupled with the findings in the literature to construct the syllabus for the course.

# 20
Title: Marxism and the Baha'i Faith: A Comparison of Political and Theological Theory
Author: Joshua Koss
Faculty sponsor: Alan Epstein
Affiliation: Political Science, Oakland University

Abstract: From two very different regions of the world, in two distinct fields of theory, Karl Marx and Bahá’u’lláh created similar and compatible political and theological philosophies. Karl Marx’s theoretical system of communism has been controversial in the west due to its association with the Soviet Union; however, his core principals of equality and democratic participation tend to be better received on their own merits. Marx himself was an atheist because he believed religion was a force of alienation, separating mankind from each other and from its highest capabilities by attributing them to a deity. Had Marx been acquainted with the Baha’i faith he may have seen greater potential for religion to bring unity. While most religious scripture feature discussion of the equality of mankind and advocacy of altruism, Baha’ism takes a unique approach and practices these tenants as much as it preaches them. Baha’ism believes in the unity of God, religion, and humanity and as such it deems all forms of religion and sciences as legitimate means of seeking universal truth, joining where other religions would alienate. In popular practice, adherents of the Baha’i faith form strong support structures within their communities that Marx would have admired.
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#21
Title: The Effects of Heteronormativity on Michigan’s Child Welfare Programs: An Analysis of Policy and Procedure
Author: Kelsey Cunningham
Faculty sponsor: Jo Reger
Affiliation: Women and Gender Studies, Oakland University

Abstract: Child welfare systems in America, including Child Protective Services (CPS) and foster care, have succeeded in providing protection and resources to youth in vulnerable situations, but were created using a heteronormative framework. While child welfare has benefited American youth in many ways, the policies and practices taking place are unintentionally harming youth of LGBTQ identities. This literature reviews current research on LGBTQ youth within American child welfare systems, analyzes the existing policies and practices of Michigan’s child welfare systems, and offers improvements to the institution. This capstone addresses the issues surrounding equal treatment of LGBTQ youth under state policy.

#22
Title: School District Quality and Crime: A Cross-Sectional Statistical Analysis
Author: Chelsea Ringl
Faculty sponsor: Dennis Condron
Affiliation: Sociology, Anthropology, Social Work, and Criminal Justice, Oakland University

Abstract: This thesis explores the effects that school district quality has on crime rates in corresponding law enforcement zones in Michigan. I also analyze the additional factors of high school graduation rates, poverty, racial disadvantage, and population density, drawing on data compiled from the Michigan Department of Education, American Community Survey, US Census, and the Uniform Crime Reports. The aim is to determine how these factors together affect criminal activity. Many studies have been conducted to research how these variables influence crime independently, but few have examined their collective effect. Additionally, focusing on the quality of a school district, as opposed to the quantity of education in the population offers a new method for analyzing how education impacts crime. This perspective benefits law enforcement, school administration, and scholars in these fields by emphasizing the role that quality education plays in shaping the life course of students. The results of this analysis show that school district quality affects violent and property crime rates both directly, and through mechanisms involving the mediating variables of high school graduation and poverty rates. Based on these results, new crime prevention strategies can be explored to address the relationship between these key variables and crime rates.

#23
Title: Cost-Effectiveness of Interventions to Prevent/Manage Hospital Acquired MRSA Infections: A Systematic Literature Review
Author: Ashley Edwards
Faculty sponsor: Gergana Kodjebacheva
Affiliation: Public Health & Health Sciences (PHHS), University of Michigan-Flint

Abstract: Hospital acquired infections (HAI) are costly yet preventable. According to the Centers for Disease Control and Prevention (CDC), the overall annual direct medical costs of HAI to U.S. hospitals range from $28.4 to $33.8 billion and $35.7 billion to $45 billion. This study aims to identify cost-effective health management interventions to address the continuing problem of hospital acquired
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MRSA infections. An updated systematic literature review will assess the cost-effective health management interventions to prevent hospital-acquired MRSA infections by following Preferred Reporting Items for Systematic Review (PRISMA) guidelines. Prior interventions and their cost will be assessed to determine what strategies or combination of strategies have been found to be cost-effective. Hospital administrators are key players in the success of initiatives aimed at reducing hospital-acquired infections. Hospital administrators can use this study when implementing cost-effective evidence based interventions that reduce hospital acquired MRSA infections.

#24
Title: Gender Equity and Women in Law: Lean In or Lean On
Author: Megan Mull
Faculty sponsor: Suzanne Bergeron
Affiliation: Women and Gender Studies, University of Michigan-Dearborn

Abstract: This paper analyzes the issue of gender equity in the field of law, examining the institutional as well as individual solutions that have been posed to address entrenched discrimination in the field. It integrates the personal experience of the author with scholarly research on the topic to provide a rich account of the inequalities that women face in the legal profession. Drawing upon the work of bell hooks as well as other transformative feminist thinkers, the paper critiques the neo-liberal “lean in” approach associated with Sheryl Sandberg and others. It goes on to examine a range of firm-level policy initiatives aimed at advancing women in the law, showing that while they have made some small improvements to women’s success in the profession, they have left the masculinist institutional structure of legal work untouched. The paper concludes with a call for a more systematic, “lean on” coalition-building approach to change the structures that reinforce gender inequities in the law.

#25
Title: False Memory of Religious Events in a Community Sample
Author: Ellen Searle
Faculty sponsor: Jennifer Vonk
Affiliation: Psychology, Oakland University

Abstract: In an extension of a previous research study (Searle, Vonk, & Brothers, in preparation), 498 participants were recruited using Mechanical Turk. Participants were shown images representing one true and one false event each that depicted religion or atheism in a positive and negative light for a total of eight images. We hypothesized that participants would remember the false events consistent with their attitudes for or against religion. That is, they might be likely to falsely remember events that portrayed religious events positively and atheist events negatively. Their own attitudes toward the events were also considered. Non-religious individuals, in contrast, might be more likely to falsely recall events that portrayed religion negatively and atheism positively. Results show that religious individuals, more so than non-religious individuals, were influenced by their positive or negative regard for events, showing the tendency to falsely recall events that they felt positively toward. Limitations include low recollection for all events, and a limited sample of religious affiliations. Future research will investigate memory for better-known events and will focus on the actor in the scenarios rather than the event as a whole, in order to better standardize the positive and negative valence of the event depicted.
#26
Title: Walking the Line Between Being Erotic or Innocent
Author: Jillian Hering
Faculty sponsor: Rebekah Farrugia
Affiliation: Communications and Journalism, Oakland University

Abstract: In today’s media, advertisements express ideas of popular culture that have been ingrained in society for decades, affecting women particularly. Advertisers push ideals through the way they advertise products to woman, highlighting gender norms, femininity, and racial norms. In the paper that follows, I analyze how women in today’s advertisements express the dominant ideals of gender norms including femininity as well as racial norms to set the tone for how women should perceive themselves in popular culture and why this is an epidemic in society.

#27
Title: Optimization of Fatty Acid Separation of Fish Oil Samples Using a Gas-Chromatography Mass-Spectrometer
Authors: Rachele Lubeckyj, Katelyn Keene
Faculty sponsor: Matthew Fhaner
Affiliation: Chemistry and Biochemistry, University of Michigan-Flint

Abstract: Polyunsaturated fatty acids (PUFAs) found in marine oil, such as eicosapentaenoic acid (EPA) and docosahexaenoic acid (DHA), are associated with a number of health benefits (Ruxton 2004, Lund 2013). PUFAs are readily degraded in the presence of heat, light and trace metal concentrations. To ensure the integrity of marine oils it is necessary to add antioxidants which protect the PUFAs from degradation. In order to determine the efficiency of a protective additive we must be able to investigate how the relative amounts of PUFAs change with degradation. This requires separation and targeted identification, which is accomplished using a combination of gas chromatography and mass spectrometry (GC/MS). We outline experimental modifications aimed at improving the separation of marine fatty acids while keeping experimental run time low in an effort to optimize our methodology for future exploratory studies.

#28
Title: "Comic Book Representation of Atomic Power in Western Civilization, 1940's-Present"
Author: William Salamango
Faculty sponsor: Claude Baillargeon
Affiliation: Art and Art History, Oakland University

Abstract: The project "Comic Book Representation of Atomic Power in Western Civilization, 1940's-Present" looks to examine the treatment of the nuclear subject and how it is presented over the course of American comic book history. Ever since their inception, comic books have an incredible storytelling ability that has been able to reach far across our culture (i.e., movies, television, marketing, etc.) while establishing an evolving symbiotic relationship between the creators, history, and the audience. Using key pieces of reference, this project will look at how the idea of atomic power has influenced not only the creative teams behind the comics themselves, but also how they influence American history and culture. Another aspect of the presentation will be focused on how the content of comic books has developed (e.g., guidelines enforced by the Comics Code Authority) as well as their storytelling approaches (e.g., the fantastic nature and the historic nature). Comic books have always been a mirror into the various aspects of society with the portrayal ranging from wish fulfillment to artistic
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representation of historical events. The findings of this project highlight a cyclical nature how American
comic books depict atomic power from the fantastic to the realistic.

#29
Title: Electrochemical Monitoring of Alpha, Delta, and Gamma Tocopherol Degradation in Commercial
Fish Oil Samples
Author: Derek Linskey
Faculty sponsor: Matthew Fhaner
Affiliation: Chemistry and Biochemistry, University of Michigan-Flint

Abstract: Tocopherol, better known as vitamin E, is used commercially as an antioxidant to protect
certain oils and fatty acids. Antioxidants effectively prolong the lifespan of important polyunsaturated
fatty acids like eicosapentaenoic acid (EPA) and docosahexaenoic acid (DHA) by protecting them from
oxidation and scavenging free radicals. When exposed to heat, the levels of alpha, delta, and gamma
tocopherol decrease as they undergo oxidation to protect the structural integrity of the lipid solution in
which they reside. In order to determine the effectiveness of alpha, delta, and gamma tocopherol’s
antioxidant capabilities, we need a way to investigate their degradation patterns over time. Our
experiment utilizes electrochemical instrumentation to directly monitor the antioxidant capacity of
tocopherols within a simple time study instead of indirect methods which are currently used. By
monitoring the change in our analyte signal (Current, Amps) we can determine how much of each
tocopherol isomer remains after exposure to heat, thus determining the efficiency of the antioxidant.

#30
Title: Gender differences in the incidence of cancer by type among children and adolescents in Michigan
from 1999 to 2011
Author: Jeremy Blankenship
Faculty sponsor: Gergana Kodjebacheva
Affiliation: Public Health and Health Sciences, University of Michigan-Flint

Abstract: Background. It is known that there are gender differences which effect the incidence rates of
cancers. There is limited research, which investigates gender differences of leading childhood cancer
types in Michigan. Procedure. The Center for Disease Control and Prevention (CDC) WONDER database
contains cancer incidence and mortality data. We compared the WONDER age-adjusted incidence rates
of the leading cancer types by gender among children and adolescents, aged 0 to 19 years, in Michigan
and the United States. Results. For the period 1999 to 2011, Michigan females had higher incidence
rates than U.S. females for six cancer types: II lymphoma and reticuloendothelial neoplasms (22.2 per
100,000 in MI versus 20.8 per 100,000 in the U.S.), II(a) Hodgkin’s Lymphoma (12.6 per 100,000 versus
11.7 per 100,000), III CNS and miscellaneous intracranial and intraspinal neoplasms (29.5 per 100,000
versus 29.2 per 100,000), IV sympathetic nervous system tumors (11.6 per 100,000 versus 8.1 per
100,000), IX soft-tissue sarcomas (11.6 per 100,000 versus 11.2 per 100,000), XI carcinomas and other
malignant neoplasms (27.2 per 100,000 versus 23.5 per 100,000). Michigan males had higher incidence
rates than U.S. males for seven cancer types: II lymphoma and reticuloendothelial neoplasms (32.4 per
100,000 versus 29.4 per 100,000), II(a) Hodgkin’s Lymphoma (13.9 per 100,000 versus 12.8 per 100,000),
III CNS and miscellaneous intracranial and intraspinal neoplasms (33.1 per 100,000 versus 32.6 per
100,000), IV sympathetic nervous system tumors (10.2 per 100,000 versus 8.7 per 1,000,000), IX soft-
tissue sarcomas (13.8 per 100,000 versus 12.8 per 100,000), X Germ-cell, trophoblastic and other
gonadal neoplasms (13.4 per 100,000 versus 13.3 per 100,000) XI carcinomas and other malignant
neoplasms (13.4 per 100,000 versus 11.6 per 100,000). Conclusions. Childhood cancer incidence rates
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for males and females tended to be worse in Michigan than in the United States. Incidence of top childhood cancers tends to be higher for males than females in Michigan and the United States. We propose research on the reasons for and the interventions to explain the causes of the gender difference for the leading childhood cancers.

#31
Title: Family Ties to Sexualizing Eyes
Author: Gabriella Carlisi
Faculty sponsor: Rebekah Farrugia
Affiliation: Communication, Oakland University

Abstract: For my presentation, I will compare two camera ads whose content are completely different from one another. One ad is for the Polaroid Color Pack Camera from the 1960s, which displays a family using this camera while celebrating a holiday. The other ad is for the Nikon Coolpix 3100 digital camera from the 2000s, which displays a two images of the same woman. One image was taken with the Nikon Coolpix 2100 where the woman has noticeably smaller breasts and lacks self confidence, while the other image was taken with the Nikon Coolpix 3100 where the woman has larger breasts and is more confident. I will use these ads to demonstrate that the content of advertising has become less about family values and more about expressing sexuality and social value in consumer culture.

#32
Title: The Effects of White Anti-Racist Instruction in the Classroom
Authors: Fanta Doumbia, Jia Ireland
Faculty sponsor: Kathleen Levinstein
Affiliation: Social Work, University of Michigan-Flint

Abstract: Social Work students have become increasingly conservative in the US, so that their values are now indistinguishable from business students. Social Work students in the Flint, Michigan area however appear to have value systems that are more conservative than business students, perhaps due to the influence of the religious right and the Klan in this geographical area. In addition, as this is an economically deprived area, with Social Work being one of the few occupations with available jobs, students are entering the major in order to obtain employment only, minus Social Work values. This has resulted in a crisis of competing world views. The authors, a white anti-racist Assistant Professor of Social Work, a Black Sociology/Women and Gender Studies Graduate student, and a Black-Muslim junior Social Work student, attempt to look at the effects of white anti-racist instruction in the classroom to determine if it has an impact specifically on shoring up the self-esteem of Black students and impacting the level of racism of white students. Quantitative methods are utilized as well as a qualitative narrative approach in order to capture the nuances of the classroom experiences. Students, both Black and white described the class as being one of the most profound experiences of their lives.

#34
Title: Outgroup Effects in Phylogenetic Tree Construction
Author: Marcell Brikho
Faculty sponsor: Fabia Battistuzzi
Affiliation: Biological Sciences, Oakland University

Abstract: Phylogenetic trees are diagrams that show the evolutionary relationships among species based upon genetic or physical characteristics. In the medical field, phylogenetic trees of viruses,
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plasmids, and bacteria are used to further our knowledge about the evolution of pathogenic species. Phylogenetic reconstructions of the history of species and their genes through time is currently achieved with a variety of tree-building methods. Unfortunately, artifacts are known to occur during phylogenetic reconstructions limiting the power of the overall conclusions we can infer based on evolutionary histories. One source of uncertainty is the effect of outgroups in the accuracy of phylogenetic trees and how relationships among species change based on the quality and size of the outgroup being used. To investigate this issue, our research focuses on the changes seen when constructing phylogenetic trees using the earliest forms of life: Bacteria and Archaea. Bioinformatics tools are used to construct phylogenetic trees of Bacteria using different Archaea as outgroups to determine whether these species affect the position of the hyperthermophilic Bacteria in phylogenetic trees. Using this system, we can infer general trends in the effects of outgroups on phylogenetic accuracy that can be extended to other, more recent, phylogenetic histories.

#35

Title: Leukemia induced endothelial cell activation enhances leukemia cell growth identifying this process as a major contributor to overall leukemia progression

Author: Michael Maywood

Faculty sponsor: Gerard Madlambayan

Affiliation: Biological Sciences, Oakland University

Abstract: Chemotherapy is often utilized to manage acute myeloid leukemia (AML); however, many of the cases eventually relapse. Thus, the mechanisms governing AML growth and relapse need to be further explored to better develop effective therapies. Previously, we demonstrated a novel mechanism whereby AML-induced endothelial cell (EC) activation leads to subsequent leukemia cell adherence, quiescence and chemoresistance, identifying these cells as potential mediators of relapse. We are now showing that EC activation also induces the secretion of key leukemogenic factors that further cause greater expansion of the non-adherent AML cells. These findings support our previous findings and identify EC activation as a mechanism that both protects adherent AML cells while simultaneously enhancing the growth of non-adherent AML cells through the secretion of various cytokines. This shows that EC activation directly influences the high relapse and low survival rates present in patients suffering from AML and therapies that target these mechanisms may provide a strategy for better care.

#36

Title: Incorporating industrial entomophagy via a study of food selection

Author: Emily Dixon

Faculty sponsor: Cindy Sifonis Fay Hansen

Affiliation: Psychology, Oakland University

Abstract: A literature review of the effects of industrially produced meat along with determinants of food selection were studied and integrated into a four tiered model of natural resources, human biology, culture, and psychology. This research is to determine whether or not entomophagy could be a viable alternative to eating industrially produced meat. The research is a comprehensive literature analysis conducted primarily within disciplines of biology and psychology. Focuses in biology include the effects of industrially produced meat on the environment and human health, a survey of the nutrition content of insects versus traditional Western meat proteins (beef, chicken, and pork), human nutritional needs, and the perception of taste via olfactory and gustatory senses. Psychology will focus on preferences of taste and the influence of personal circumstances such as convenience, price, and morals. The research was collected from Oakland University’s library database, along with books
available in the catalog. I will determine ways in which entomophagy is a viable alternative to mitigating the issues associated with industrially produced meats, and where within the realm of food selection are areas susceptible to the integration of entomophagy. With these findings, entomophagy could be integrated into food selection with a targeted approach.

#37
Title: Agile Software Implementation of Academic Models for Enterprise Use
Author: Jalil Dennis
Faculty sponsor: Xiaohui (Kathy) Zhong
Affiliation: Mathematics, University of Detroit-Mercy

Abstract: The projection of operating and maintenance (O&M) cost is an important component of the planning and operating stage of any Light Rail Transit (LR) system according to the Federal Transit Administration (FTA). For this reason, a set of cost models were developed based on historical data of existing LR cost data from the National Transit Database (NTD). However, the models are complex mathematical formulas which are not convenient for practical use. This research focuses on creating applications based on those models so that they can be used easily by engineers in the field for design and planning purposes. Discussion focuses on the software implementation process using the agile method of Software Engineering. This discussion is centered on the effectiveness of this approach in regard to creating intuitive and high functioning products based on models cost effectively given that requirements are minimally defined and constantly changing.

#38
Title: Electrochromic Properties of Butylated Phenols Induced by Electrochemical and Chemical Oxidation
Author: Nicole Zabik
Faculty sponsor: Sanela Martic
Affiliation: Chemistry, Oakland University

Abstract: Free radical formation in fuels, which initializes peroxidation and autoxidation, is inhibited and sequestered by antioxidant additives. Within the last ten years, butylated hydroxytoluene (BHT) has been identified as a primary fuel additive and used as a parent compound to foster new antioxidants [1]. However, structure and oxidation-reduction potential of these additives, as well as their performance impact, are pertinent factors to consider when designing new antioxidants. Five commercially available compounds including BHT, 4-tert-butylphenol (4TBP), 2-tert-butylphenol (2TBP), 2,4,6-tri-tert-butylphenol (TTBP), and 2,6-di-tert-butylphenol (DTBP) were electrochemically evaluated to determine concentration dependence of their oxidation/reduction potentials. All five compounds exhibited similar oxidation and reduction potentials; however, not all displayed electrochromic behavior (solution color change). The electrochromic property was further investigated by UV-Vis, LC-MS, NMR, and X-ray diffraction crystallography. The chemical oxidation and chromism generated were also explored. These results will be described. References / 1. Yehye, W.A.; Rahman, N.A.; Ariffin, A.; Abd Hamid, S.B.; Alhadi, A.A.; Kadir, F.A.; Yaeghoobi, M. Understanding the Chemistry Behind Antioxidant Activities of BHT: A Review. Euro. J. Med. Chem. 2015, 101, 295-312.
#39
Title: “The Hiroshima Peace Memorial Ceremony”
Author: Heather Coppinger
Faculty sponsor: Claude Baillargeon
Affiliation: Art and Art History, Oakland University

Abstract: "The Hiroshima Peace Memorial Ceremony" is the children's book I wrote and illustrated as a research project for my art history class, "Visual Representations and the Nuclear Experience." The class covered historic and sometimes horrific visuals including many resulting from the atomic bombs dropped in Japan at the end of WWII. Such shocking and gruesome visuals present an obstacle when considering how to approach the content to children in the classroom. Although the information is difficult to teach, it is a crucial part of our history and relevant in today’s world, nonetheless, the majority of events covered in my course on are normally not addressed in public education. The purpose of my picture book is to provide an example of how this difficult and controversial period of our history can be introduced to young children in a sensitive, compassionate and meaningful way. In the book, I used the relationship between two young friends to give an overview of the history of the atomic bombs detonated in Japan, the nuclear aftermath, and the cultural importance of the Hiroshima Peace Memorial Ceremony. The book encourages children to use history as a tool for dealing with problems between different cultures.

#40
Title: Do the Sources of Social Support Affect Posttraumatic Growth?
Author: Shelby Seyburn, Aundreah Walenski
Faculty sponsor: Kanako Taku
Affiliation: Psychology, Oakland University

Abstract: Posttraumatic growth (PTG; Tedeschi & Calhoun1996), the perceived positive changes experienced as a result of the struggle with stressful experiences, coheres in five domains: “Personal Strength”, “Appreciation of Life”, “New Possibilities”, “Relating to Others”, and “Spiritual Change.” Positive associations have been found between social support and PTG in adolescents (Tedeschi & Calhoun, 2004); however, results varied based on the source of social support received, such as family, friends, and a special person (Meyerson, 2011). The purpose of this study is to investigate the relationships and differences between the sources of social support and the PTG domains. Adolescents (N=431) completed the Multidimensional Scale of Perceived Social Support (α=.89) and Posttraumatic Growth Inventory Short Form (PTGI-SF; α=.89). Multiple regression analyses showed the different patterns among the sources of social support on the PTG domains. Support from special person significantly predicted growth in Appreciation of Life and in Relating to Others. Support from friends significantly predicted growth in New Possibilities. Results show the importance of receiving social support from a special person and friends to experience growth following stress at least with this sample.
#41
Title: Hannah Höch: A Female Voice of the Berlin Dada Group
Author: Maren Obermanns
Faculty sponsor: Claude Baillargeon
Affiliation: Art and Art History, Oakland University

Abstract: Representing a unique female voice of the Berlin Dada group are the photomontages of the German artist Hannah Höch. This paper discusses Höch's dynamic and allegorical photomontages in relation to the Berlin Dada group, the New Woman in German society, and the politics of the German Weimar Republic (Makholm 19; Owens Shaefer 36). Cut With the Kitchen Knife Dada through the Last Weimar Beer-Belly Cultural Epoch of Germany represents philosophies of the Berlin Dada group (Boswell and Makela 25). The New Woman is showcased in Cut With the Kitchen Knife Dada through the Last Weimar Beer-Belly Cultural Epoch of Germany, and White Form. Heads of State relates to politics of the Weimar Republic (Boswell and Makela 28). Within the historical context of the Berlin Dada movement, Hannah Höch created art from 1918-1922 that has social and political undertones (Boswell and Makela 7). Höch's reaction to the introduction of the New Woman in German society and the politics that emerged after the end of WWI in the Weimar Republic conveys the importance of a woman’s voice in the art world and all of society (Boswell and Makela 7).

#42
Title: The trip here and back: The role of women in immigration from Latin America towards Spain and the preservation of family cohesion through transnational practices
Author: Laura Sanchez
Faculty sponsor: Jorge Gonzalez del Pozo
Affiliation: Language, Culture, and Communication, University of Michigan-Dearborn

Abstract: This paper seeks to explore the patterns and dynamics that arose alongside Latin American woman-led immigration to Spain in the period from 1996-2006. Using a transnational feminist perspective, this paper analyzes how ties are created in order to cope with the reorganization of families to maintain family cohesion and traditions. These connections may be created through economic, political, and social liaisons between migrant family members that moved to Spain and their remaining family that still resides in the country of origin. Moreover, it discusses recent phenomena, such as the Spanish economic crisis and the tightening of certain migratory policies involving family reunification, and their negative effects on Latin American families. Despite these changing policies and environments in immigrant-receiving Spain, this paper discusses how transatlantic practices have been able to facilitate the preservation of family bonds between immigrants and their separated families.

#43
Title: Impulse Control and Hostilities towards Women as Predictors for Perpetration of Relationship Violence in a Trauma Exposed Male Sample
Author: Daniel Gildner
Faculty sponsor: Scott Pickett
Affiliation: Psychology, Oakland University

Abstract: Previous research shows that trauma exposure is related to impulse control difficulties (Tull et al., 2007) and impulse control difficulties are associated with relationship aggression (Derefinko et al., 2011). Given that hostility towards women (HTW) has been identified as a risk factor for relationship aggression following trauma exposure (Vivolo-Kantor et al., 2013), it was examined as a moderator in
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the current study between emotion regulation (as impulse control difficulties; ICD) and relationship violence. Participants were 231 trauma-exposed undergraduate men. Participants were screened about traumatic experiences and completed questionnaires regarding ICD, HTW, and relationship violence. Results of this analysis showed that both impulse control difficulties and hostility towards women were related to the participants’ likelihood of perpetrating relationship violence, $R^2 = .105$, $F(1, 225) = 3.909$, $p = .049$. Further, hostility towards women moderated the relationship between impulse control difficulties and perpetration of relationship violence. Our results suggest that, among men who experience trauma, those who report high HTW and high ICD perpetrate relationship violence at a higher rate than those who report low HTW and low ICD.

#44
Title: Multitasking among Medical Students: The Combination of Environment and Personality
Author: Tudor Moldovan
Faculty sponsor: Jason Wasserman
Affiliation: Biomedical Sciences, Oakland University

Abstract: The proliferation of technology has made multitasking highly prevalent among students and previous research shows clearly that it has detrimental effects on academic performance. However, nearly all of this research has focused on undergraduate students. Medical students face particularly difficult curricular demands which may predispose them to multitasking behaviors. It is particularly important to study the impact of multitasking among medical students, since their learning may affect the lives of others. This study was conducted at Oakland University William Beaumont School of Medicine and utilized a survey which assessed multitasking behaviors among medical students. The results suggest that multitasking behavior emerges from a combination of educational setting and personal disposition. More active and engaging learning environments such as lab sessions suppress multitasking behaviors while private environments such as homework allow students to use technology freely. Interestingly, however, a notable subgroup of students engaged in multitasking at a high level regardless of the learning environment; arguably, these students are individually disposed toward multitasking. This study underscores the need for medical educators to combine particular classroom strategies with training and policies directly aimed at those for whom multitasking is independent of learning environment.

#45
Title: Building A Large Phylogeny of Archaea
Author: Anthony Coleman
Faculty sponsor: Fabia Battistuzzi
Affiliation: Biological Sciences, Oakland University

Abstract: Evolutionary histories are a powerful tool to reconstruct not only the early stages of life but also to understand the characteristics of Earth as a habitable planet. Of the three domains of life Archaea are among the most ancient ones holding information regarding the earliest steps of life’s evolution. Unfortunately, building stable archaeal phylogenies has proven to be an elusive task especially for poorly represented groups (e.g., Nanoarchaeota). This phylogenetic instability has often been attributed to taxon sampling or fast evolutionary rates among genes but little is know about the relative contribution of each of these conditions. We address this issue by using all of the available taxonomic samples to investigate the effect of evolutionary rates on a multi-gene dataset containing 135 species. Fifty individual trees were produced from fully represented orthologous group but did not result in a consensus phylogeny. We therefore proceeded to evaluate the effect of gene-specific
evolutionary rates by creating subsets with slow and fast evolving concatenated genes. A comparison of these two phylogenies show a discrepancy in the location of the Thaumarchaeota, Nanoarchaeota and Korarchaeota suggesting an effect of evolutionary rates on their uncertain phylogenetic position. These unstable groups also negatively affect the overall accuracy of the trees in closely related clusters and also others that have traditionally been found to be phylogenetically stable. This analysis provides insights into the effect of evolutionary rates on deep phylogenies and suggest guidelines for future tree reconstructions.

#46
Title: 19th-Century Marriage: Space for Fulfillment or Intellectual Prison?
Author: Kelsey Margetic
Faculty sponsor: Cecilia Saenz Roby
Affiliation: Modern Languages and Literature, Oakland University

Abstract: Juan Díaz Covarrubias’ "La clase media" (1858) and Gertrudis Gómez de Avellaneda’s "Sab" (1841) provide distinct visions of 19th-century marriage. Through literary analysis, this essay will demonstrate those distinct visions and consider the influence of author gender. While Díaz Covarrubias’ work envisions 19th-century marriage as a woman’s space for fulfillment, Gómez de Avellaneda’s work envisions it as an intellectual prison. In "La clase media", Amparo chooses to spend her life in a convent as a form of self-punishment. She was raped in her youth and has fallen from her society’s conception of purity, so she doesn’t deem herself worthy of marrying Ramón. In her case, marriage is the ideal, a space for her fulfillment as a virtuous woman. Alternatively, "Sab" depicts marriage as a form of incarceration. Carlota’s oppression in marriage is juxtaposed with Teresa’s freedom for study and growth in the convent. This emphasizes the vision of marriage as an intellectually restrictive space for women. While both men and women were socialized to view marriage as the woman’s space for fulfillment, women exclusively suffered the oppression of 19th-century marriage. Both the distinct views of marriage and the implications of author gender will be explored in greater detail.

#47
Title: The Buffering Capacity of Windows Against Negatively Valanced Stimuli
Author: Desiree Hanson
Faculty sponsor: Cynthia Sifonis
Affiliation: Psychology, Oakland University

Abstract: The idea has been put forth that types of music can activate associated schemas (Sifonis & Fuss, 2012) and that music can produce certain emotional responses (Koelsch, 2015). A factor known to mitigate negative emotions are window-facing seats (Yildirim, Akalin-Baskaya, & Celebi, 2007). The current study examines the buffering influence of nature exposure via window proximity on emotional priming by negatively valence music and testing anxiety. Eighty-nine undergraduate students were instructed to write a haiku either before or after listening to war music. If window-facing seats primed certain constructs associated with nature, nature items should appear in the participant’s haiku. Results indicated that students overwhelmingly preferred sitting at window-facing seats. Interpretation of the data shows that, regardless of window proximity, participants who heard war music before their haiku included fewer nature items in their haiku. This would seem to indicate windows failed to buffer war music priming. Additionally, there was no difference in rated pleasantness of the music between window and non-window groups. Future investigation should control for windows by isolating the variable in separate groups. Additionally, baseline participant emotional state should be assessed prior
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to introducing emotionally negative inducing factors in which window proximity’s buffer capacity will be evaluated.

#48
Title: Biased Conceptions of the Self in Ben Jelloun’s Partir
Author: Leah Sandner
Faculty sponsor: John Corso
Affiliation: Art and Art History, Oakland University

Abstract: For centuries, the dominant narrative voice in literature came from writers who purported that white/Western male subjectivity had more value than those of women and people of color. Thus, the experience of white/Western man has become a universal truth. Today, however, writers and theorists the world over repudiate this archetype, publishing their own subjectivities. Tahar Ben Jelloun’s varied narratives in Partir give a voice to the Arab Self, including the Arab woman. This research paper illustrates that the “Jellounian” interpretation of the Self is imbued with masculine values, as his male and female characters essentially assume the roles of the I and the Other, respectively. In an effort to define the feminine/Arab Self, we will refer principally to feminist theories by Julia Kristeva and Luce Irigaray, among others, and then examine interpretations of Islamic sexuality by Abdelwahab Bouhdiba, who also offers a Quranic look at women. In short, although he moves away from the Western male narrative, Ben Jelloun does not succeed in providing a feminine/Arab Self that is impartial to masculine values.

#49
Title: Defining Authenticity in a Post-Colonial World: Art of the Northwest Coast
Author: Kelsey Robuck
Faculty sponsors: Susan Wood and Galina Tirnanic
Affiliation: Art and Art History, Oakland University

Abstract: The First Nations have lived on the Northwest coast for ten thousand years, having minimal contact from outside until the beginning of the 18th century during the Age of Discovery. Once the colonial powers established permanent settlements along the coast, assimilation into white society for the First Nations seemed imminent. In order for these cultures to survive, the First Nations adapted to the needs of the colonial powers and began making souvenirs to create a self-sufficient economy while preserving cultural identity. Tourism was as important then as it is today for the Haida, Tlingit and the Tsimshian nations in Ketchikan, Alaska. While working as a tour guide in Ketchikan, tourists shopping for souvenirs would often ask me, “Is this authentic?” In my essay, I analyze the subjective definitions of authentic art throughout history and try to find the authenticity in the art of the Northwest Coast. By analyzing the First Nations’ art from first contact to today, many attributes have changed, but the integrity of the “Northwest Coast style” style survived. I argue that authenticity for the First Nations is realized through the survival of this style.
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#50
Title: Improving Health Outcomes by Synthesizing Primary Care and Preventive Care
Author: Emma Watters
Faculty sponsor: Natalie Sampson
Affiliation: Department of Health and Human Services, University of Michigan-Dearborn

Abstract: Although excess morbidity and premature mortality are exacerbated by limited healthcare access, social determinants, such as access to education, transportation, and nutritious food, are largely the root of health disparities in Detroit communities. With this understanding, Joy-Southfield Community Development Corporation (JSCDC), located in Detroit’s Cody-Rouge neighborhood, has taken a population health approach to preventing and managing illness in order to reduce healthcare costs, improve outcomes, and ameliorate disparities. For instance, JSCDC’s partnership with Covenant Community Care (CCC), a Federally Qualified Health Center in Cody-Rouge, has provided an ideal constituency for preventive care; CCC refers patients to the various health promotion programs offered by JSCDC, such as HEAL (Healthy Eating Activity and Learning) workshops. Further, JSCDC is developing place-based interventions that align with these health promotion programs. The synthesis of primary care with evidence-based preventive care and place-based interventions has created a more comprehensive and effective method to improving health outcomes in the Cody-Rouge community—by not just treating illness but by also eliciting long-term health behavior changes. The presentation will detail the observed and expected health behavior changes educed from interventions like HEAL workshops, the curricula employed, and the interplay between preventive and primary care that ultimately improves health.

#51
Title: First One Thing and then the Other
Author: Grace Weick
Faculty sponsor: Bailey McDaniel
Affiliation: English, Oakland University

Abstract: My paper, “First One Thing and Then The Other,” explores of the notion of shame as a cultural construct, and perhaps more importantly, reveals instances of and the contexts facilitating shame’s absence, in Jeffrey Eugenides’ best-selling and Pulitzer Prize winning novel Middlesex (2002). A true bildungsroman, Eugenides’ text examines the complexities of sexual identity, ethnic assimilation, and the incest taboo by, among other things, (1) exploring a consensual incestuous relationship between two Greek refugees and their eventual immigration to Detroit, and (2) the taboo union’s grandchild, the novel’s Detroit-born, intersex protagonist, Cal (née Calliope). The novel’s complicated, sometimes ambiguous comment on topics such as the fluid nature of gender and sexual identity, immigrant assimilation, and the incest taboo allows for an exploration of shame informed by the critical lenses of Gender Studies, Psychology, Queer Studies, Philosophy, History, and Religious Studies. In other words, as the product of first-generation immigrants whose romantic union is also one of siblings, the intersexed Cal/Calliope’s journey as he discovers himself as herself is interwoven with important moments in twentieth-century American history, immigrant narratives of assimilation, and the shame engendered by family secrets, allowing for an important exploration of shame and its absence as a cultural construct.
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#52
Title: Perceptions in Modern Dating
Author: Courtney Murphy
Faculty sponsor: Nicholas Iannarino
Affiliation: Language, Culture, and Communication, University of Michigan-Dearborn

Abstract: Young adults use mobile dating applications to enhance their self-esteem, be perceived in a positive light, and connect with others on a physical and romantic level. Through computer-mediated communication, people portray themselves both accurately and inaccurately—intentionally or unintentionally—to receive recognition and acceptance. Unfortunately, individuals may judge others’ identities in mobile dating applications based on their own unique perceptions, which can also be inaccurate. This study of 20 young adult heterosexual Tinder application users aims to identify whether participants are perceived by their potential romantic interests in the ways they hope. Face-to-face semi-structured interviews allowed me to gain insight into young adults’ beliefs and intentions surrounding Tinder, how their identities were portrayed in their personal profile, and their views and opinions of other users’ identities. Major findings include Tinder users’ experience of stigma; their intentions in using the application; and their attempts to understand others’ purposes for being on Tinder along with trying to make their own intentions clear. One unexpected finding is that although women disclose less in their profiles, men showed more accurate perceptions. The findings of this study will help mobile dating application users to be more successful in attracting their target audience.

#53
Title: Wrongdoers and Instigators: Relationships Between Perceived Stress and Posttraumatic Growth in High School Students
Author: Lauren Harrison
Faculty sponsor: Kanaku Taku
Affiliation: Psychology, Oakland University

Abstract: Posttraumatic growth (PTG) is defined as the positive changes that result from a struggle with trauma (Tedeschi & Calhoun, 1996). Individuals who experience a highly stressful event demonstrate more growth than those who experience a lower severity event or no trauma at all (Taku, Kilmer, Tedeschi, & Calhoun, 2012). The purpose of this study is to examine the relationships between PTG and perceived stress in a sample of high school students who reported being an instigator or a wrongdoer. It is hypothesized that wrongdoers will report a stronger relationship between perceived stress and PTG than instigators. High school students (N=78) completed the Posttraumatic Growth Inventory (PTGI) and reported perceived stress at the time of the event. The mean perceived stress was 6.17 (SD= 3.69) for instigators and 7.65 (SD=2.28) for wrongdoers. The mean PTGI score for instigators was 18.5 (SD=10.98) and 19.81 (SD=2.28) for wrongdoers. Pearson’s correlations revealed a significant relationship between perceived stress and PTG in wrongdoers, r(62)=.355, p<.01, but not instigators, r(10)=.081, p<.01. These results support our hypothesis that wrongdoers will report a stronger relationship between perceived stress and PTG than instigators. This may be because wrongdoers have a more involved position than instigators.
Title: Wrongdoers and Instigators: Relationships Between Perceived Stress and Posttraumatic Growth in High School Students  
Authors: Geena Osowski, Shelby Seyburn, Aundreah Walenski  
Faculty sponsor: Kanaku Taku  
Affiliation: Psychology, Oakland University

Abstract: Posttraumatic growth (PTG) is defined as the positive changes that result from a struggle with trauma (Tedeschi & Calhoun, 1996). Individuals who experience a highly stressful event demonstrate more growth than those who experience a low severity event or no trauma at all (Taku, Kilmer, Tedeschi, & Calhoun, 2012). The purpose of this study is to examine the relationships between PTG and perceived stress in a sample of high school students who reported being an instigator or a wrongdoer. It is hypothesized that wrongdoers will report a stronger relationship between perceived stress and PTG than instigators. High school students (N=78) completed the Posttraumatic Growth Inventory (PTGI) and reported perceived stress at the time of the event. The mean perceived stress was 6.17 (SD=3.69) for instigators and 7.65 (SD=2.28) for wrongdoers. The mean PTGI score for instigators was 18.5 (SD=10.98) and 19.81 (SD=2.28) for wrongdoers. Pearson’s correlations revealed a significant relationship between perceived stress and PTG in wrongdoers, r(62)=.355, p<.01, but not instigators, r(10)=.081, p<.01. These results support our hypothesis that wrongdoers will report a stronger relationship between perceived stress and PTG than instigators. This may be because wrongdoers have a more involved position than instigators.

Title: Political Symbolism in Latin American Romanticism  
Author: Conner Susalla  
Faculty sponsor: Cecilia Saenz-Roby  
Affiliation: Modern Languages and Literature, Oakland University

Abstract: This research looks at the writings of nineteenth century Latin American authors Juan Díaz Covarrubias and Gertrudis Gómez de Avellaneda. It compares Gómez de Avellaneda’s Sab with Díaz Covarrubias’s La Clase Media. The goal of this essay is to contextualize the two compositions and explore the politics promoted within. This research asserts that a political reading of Sab and La Clase Media will yield what each author believes to be their ideal country. Both were writing during very turbulent periods in their nations’ histories. As such, the futures of Díaz Covarrubias’s native Mexico and Gómez de Avellaneda’s native Cuba were uncertain. Each author uses their novel as an opportunity to, through allegory, provide their own models for the futures of their respective countries. This article will dissect those models, especially in regards to their beliefs on race, sex, and foreign relations. Sab and La Clase Media are formed by the historical context in which they were written, and are part of a search for national identity common in romantic era literature.

Title: Fluorinated Zinc Phthalocyanines as Imaging Probes: Balancing Fluorescence with Amphiphilicity  
Author: Megan Kaster  
Faculty sponsor: Evan Trivedi  
Affiliation: Chemistry, Oakland University

Abstract: The crucial components in successful treatment of cancer are early detection and accurate diagnosis, relying heavily on the diagnostic method used. Diagnostic processes using near-infrared (NIR)
fluorescence can be used to identify superficial tumors, while deep tumors can be detected using MRI. Combining these two processes provides a significant advantage over individual methods in accurately diagnosing superficial and deep tumors. Phthalocyanines (Pcs) are a type of tetrapyrrrole macrocycle that exhibit strong fluorescence, have a flexible synthetic method allowing for the addition of fluorine atoms, and tend to accumulate in tumors. Therefore, pcs are of interest as dual-mode imaging probes for fluorescence and 19F MRI. Four pc molecules (AB3 and B4 types) will be made utilizing their fluorescent and MRI capabilities, each possessing differing degrees of amphiphilicity. The amphiphilicity of pcs is tuned using hydrophobic “B” groups and hydrophilic “A” group, along with Zn2+ incorporated into the core to increase hydrophilicity. Related to a pc’s amphiphilicity is its tendency to aggregate, form soluble clusters, preventing its use in biological applications. Studying aggregation by fluorescence spectroscopy provides insight into identifying a molecule that exhibits the best combination of photophysical properties and solubility for advancement to imaging studies in tumor cells in vitro.

#56
Title: The Wrath of Divinity: Nagasaki’s A-Bomb and the Urakami Cathedral
Author: Alexis Parchell
Faculty sponsor: Claude Baillargeon
Affiliation: Art and Art History, Oakland University

Abstract: In 1945, three days after the first atomic bomb was dropped at Hiroshima by United States forces; a second bomb, “Fat Man,” was detonated over the city of Nagasaki. In the path of the bomb’s destruction was a Catholic cathedral and centuries-old Christian community. The Urakami Cathedral sat near the hypocenter of the atomic bomb in the city, leaving it almost completely destroyed in what was often thought of as an act of God’s wrath on the Christians of Nagasaki. Because of the history of Japan’s Christian community and their struggles, the atomic bombing of Nagasaki and its destruction were largely seen as a divine act of wrath. Photographs of the remains of the cathedral’s contents create an imagery that furthers this feeling of divine wrath, a foreboding story of how the atomic bombing of Nagasaki brought the end times for the city’s Christians.

#57
Title: Tensile Behavior of Carbon Fiber Reinforced Polymer
Author: Nicholas Parks
Faculty sponsor: Olanrewaju Aluko
Affiliation: Computer Science, Engineering and Physics, University of Michigan-Flint

Abstract: As the desire for a strong lightweight material increases for applications, such as aerospace and racing, attention is turned to composite materials, especially carbon fiber. The objective of this study is to see how the composite material’s strength increases with each layer of carbon fiber added. Using the manufacturing process of vacuum bagging and a polyester resin, sheets of carbon fiber were laid ranging from one to five layers. The sheets were then cut and shaped into tensile bars and pulled on a tensile tester. The results of the experiments has shown a significant increase in strength from each additional layer.
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### #58
**Title:** The Tragic World of Child and Adolescent Sex Slavery in Michigan  
**Author:** Emily Ouillette  
**Faculty sponsor:** Lacea Zavala  
**Affiliation:** Early Childhood Education, University of Michigan-Dearborn

**Abstract:** Human trafficking is an industry previously thought of as a third world issue, not something the United States needs to worry about on our home soil. Recently there has been an increase in awareness of the public to the issue. This presentation will examine the world of human sex trafficking in Michigan. I plan to address the ways in which individuals are at risk for being victims of human trafficking and the ways in which they are brought into the world of sex work. I will discuss the physiological as well as the psychological impacts on the victims of human trafficking as well as treatment and rehabilitation opportunities for the trafficked victims. In this presentation I will also discuss the different facilities where victims are able to take refuge. I will examine the way awareness has brought on changes in training for personal who come into contact with trafficking victims, as well as further goals in education. I have conducted interviews with a survivor of human trafficking, a police officer, and the Vice President of treatment programs at Vista Maria.

### #59
**Title:** “The good, the bad, and the ugly” The different sides of Antonio in Shakespeare’s Merchant of Venice  
**Author:** Avery Mitevski  
**Faculty sponsor:** Maureen Thum  
**Affiliation:** English/Honors Program, University of Michigan-Flint

**Abstract:** Throughout the history of Shakespeare’s Merchant of Venice, the character Antonio has been seen by directors as an ideal Christian man; never as being cruel, or bigoted – as Christians during the time were also never painted in a bad light. However in Director Antonin Cimolino’s interpretation, Antonio is not just the loving Christian he was always portrayed to be, nor is he just the awful anti-Semitic that some are realizing he may be. In the 2013 Stratford performance of Shakespeare’s the Merchant of Venice, Cimolino presents Antonio to us as both a victim and a victimizer, as an aggressor and a Christ figure, and provides a new perspective on the character.

### #60
**Title:** Impact of Domestic Violence  
**Author:** Alexis Luczak  
**Faculty sponsor:** Lacea Zavala  
**Affiliation:** Education, University of Michigan-Dearborn

**Abstract:** Domestic Violence impacts millions of people each year. It not only effects the person in the relationship but it effects the children in the home. The purpose of this research project was to examine the impact of domestic violence focusing on childhood exposure outcomes. Domestic violence is a significant risk factor that causes childhood trauma. Trauma affects people in different ways that can be internalized or externalized. Overcoming the effects of trauma is different depending on the individual circumstances and severity. The research material gathered in this project includes eight peer reviewed articles that discuss various exposure outcomes and interventions. The material presented also includes a personal interview with a survivor of domestic violence that I conducted. The intent of this project was
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to review existing data on childhood exposure to domestic violence with hopes to later conduct a study regarding the generational factors that domestic violence poses on families.

#61
Title: The Effects of Stress Inducer Yohimbibe and GABA-B Agonist Baclofen on Ethanol Self Administration in Rats
Author: Katerina Cvetanovski
Faculty sponsor: Keith Williams
Affiliation: Psychology, Oakland University

Abstract: In order to reduce the effects of alcoholism, studies use animal models to elaborate on possible treatments. The GABA-B metabotropc receptor agonist baclofen decreases alcohol consumption and may be most effective for individuals with comorbid anxiety/stress disorders. The purpose of this study was determine if the stress-inducer yohimbine would increase ethanol self-administration and determine if baclofen could block the effects of yohimbine. The experiment started with 48 Wistar rats (24 male, 24 female). The subjects were trained to press a lever for an ethanol-saccharin solution. The goal was to fade out the saccharin so that rats were drinking high levels of ethanol alone. Combinations of yohimbine and/or baclofen were injected prior to some sessions. The results indicate the rats attained only moderate levels of intake with ethanol alone (baseline was approximately 0.5 g/kg/session). Alcohol consumption was greatest in the presence of yohimbine alone. Baclofen 1 mg/kg was not effective. Baclofen 3 mg/kg was too strong and essentially reduced all responding. Yohimbine-baclofen injections indicated that 1 mg/kg baclofen decreased the effect of yohimbine, and future studies should replicate this experiment using a method to ensure high levels of ethanol intake.

#62
Title: Dancing with the Stars: Calculating Stable Orbits in a Binary System
Authors: Ben Savoie, Matt Sutter, Patrick Ross
Faculty sponsor: James Alsup
Affiliation: Physics, University of Michigan-Flint

Abstract: General Relativity, one of the pillars of modern physics, is a revolutionary field providing scientists a way to re-imagine the universe. General Relativity states that spatial coordinates and time are dependent on one another, a concept known as space-time. Unlike Newtonian physics, General Relativity gives insight into how gravity affects not only other objects, but space-time itself. According to General Relativity, gravity can bend space-time and cause noticeable distortions near massive objects. This idea requires physicists to revisit classical problems with new tools and techniques. In this presentation, we will explore how the bending of space-time can affect possible solutions to the three-body problem by examining stable orbits in a binary star system.

#63
Title: Measurements of Radiation-Induced DNA Damage Products Employing LC-MS
Author: Cameron Hanson
Faculty sponsors: Michael Sevilla and David Becker
Affiliation: Chemistry, University of Michigan-Dearborn

Abstract: Radiation-induced damage to DNA is known to be the important mechanism of action in radiotherapy of cancer. Damage to DNA also causes aging, mutation, cell death and neoplastic
transformation. Employing liquid chromatography-mass spectrometry (LC-MS), and high performance liquid chromatography (HPLC), we report stable diamagnetic products formed by gamma and ion-beam irradiations. Results found for ion-beam irradiated samples are compared to those for gamma-irradiated samples to delineate those radiation chemical reactions that are unique to the ion-beam track. Initial HPLC results from the 16O8+ ion-beam irradiated hydrated DNA samples show an product, not present in gamma-irradiated samples, which was further analyzed by MS. This product showed several distinct peaks, namely 102.12 m/z, 317.24 m/z, 227.17 m/z, and 453.21 m/z (the latter being the most abundant). As this sample contained both masses at approximately 227 m/z and 453 m/z, this product is clearly related to 2’-deoxycytidine (mass of 227.2 amu) and its homodimer (mass of 454.43 m/z). This data was then compared to LC-MS standards of 2’-deoxycytidine and a synthesized homodimer. These mechanistic studies elucidate the potential effects of radiation in space, a major limit to human space travel, and bear important relevance on the radiation chemical basis for ion-beam radiotherapy of cancer.

#64
Title: An Analysis of Concrete Musical Meaning
Author: Angelo Bruno
Faculty sponsor: Cynthia Sifonis
Affiliation: Psychology, Oakland University

Abstract: Musical concrete meaning creates melodic analogies for expressing various concepts. Major/minor keys, tempo, rhythm and timbre are some of the elements used in melodies to express specific concepts. Exposure to musical stimuli occurs constantly throughout the lifespan. As expert listeners, we actively denote meaning from melodic figures based off of previous knowledge structures. The acquisition of understanding musical meaning is an implicit process. There is evidence to support that embodied (emotional meaning) is easily detectable. Concrete meaning (specific concepts) however, involves a greater level of processing and interpretation. Concrete and embodied meanings are co-dependent on culturally based structural rules in music theory. It is unclear if concept creation occurs within the same processes in eastern culture using western style, music, or vice versa. Consequently, research needs to examine the components that convey concrete meaning to the listener. This talk will propose some mechanisms for conveying musical meaning and empirically investigating the efficacy of these mechanisms. Key Words: Concrete Meaning, Embodied Meaning, and Melodic Structure.

#65
Title: Effects of bisphenol A (BPA) on the expression of human progesterone receptor (PR) in T-47D breast cancer cells.
Author: Brigitte Dwyer
Faculty sponsor: Sumi Dinda
Affiliation: School of Health Sciences, Oakland University

Abstract: Bisphenol A (BPA) is a polymerizing agent commonly used in polycarbonate plastics such as food and drink containers, as well as some dental instruments. After entering the body, this compound acts as an endocrine disruptor, altering the normal function of the endocrine system and its hormones. In the case of breast tissue, estrogen function can be mimicked by BPA. Recent studies suggest that BPA may have cancerous effects as an endocrine disruptor on normal breast tissue. Hormone dependent breast cancers rely on the presence of progesterone (PR) and estrogen (ER) receptors. Estrogen and Progesterone bind to their respective receptors and cause the breast tumor to grow. We have used T-47D breast cancer cells for these studies which is positive for ER and PR. In this study, the effect of BPA,
alone and in combination with hormones and anti-hormones, was examined on cellular proliferation and expression of PR in T-47D breast cancer cells. Cells were cultured, treated with ligands, and subjected to quantitative analysis and Western blot analysis. BPA caused differential effects on PR protein expression and cellular proliferation of T-47D cells with treatment. These results may aid in understanding the relationship between BPA and PR in breast cancer cells.

#66
Title: The Interaction of the Behavioral Inhibition System, Sleep, and Emotion Regulation Difficulties as a predictor for Emotional Reactivity
Author: Daniel Lanni
Faculty sponsor: Scott Pickett
Affiliation: Psychology, Oakland University

Abstract: Emotional reactivity (ER) (an individual’s emotional response to a stimuli (Tellegen, 1985)) is found to play a developmental role in psychopathology (Zvolensky & Eifert, 2000). Research has shown that the behavioral inhibition system (BIS) and sleep are predictive of ER (Leen-Felder et al., 2004; Frazen et al., 2009). The current study connects these lines of research with the addition of emotion regulation (Gratz & Roeemer, 2004). 123 participants completed measures of BIS (BIS/BAS Scales; Carver & White, 1994), emotion regulation difficulties (DERS; Gratz & Roeemer, 2004) and sleep (PSQI; Buysse et al., 1989). Additionally, subjects performed a modified ER task (Els van der Helm et al., 2011), rating 100 pictures on their valence. Results indicated a three-way interaction between the BIS, DERS, and sleep deficits (F=3.084, p < .007). The simple slopes test for high DERS and low sleep dysfunction revealed a significant association between BIS and ER (b=.144, t=2.783, p = .007). Additionally, a significant association was found between BIS and ER at low DERS and high sleep dysfunction (b=.102, t=2.385, p = .20). Results suggests that emotion regulation abilities and sleep can act as either a buffer or a catalyst in regards to the degree of ER experienced.

#67
Title: Emotion Regulation Difficulties as a Moderator of the Relationship between Behavioral Approach System Sensitivity and Alcohol Use
Author: Daniel Lanni
Faculty sponsor: Scott Pickett
Affiliation: Psychology, Oakland University

Abstract: Introduction: The fun-seeking (desire to pursue rewarding experiences, (Caver & White, 1994)) subscale of the behavioral approach system (BAS) is positively related to alcohol use (O’connor, Stewart, & Watt, 2009). BAS predicts emotion regulation difficulties (Tull et al., 2010), which are associated with alcohol consumption (Berking, Margraf, Wupperman, Hofmann, Junghann, 2011). The present study aims to connect these separate lines of research. Methods: 347 adults completed measures of fun seeking (BIS/BAS Scales; Carver & White, 1994), emotion regulation difficulties (DERS; Gratz & Roeemer, 2004), and alcohol consumption (Clark and Midanik, 1982), which was calculated by quantity x frequency of alcohol use. Results: Using multiple regression analyses, results indicated that difficulties in emotion regulation moderated the relationship between fun seeking and alcohol use (β=.144, t=2.144, p=.033). Further analyses revealed that limited access to emotion regulation strategies (β=.149, t=2.240, p=.026) and lack of emotional clarity (β=.175, t=2.710, p=.007) DERS subscales acted as significant moderators. All interactions suggested that high emotion regulation difficulties and high fun seeking predict increased alcohol use. Discussion: This study supports previous findings on the
relationship between BAS fun-seeking and alcohol use. The current study identifies emotion-based components that may influence this relationship and guide future prevention efforts.

#68
Title: Differential Reinforcement and Play Skills
Authors: Jessica Genaw, Kelly Ray, Cristen Cicola
Faculty sponsors: Jessica Korneder, Mary Lewis
Affiliation: Human Development and Child Studies, Oakland University

Abstract: Children with autism often lack appropriate play skills and can benefit from having a variety of reinforcers. Research suggests that stimulus-stimulus pairing can be used to condition new choices among those diagnosed with autism (Nuzzolo-Gomez, Leonard, Ortiz, Rivera & Greer, 2002). Therefore, the purpose of this study is to increase appropriate play skills by broadening play reinforcers in children diagnosed with Autism. It is hypothesized that pairing a highly preferred food item with a low preferred play toy during appropriate playtime will increase the value of the low preferred toy. The study will consist of an across subject multiple baseline design and will consist of four phases: baseline, teaching condition, pairing procedure condition and test condition. Two Multiple Stimulus without Replacement Preference Assessments (MSWO) will be conducted to determine baseline and assess change in preference.

#69
Title: Thinking Upstream
Authors: Heather Clement, Kelly Holda, Stephanie Gelen
Faculty sponsor: Maureen Tippen
Affiliation: Nursing, University of Michigan-Flint

Abstract: The project took place in the Dominican Republic as part of a service-learning course for the nursing program at the University of Michigan-Flint. The disparities reflected in this area include tainted Water Supplies that are available to the people of the Dominican Republic. During this course, throughout several villages in the country, it was seen firsthand the effects of unhealthy water. There are wide variety of illnesses that can be prevented if water can be provided to the population in these areas. It is impossible to treat the people in this area for waterborne illnesses if the water supply is forever unhealthy. Illnesses that arise include parasites and amoebas that repetitively occur even with treatment due to the water supply. There is a large part of the population that survive with less than adequate water conditions. It is becoming more of a health disparity in third world countries.

#70
Title: An Examination of "Leaving" in Tahar Ben Jelloun's Leaving Tangier
Author: Mandy Olejnik
Faculty sponsor: Walter Temple
Affiliation: Modern Languages and Literature, Oakland University

Abstract: Written in 2006 in the wake of shifting and evolving tensions in the North African world, Partir (English: Leaving Tangier) by Tahar Ben Jelloun adds another layer of meaning to the sense of leaving and of immigration in Morocco. The city of Tangier in particular is strife with opposing political and cultural difficulties due to its close proximity to Spain, and as this paper will describe, the idea of “leaving” expressed throughout the story is unique to specific circumstances and evokes greater implications. Indeed, the ambiguity of this title (Leaving Tangier, and especially the more general Partir
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This paper will demonstrate how the meaning of the word “leaving” (“partir”) throughout the text can be applied to diverse contexts in this book and how the desire to leave in this story is an example of escalating unrest in Moroccan society.

#71
Title: Translation into English of the French "Femmes Pirates - Les écumeuses des mers" by Marie-Eve Sténuit
Author: Jossette Bailey
Faculty sponsor: Jennifer Law-Sullivan
Affiliation: Modern Languages and Literature, Oakland University

Abstract: This project is a translation from French to English of Femmes Pirates, Les écumeuses des mers (Pirate Women, / Opportunistes of the sea), by Marie-Éve Sténuit (Éditions du Trésor 2015). In addition to the presenting the translation of the introduction and first chapter of this book, I will discuss some of the challenges and difficulties that surfaced during the translation process. Author Marie-Éve Sténuit is a Belgian art historian and underwater archaeologist. In this work she features a collection of historical narratives about pirate women from around the world and throughout history. The first chapter is the story of Alfhild de Gotland and her crew. It traces her life from her modest upbringing as a young princess to her adulthood adventures as a violent Viking pirate, exploring what led her to trade her life as princess of Gotland for a life on the high seas.

#72
Title: Einstein's Greatest Theory
Author: Daniel Agar
Faculty sponsor: James Alsup
Affiliation: Physics, University of Michigan-Flint

Abstract: The goal of this presentation is to give an intuition-based introduction to the fundamental concepts of Einstein's Theory of General Relativity. It will begin with a brief introduction to the postulates of Special Relativity and how they laid the foundation for the formalization of the equivalence principle. Following this will be examples of physical consequences which arose from the equivalence principle, namely, gravitational time dilation, and gravitational deflection of light. After this a mathematically-lite description of the geometry of spacetime will be introduced and lead us to the important concept of geodesics.

#73
Title: Gender Differences Involving Serotonin Receptors in Type I Diabetic Rats
Author: Marisa Cervantes
Faculty sponsor: Amy Banes-Berceli
Affiliation: Biological Sciences, Oakland University

Abstract: Diabetes mellitus is an important topic of research. In Type I and Type II diabetes vascular and renal dysfunction are some of the negative impacts observed in diabetic patients. Vascular dysfunction contributes to high blood pressure, atherosclerosis, kidney disease, and renal failure. Data shows in male diabetic rodent models increases in the plasma levels of serotonin (5-HT). Previous data in male Japanese patients also demonstrated that inhibition of 5-HT2A receptors reduced proteinuria observed
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in diabetic patients. This study did not examine the expression levels of 5-HT receptors in the tissues and whether these were different in males and females. Therefore, we hypothesized that increased levels 5-HT receptors may be the cause of the vascular damage observed in diabetics; elevated levels of 5-HT and 5-HT receptors may lead to increased vasoconstriction, a symptom that can be detrimental to vascular and kidney function over time. We used male and female Sprague-Dawley rats (300-325g) and made them diabetic with Streptozotocin. At 14 and 28 days post-onset of diabetes we euthanized the animals, harvested tissues and blood vessels for Western blot and myograph analysis. These data clearly show altered expression of 5-HT receptor during the development of diabetes and clear sex differences as well.

#74
Title: Characterization of the Effects of Zerumbone in Human Renal Cell Carcinoma (RCC) on the activation of the Janus Kinase Pathway
Author: Zachary Walker
Faculty sponsor: Amy Banes-Berceli
Affiliation: Biological Sciences, Oakland University

Abstract: In the United States, Renal Cell Carcinoma (RCC) accounts for 9 out of 10 cases of kidney cancer. 13,860 people are estimated to die from RCC in 2016 due to poor response to chemotherapy drugs. Approximately 33% of the patients present with metastatic disease and of those initially treated by surgical resection 40–50% will develop recurrent metastatic disease. RCC responds poorly to current chemotherapy and radiation treatment options. Development of new therapies is limited because the molecular mechanisms of RCC and the chemoresistance are poorly understood. However, we and others have shown that alterations in the levels of the Janus Kinase (JAK2) and Signal transducers of activators of transcription (STAT) pathway may be involved as it has been implicated in invasiveness and cell survival in RCC cell lines. We hypothesize that altered activation of the JAK/STAT/SHP-1 pathway contributes to development of RCC and the chemoresistance observed. To test this hypothesis we used the RCC cell line (ATCC) and treated for 24, and 48 hrs with the JAK2 inhibitor AG490 to directly inhibit JAK2 and with zerumbone, an inducer of SHP-1 activity, which will indirectly decrease JAK2 phosphorylation and activation.

#75
Title: A Sentimentalist Account of Cognitive Neuroscience and Ethics
Author: Jonathon Abdal
Faculty sponsor: John Halpin
Affiliation: Philosophy, Oakland University

Abstract: There is much discussion on ethical decision making and more recently on ethical decision making, given some recently discovered truths in cognitive neuroscience. A Humean account of metaphysics and ethics seems to push forth a position that ethical positions are real insomuch as they are not natural ideas due mostly to the brain supporting social interactions that seem necessary to a person’s capabilities and rationality. Since ethics is not obviously observable, the scope of this paper is on mental decision making because that is the observable aspect to ethical decisions. Normative value-based decisions correlate to descriptive facts about brain processes. The presence of mirror neurons and the neuron’s potentials (readiness and action) are a solid foundation for explaining a person’s action in an ethical manner. While this may seem like an anti-realist position in metaethics as it reduces one’s actions to her biological construction, this position is aimed to help to push forth the ethical theories of sentimentalism from David Hume and Adam Smith. Ethics is reliant on evolving brain states from stimuli
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we receive from the external world. For this reason, ethics is an evolutionary tool of a collective of
minds (being society) that motivates action.

#76
Title: Do Graduated Driver’s License Programs Reduce Teenage Drivers Accident Rates?
Author: Timothy Vesper
Faculty sponsor: Amelia Biehl
Affiliation: Economics, University of Michigan-Flint

Abstract: Graduated driver’s license programs have been implemented in a number of states in an
attempt to reduce the number of teenage drivers involved in fatal automobile crashes. Typically these
laws involve a period of supervised driving with another licensed driver followed by a period of driving
with restricted privileges until a certain age is reached by the teenage driver. The restrictions in place
vary between states. Using a dataset comprised of individual crash records from six states over multiple
years and a difference-in-difference approach we evaluate the impact of various restrictions on teen
driver crash rates. While several papers have examined the impact of graduated driver’s license
program on fatal crashes, much less attention has been paid to the effect of these programs on non-
fatal crashes. Fatal and non-fatal crashes represent a significant economic cost to the United States,
estimated by the National Highway Transportation Safety Administration to total $242 billion for crashes
that occurred in 2010. We find a small reduction in the number of crashes associated with the
implementation of graduated driver’s license laws.

#77
Title: Detection of Iron-rich Protein Binding to Tau by Electrochemical Impedance Spectroscopy
Author: Anna Jahshan
Faculty sponsor: Sanela Martic
Affiliation: Department of Chemistry, Oakland University

Abstract: High concentration of metal ions in the brain have been linked to reactive oxygen species
(ROS) production as a major biochemical pathway of neurodegeneration in Alzheimer’s disease (AD).
Interactions between neuronal peptides and proteins with metal ions may be contributing to AD. Tau, a
neuronal protein, gets hyperphosphorylated and aggregated producing tangles leading to AD [1]. High
levels of iron ions have been detected in AD brains. However, the iron ion coordination to tau and its
role in ROS production has been largely unexplored. Interactions between iron-rich proteins, ferritin and
transferrin, with tau have not been fully understood. Interactions between the full-length tau protein
(tau441) with the iron-rich proteins were investigated to evaluate protein-protein interactions. We
report on the electrochemical detection of ferritin and transferrin protein binding to Tau-Au film. This
was achieved by using electrochemical impedance spectroscopy (EIS) as a function of protein
concentration and solution pH. The role of tau protein orientation on ferritin or transferrin binding was
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#78
Title: M-STEP: Wayne County Teacher Perspectives of the New State Assessment
Author: Frankie Sluschewski
Faculty sponsors: Joseph Musial, Ellen Vorenkamp
Affiliation: Psychology, University of Michigan-Dearborn

Abstract: A brief, anonymous and confidential survey was administered by the Wayne County Regional Service Agency, which is Michigan’s largest Intermediate School District, in order to assess the perceptions of school personnel involved with the administration of the newly adopted state assessment: The Michigan Student Test of Educational Progress or M-STEP. Wayne County is home to 290,000 public school children who were required to be assessed in the spring of 2015. The new M-STEP could be taken on-line or by paper and pencil. A total of n= 716 school personnel had completed the survey which consisted of Likert-type rating items and several open-ended items. The responders noted witnessing approximately 50% of students having demonstrated some form of test anxiety and 56% of test takers had experienced some form of technical difficulty. Yet, 62% of students appeared to be prepared to take the test and 62% appeared to be engaged in the test. The M-STEP is the first state assessment that could have more than one correct answer. There were a wide-range of open-ended responses that should raise concern for anyone involved with interpreting the testing results. The specific use of the M-STEP results are discussed.

#79
Title: Benefits of an Art Therapy Based Mental Health Intervention Within a Preschool Classroom
Author: Cheyne Jarnol
Faculty sponsor: Cynthia Sifonis Sally Tardella
Affiliation: Psychology, Oakland University

Abstract: Mental wellness ought to be promoted within preschool classrooms, with the effective implementation of evidence-based interventions (Forman, 2015; Fox, Dunlap, Hemmeter, Joseph, & Strain, 2003). Group Art Therapy (GAT) is a specific intervention which is effective with young children. GAT based sessions were implemented in a preschool classroom and the outcomes of various approaches were analyzed. Preschool children ages two and three participated in 18 Group Art Sessions over four weeks. Three separate group conditions were compared; children creating individual projects, children collaborating on shared-goal projects, and partners working together to create a shared-goal project. Behavior observation sheets were created to measure outcomes, which contained subscales of various protective factors, some adapted from subscales of HighScope’s Preschool Child Observation Record assessment (2003). Positive behaviors occurred during the Group Art Sessions that promote specific protective factors. Negative behaviors also occurred, which were then resolved within the sessions and resulted in higher levels of positive behaviors than in sessions without a prevalence of negative behaviors. Based on these results, it can be expected that Group Art Sessions conducted in a preschool classroom should result in negative behavior management, and the promotion of positive behaviors for all the children participating.
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#80
Title: Culture of “hook up” Social Networks and Usefulness in HIV Prevention Among Males Who Have Sex With Males
Author: Antione Martin
Faculty sponsors: Deidre Verdun, Shan Parker
Affiliation: Public Health and Health Sciences, University of Michigan-Flint

Abstract: This presentation highlights areas for future research, share lessons learned, and strategies for incorporating online outreach in existing HIV prevention efforts. How to effectively incorporate social media has been a hot topic in recent years. Using funds to support HIV prevention for Males who have sex with Males (MSM) Health Delivery Inc. (HDI), a Federally Qualified Health Center, has developed best practice and lessons learned regarding this trend in prevention outreach. When comparing trends in testing and seropositivity rates 4 years prior to implementing online-outreach to 4 years of incorporating online outreach for the population of interest there is notable improvement. After introducing online outreach the HIV seropositivity increased by 54% as did identified risk behaviors. While the number of actual test preformed decreased just under 4%, the increase findings suggest those tested while conducting online outreach were at highest risk. During the time period of online outreach African American/Black clientele almost doubled. In that same time period 14% of the clients tested were referred from family or friends indicating an increased reach within client’s social networks. Online outreach strategies include social networking sites like Facebook, Twitter, Instagram, Video sharing sites like YouTube, Location based services like Grindr and JACK’D.

#81
Title: A translation of "La Politique du Rire"
Author: Ian Lancaster
Faculty sponsors: Dikka Berven, Robby Stewart
Affiliation: College of Arts and Sciences, Oakland University

Abstract: Laughter is a complex phenomenon. Every culture expresses humor. Laughter is nearly as deeply rooted in existence as food and shelter. However, what is considered humorous in one culture is not necessarily humorous in another. The horrific terrorist attack on January 7th, 2015 at the leftist journal Charlie Hebdo, in which 11 journalists and illustrators were killed was provoked by a humorist’s portrayal of the prophet Mohammed. Subsequent to this attack a collection of essays entitled politique du rire (Champ Vallon, 2015) was published by a group of professors and doctorate students from the Sorbonne in order to analyze and understand how laughter is a political tool, and to explore how humor has evolved over the last 500 years. The proposed research project is a translation of this volume of essays. In an age of globalization and planetary conflict it is essential to understand and identify the differences between and the east and the west that engenders such violence, and to learn how we may work to establish a more harmonious international environment. France has a long tradition of caricature humor, and recent events represent a challenge to the French culture and the concept of freedom of the press.
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#82
Title: Overwintering Habits of Juvenile Blanding’s Turtles (Emydoidea blandingii) at Shiawassee National Wildlife Refuge, Saginaw, MI, USA
Authors: Melissa Szymanski, Mallorey Smith, Sasha Davis, William Gibala
Faculty sponsor: Teresa Yoder-Nowak
Affiliation: Biology, University of Michigan-Flint

Abstract: Blanding’s Turtles are freshwater turtles with one of the most northern ranges spanning across Northeast and Midwest North America. They are a species of special concern in the state of Michigan, listed as threatened or endangered throughout the rest of their geographic range. Two year old Blanding’s Turtles that were headstarted by the Detroit Zoological Society are part of a continuing conservation project with Shiawassee National Wildlife Refuge in Saginaw, MI. The goal is to increase population abundance in the refuge. An understanding of the overwintering sites and thermoregulation patterns of Blanding’s Turtles can be utilized for management planning. Blanding’s Turtles move shorter distances in the winter and remain in the same water body when ice covered. Twenty four Headstarted Blanding’s Turtles were tracked throughout the winter months using radio telemetry; habitat and environmental conditions were recorded. Thermochron iButton data loggers where epoxied to six of the turtles to record carapace temperatures and a temperature pole was set up to record water temperature at varying depths from surface to substrate. Habitat factors and thermoregulation patterns were analyzed to further understand overwintering habits of juvenile Blanding’s Turtles and aid in conservation management.

#83
Title: Thermoregulation in Juvenile Blanding’s Turtles (Emydoidea blandingii) at Shiawassee National Wildlife Refuge, Saginaw MI, USA.
Authors: Melissa Szymanski, Mallorey Smith, Sasha Davis, William Gibala, Morgan Warda, Jessica Taylor, Krista Bergman-Hughes
Faculty sponsor: Teresa Yoder-Nowak
Affiliation: Biology, University of Michigan-Flint

Abstract: Blanding’s Turtles are freshwater turtles with a range spanning across Northeast and Midwest North America. They are a species of special concern in the state of Michigan and listed as threatened or endangered throughout the most of their geographic range. One and a half year old Blanding’s Turtles that were headstarted by the Detroit Zoological Society are part of an ongoing conservation project with Shiawassee National Wildlife Refuge in Saginaw, MI. The goal is to bolster population abundance in the refuge. One important factor to consider while making conservation and management plans for turtles is thermoregulation, as it affects many physiological processes. Thermochron iButton data loggers were epoxied to the carapaces of eight Blanding’s Turtles to record temperature at equal intervals before being released at the refuge. In addition, Thermochron iButtons were used to record water temperature at varying water depths from substrate to surface in the pool where turtles were released. Data from 2014 and 2015 will be presented on the preferred temperature ranges and basking tendencies of the juvenile Blanding’s Turtles. This research will help to provide information on thermoregulation patterns for this understudied age class to aid in future conservation and management efforts.
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#84
Title: design and development of manual transmission system
Author: Kenneth O'Brien, Yang Zhou
Faculty sponsor: Quamrul Mazumder
Affiliation: Computer Science, Engineering, and Physics, University of Michigan-Flint

Abstract: The objective of this project was to design, develop, manufacture and test a five-speed transmission system that could be used for teaching and modeling in engineering classrooms. The gearbox was designed with several clear plastic viewing panels to observe the operation of the system. Furthermore, the components were designed for visual demonstration while running at lower speeds. Finally, a flywheel was added to the gearbox to measure rotational speeds. Most of the gearbox components were designed and manufactured using a 3D printer and computer aided design software. Material properties were verified using a tensile tester. The prototype assembly that was tested has met design specifications and required performances.

#85
Title: Characterization of a Red-pigmented Bacterium from Water Celery
Author: Wai Chun Hohmann
Faculty sponsor: Jerry Sanders
Affiliation: Biology, University of Michigan-Flint

Abstract: Paenibacillus have been traditionally described as being gram positive, spore forming, non-pigmented bacilli. A new species of Paenibacillus, P. adherans was initially isolated from Water Celery, Vallisneria americana (V. americana) or tape grass and was selected for being sensitive to chelated copper algaecides. One obvious feature of the isolate was the production of a pink pigment. This research describes the isolation and characterization of the pigment from this unique bacterial species.

#86
Title: Optimism & Satisfaction in Romantic Relationships
Author: Kayla McIntire
Faculty sponsor: Marianne McGrath
Affiliation: Psychology, University of Michigan-Flint

Abstract: This study examined optimism and satisfaction in romantic relationships. It was hypothesized that optimism will be positively related to satisfaction in romantic relationships. Previous studies on optimism and relationship satisfaction lack a diverse sample and a variety in the durations of the relationships. For this study, participants completed a survey involving items from the Couples Satisfaction Index (CSI) and Life Orientation Test-Revised (LOT-R). Correlational analyses indicate no significant differences exist in the satisfaction in romantic relationships based on an individual’s optimism. Further research on optimism and romantic relationships is encouraged.
#87
Title: Belongingness and Subjective Well-Being Considering Conformity and Perceived Stigmatization
Author: Alicia Latimer
Faculty sponsor: Marianne McGrath
Affiliation: Psychology, University of Michigan-Flint

Abstract: Current research shows evidence that gender-nonconforming men and women may be targets of peer stigmatization and victimization throughout middle childhood and young adulthood. This perceived stigmatization of gender-atypical individuals is negatively correlated with subjective well-being. There is, however, little research that takes into account the effect of belongingness moderating stigmatization as it affects well-being. High felt belongingness may lessen the effects of stigmatization and raise well-being of gender-atypical individuals. Participants completed an on-line questionnaire measuring conformity to gender norms, perceived stigmatization, felt belongingness, and subjective well-being. Point-biserial correlations were used to measure any association between scores of subjective well-being and higher levels of the subject variables of gender nonconformity and stigmatization with higher or lower belongingness. Independent t-tests were used to compare the means of subjective well-being between higher levels of gender nonconformity and stigmatization with higher or lower belongingness. The research found continued support of a negative correlation between reported gender nonconformity and subjective well-being, and stigmatization and well-being, but also of a positive correlation between belongingness and well-being. Results also showed evidence that belongingness may positively affect well-being among gender-nonconforming, stigmatized individuals. This relationship may have implications in therapy, schools, and in social and community psychology at large.

#88
Title: Burning of the Declaration of Independence: Radical Social Work
Author: David Courter
Faculty sponsor: Otrude Moyo
Affiliation: Social Work, University of Michigan-Flint

Abstract: “The Burning of the Declaration of Independence” is an opinion paper asserting that “We the People” be emancipated as the voice of all Americans, not just the wealthy. This is coupled with a call to social work professionals as revolutionaries on local, national and global battlegrounds in the fight for social justice and basic human rights. It also presents the institution of policy brutality as the hammer of this oppression. Both current and historical social injustices are sited while challenging the social work profession to be radical by returning to their activist roots. Social work professionals are urged to embody solutions to social injustice, not merely continue as its custodians by being more concerned with credibility and career, and less concerned with injustice. Ultimately, it is time to unite those groups who have been marginalized in our society into one roaring voice for social change.

#89
Title: Development of a Tugger Cart for Powder Coating Process
Author: Sandeep Solanki
Faculty sponsor: Quamrul Mazumdar
Affiliation: Computer Science, Engineering, and Physics, University of Michigan-Flint

Abstract: There are many hazards associated with the industrial powder coating process. Powder coating operations require the use of curing ovens that operate at high temperatures to allow the paint
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to cure to the parts. Along with these high temperatures come risks for the employees that operate the oven. The objective of this project is to develop a system to eliminate the need for an employee to enter the curing oven to retrieve the curing racks. This system will reduce employee’s exposure to unnecessary hazards. An initial attempt to reduce employee’s exposure to hazard was to allow the oven to cool slightly before retrieving the racks. This current system wastes large amounts of energy due to the repeated heating and cooling of the oven. By having a remotely controlled vehicle enter the oven there would be no need to cool the oven, which would increase productivity while reducing employee risk. The cart is capable of traveling underneath the racks which it would then latch onto the rack. The cart would proceed to move the rack through the powder coating process and then pull the rack out of the oven. It will be able to pull the racks into or out of the oven depending on the operation being done. The most important performance criteria that must be met are safety, reliability, ease of operation, and long battery life. When the prototype is complete, plans to test the flexibility and ease of use are crucial to the final product. The cart is designed in such a manner to be modular so that it is more versatile and can be used in more than one specific application. Additional tests are to be conducted to ensure that radio communication will not be lost between the cart and the operator so as to ensure reliability of the system. The tugger cart design is to be safe, easy to use, and flexible in order to stay in operation. This cart is specifically designed for the custom powder coating racks in use at the Android Industries-Flint campus. The proposed cart will be cost effective compared to currently available systems on the market or automated conveyor systems. This cart is specifically designed for the custom powder coating racks in use at the Android Industries-Flint campus.

#90
Title: The Western: Genre Semiology, Transcendence, and Transition
Author: Matthew Pickard
Faculty sponsor: Kyle Edwards
Affiliation: Cinema Studies, Oakland University

Abstract: The Western has existed since 1903 when Edwin S. Porter’s film The Great Train Robbery launched a genre that would eventually transcend borders and define a nation’s past, as well as imperceptibly be deconstructed and reconstructed by film scholars. Seemingly, the Western genre has not changed since 1903. However, the Western saw a new wave of its own in the 1950s and 1960s. Widely considered an American film genre during its inception, the Western saw a re-imagination in the 1950s and 1960s. Starting with the films of John Ford in the 1950s through the Spaghetti Westerns of Sergio Leone in the 1960s during the Vietnam War, a change occurred in technique, plot dynamics, characters, and aesthetics. As the world changed once again after September 11th 2001, so too did the Western, especially in terms of Otherings. Westerns themselves contain subtext about both national and world politics and thus constitute a transnational genre. This essay attempts to decode and analyze the Westerns of John Ford and Sergio Leone and put them into a broader context of the world after World War II, the Vietnam War, and September 11, 2001.

#91
Title: Inspection Robot
Author: Skyler Shippy
Faculty sponsor: Quamrul Mazumder
Affiliation: Computer Science, Engineering, and Physics, University of Michigan-Flint

Abstract: A robot was developed to inspection of remotely accessed spaces. The application includes inspection of confined spaces such as heating, ventilation and air conditioning ducts, sewer pipes, etc. A
standard four wheel drive train was used for ease in adaptability. / •COTS (Commercial off the Shelf) embedded controller board (Raspberry Pi) was used for controlling the robot. / •A standard webcams, with 4 infrared sensors and 2 ultrasonic sensors were used to provide visual information and spatial locations to the microcontroller.

#92
Title: Millennial Apathy Theory
Author: Matthew Pickard
Faculty sponsor: Kyle Edwards
Affiliation: Cinema Studies, Oakland University

Abstract: In observing and interviewing Millennials, I have discovered an apathetic nature to technological advances that has begun to affect the generation that grew up during the burgeoning Internet years. This is especially true when it comes to how Millennials view films from the past. The pervasive nature of motion and special effects in contemporary films and video games have created, as Tom Gunning calls it, a stimulus shield. This shield is impenetrable to the aesthetic onslaught which affects Millennials on a day to day, hour to hour basis. No longer can Millennials sit through a film without glancing at their phone. No longer can they watch a film from the past and not judge it based on the technological advances from modern films. Couple the overabundance of screens with the hyper action of video games and Millennials have become severely apathetic to the capabilities of technology as well as films from the past (one Millennial interviewed said films from five years ago are too old). The speed and modernity of Hollywood blockbusters, the pervasion of a multitude of screens, as well as action packed video games, continually build up Millennials stimulus shields. Has the motion picture become extinct? If it has, then Millennials wouldn’t care on iota.

#93
Title: Improved Quality of Life for Parkinson’s Patients after Community-Based Bicycling Program
Author: Kadey Eggert
Faculty sponsor: Nathaniel Miller
Affiliation: Psychology, University of Michigan-Flint

Abstract: Parkinson’s disease (PD) is a neurodegenerative disorder that affects both motor (e.g., tremor, slowed movement, muscle rigidity, walking, balance and speech) and non-motor (e.g., cognition, fatigue) behavior. Medications are the primary treatment for PD symptoms, but the beneficial effects wane over time. Exercise has been suggested as an adjunctive therapy to help mitigate these symptoms. Pedaling for Parkinson’s™ (PFP) is a community-based exercise program specifically for individuals with PD. PFP participants ride a stationary bicycle for one hour, three times a week, while maintaining certain exercise goals (60-80% maximum heart rate and 80-90 pedal revolutions/minute). To test the effect of PFP on the participants’ quality of life, we administered the Parkinson’s Disease Questionnaire (PDQ-39) at baseline and again after four- and eight-weeks of participation in PFP. The PDQ is a self-reported quality of life scale for PD. After 8 weeks of PFP participation, participants reported a 20% improvement in quality of life ratings. These findings suggest that PFP has the potential to be a healthy and cost-effective method for improving quality of life for individuals with PD.
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#94
Title: Inside the Judicial Mind: Cognitive Bias and Heuristics
Author: Machhadie Assi
Faculty sponsor: Donald Shelton
Affiliation: Criminal Justice Studies, University of Michigan-Dearborn

Abstract: Changes to status quo require resistance and time. Human beings have tendency to avoid actions that require resistance. Cognitive consistency theorists viewed consistency as a necessary means for survival: “we want to have our cognitive food prepared so that if it is easy to swallow, to assimilate; Cognitive consistency is homeostatic, and once the system is driven to a balanced state the forces of change recede: Does this theory explain the reasons behind judicial trends in preferring stability over truth? I will examine implicit bias in three different aspects: First, Bias in the Judiciary Domestic Violence cases: is domestic violence an equal opportunity problem? If so, where does the judiciary bias come from, if there is any? Second, I will adopt a study done about The Global War on Terror which reveals to us that relying on “precedent” applies to all kinds of legal reasoning, not just on judicial opinions. The third scope in my research will be: Implicit Bias and Law Enforcement, and the danger of polarizing group. Studies explained that when human make a tilted decisions, it is less likely due to a random way adhered by cognitive bias; perhaps, it is most likely due to systematic skews.

#95
Title: Spewing Black Holes I: Observational Constraints on Velocity and Structure
Author: Adam Crutch
Faculty sponsor: Rajib Ganguly
Affiliation: Computer Science, Engineering, and Physics, University of Michigan-Flint

Abstract: Accretion onto supermassive black holes that lie at the heart of galaxies is now recognized as a vital phase in describing galaxy evolution, growth, and star formation efficiency. Such a system is called a quasar, of which roughly 60\% are observed to have gas flowing outward with a variety of velocities and velocity dispersions. The most extreme observed form of these outflows appears in the ultraviolet spectrum of 15-20\% of objects. As a follow up to a previous study, we have assembled a sample of nearly 11000 quasars, of which roughly 4400 appear to show outflows. Our goals for this study are: (1) To measure the properties of the outflows detected in absorption (velocity, velocity dispersion, equivalent width, ionization); (2) To temper our visual inspection schemes with a more automated, measurement-driven scheme; (3) To characterize the incidence of outflows as a function of quasar physical property (black hole mass, accretion rate, etc.); and (4) To investigate in an empirical way the complex dependencies between the properties of the outflow, and the physical properties of the system.

#96
Title: Serving the Underserved - The Role of the Physician Assistant
Author: Deanna Patrosso
Faculty sponsor: Suzanne Selig
Affiliation: Public Health and Health Sciences, University of Michigan-Flint

Abstract: Voted by Forbes Magazine as the #1 career in America, the physician assistant career was built upon "serving the underserved" populations. The first physician assistant program was established at Duke University in 1965, however research shows that the physician assistant role can be found within history dating back hundreds of years. This medical profession has taken the country by storm; physician
assistants are able to help thousands of patients every year, and have the skills and experience to truly make a difference in the world today. Potentially, physician assistants may be the resolving factor to health care shortages occurring today in developing nations. Presented by two pre-PA students who have traveled and "served the underserved" in underdeveloped nations, this project intricately looks at the history, modern-day progress, and potential ability of the physician assistant globally.

#97
Title: Developing an innovative environment using Web 2.0 technologies
Author: Housam Eldin Mohamed
Faculty sponsor: Charlotte Tang
Affiliation: Computer Science, Engineering and Physics, University of Michigan-Flint

Abstract: Collaborative work has become an essential part of education, especially in higher education. Thus, educational institutions are making increasing use of web-based technologies to support communication between students, and between students and their instructors. We conducted a survey study with students and faculty in an urban university in Midwestern U.S. Many students indicated that it was challenging to work in group projects as existing communication and collaboration tools failed to support their group work. In particular, they found many of these tools inflexible and difficult to use. They indicated a strong preference for tools that are simple and customizable to meet their needs. Finally, we propose a set of design recommendations for collaborative tools to support academic group work.

#98
Title: Religious Belief: The Influence of Interhemispheric Interaction
Author: Akrum Eidelsafy
Faculty sponsor: Jeannette Stein
Affiliation: Psychology, University of Michigan-Flint

Abstract: The purpose of the current study was to determine if religiosity (defined as commitment, activity, and dedication within your suggested beliefs) is influenced by interhemispheric interaction (IHI). IHI refers to the extent to which the right and left hemispheres of the brain communicate. Prior research indicates that degree of interaction is related to information processing. Those with less interaction tend to ruminate. Attention is focused on rehashing or dwelling on distress. Those with greater interaction tend to reflect. They are curious and update beliefs more readily (Niebauer, 2004). A growing body of research suggests that those with greater interaction demonstrate cognitive flexibility across a wide range of situations while less interaction is associated with rigidity in thought (e.g.; Stein, 2012; Prichard & Christman, 2012; Christman, Sottam & Jasper, 2009). Thus, differences in IHI may affect how one perceives and understands religious information. It was expected that participants with less IHI would demonstrate stronger views and rigidity of religious beliefs compared to those with greater IHI. Participants completed an assessment of IHI (as measured by handedness) and the Five Dimension Scale of Religiosity. Results will be discussed.
#99
Title: Adamant Arches
Authors: Shuyu Yang, Bruce Edler, Daniel Bloink
Faculty sponsor: Mazumder Quamrul
Affiliation: Computer Science, Engineering and Physics, University of Michigan-Flint

Abstract: With additive three dimensional design and manufacturing, small scale customization is more accessible than ever. This provides an opportunity to improve the overall efficiency of the manufacturing process for many customizable goods, as well as the average consumer’s way of life. One application of three-dimensional additive manufacturing is the problem of foot care. Many people suffer from foot related pain or problems. With only 3D computer aided design and 3D printer access, podiatric ergonomics can be radically changed by the use of parameterized design to tailor flexible, 3D printed insoles to a customer’s foot.

#100
Title: CFD and Experimental Investigation of Erosion in S-Bend
Author: Kristen Rusinek
Faculty sponsor: Quamrul Mazumder
Affiliation: Computer Science, Engineering, and Physics, University of Michigan-Flint

Abstract: Solid particle erosion is a process that removes material from the inner surface of flow handling devices by repeated impact of entrained particles in the flow. Erosion is a leading cause of unpredicted and premature failure within different industrial equipment such as pumps, pipes, valves and fittings. Understanding the magnitude and location of erosion in the geometry is essential to the prevention of failure. S-bend geometry is used to redirect flows in automotive, chemical processing, oil, and food handling industries. An investigation was conducted using both CFD and experimentation methods to identify the location of maximum erosion. Three different s-bend geometries with 12.7 mm inside diameter and r/D ratios of 1.5, 2.5, and 3.5 were used in the current study. Investigations were performed at three different water velocities each with six different particle sizes ranging from 50 to 300 microns. Due to multiple constraints associated with the test loop, one s-bend geometry was used in the experiment with 12.7 mm inside diameter and an r/D ratio of 1.5. CFD analysis and experimental results showed reasonably good agreement.

#101
Title: The Developmental Benefits of Playing Video Games for Children and Adolescents
Author: Faiha Osman
Faculty sponsor: Jason Jarvis
Affiliation: Psychology, University of Michigan-Flint

Abstract: The National Purchase Diary Group (2011) reported that 91% of children between the ages of 2 and 17 play video games (as cited in Granic, I., Lobel, A., & Engels, R., 2014). Most of the research on the impact of playing video games on children and adolescents has largely been focused on the negative effects, including the “harm related to aggression, addiction, and depression” (Granic, I., et. al., 2014, para. 2) and the lack of physical activity while playing; however, it is important to take a balanced perspective that also takes into account the positive effects of playing video games. Research indicates that video games greatly enhance cognitive skills, including spatial ability, problem-solving skills and strategy use, and creativity. Additionally, video games develop a positive motivational style for children and adolescents. Furthermore, video games have emotional benefits for children and adolescents in
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that they elicit positive emotions and teach them emotion regulation strategies. Finally, video games build social skills and encourage pro-social behavior in children and adolescents. Despite the long-held negative view of video games as mindless, aggressive forms of entertainment, they have increasingly been proven to provide worthwhile benefits for the development of children and adolescents.

#102
Title: Keyboard Playing Robot
Author: shuyu yang
Faculty sponsor: Ming Li
Affiliation: Computer Science, Engineering and Physics, University of Michigan-Flint

Abstract: Programming by Matlab, the software will be able to analyze the music notation. And control the robot arm to perform it. The robot arm is designed to be accurate about the beat and pause. This will provide a valuable educational program, as well as musical performance. The program will be able to locate the position of the keys. After calculating the distance and time, the robot can make sure the accuracy of the performance. With Lego Mindstorms robotic platform. The robot is customizable for different situation.

#103
Title: Effect of a Community-Based Exercise Intervention on Fine Motor Dexterity in Parkinson’s Disease
Author: Holly Tipp
Faculty sponsor: Nathaniel Miller
Affiliation: Psychology, University of Michigan-Flint

Abstract: Parkinson’s Disease (PD) is a neurodegenerative disorder characterized by slowed movement and tremor. These symptoms interfere with many fine motor movements necessary to complete activities of daily living (e.g., dressing and eating). While antiparkinsonian medications are used to treat these symptoms of PD, their effectiveness is limited and decreases over time. Adjunctive therapies, such as exercise, have been proposed to mitigate symptoms. The current study tested the effectiveness of Pedaling for Parkinson’s™ (PFP™) for improving fine motor dexterity in PD. PFP is a community-based exercise program where individuals with PD ride stationary bicycles while maintaining specific exercise goals (60-80% of their maximum heart rate and 80-90 pedal revolutions/minute). We recruited 12 PFP riders to complete the Purdue Pegboard task (PPT), which assesses fine motor dexterity. Participants completed the task with both their hands, most- and least- affected by PD, separately, at baseline and after four and eight weeks of PFP. We found significant improvements in fine motor dexterity for participants’ least-affected hand (p=0.05), but not their most-affected hand (p=0.25) after 8 weeks of PFP. These findings suggest that PFP is an effective community-based exercise intervention for at least improving fine motor dexterity of the least-affected hand in PD.

#105
Title: Utilizing Software Models to Manage Cloud Infrastructures at Runtime
Author: Moesha Woods
Faculty sponsor: Mark Allison
Affiliation: Computer Science, Engineering, and Physics, University of Michigan-Flint

Abstract: This proposal seeks to investigate the use of interpreted domain specific models to manage the cloud infrastructure requirements. Our position is that interpreted domain-specific models may be leveraged to support live migrations across infrastructure as a service clouds. This work addresses the
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problem of vendor lock-in due to the heterogeneous nature of cloud service provider interfaces. The proposed approach would include the development of a metamodel specifically designed. To accomplish this we will introduce policy constructs capable of extending the range of behaviors the modeling language is capable of describing. We will outline preliminary work and that which is necessary to address our research problem of formulating an DSM equipped with semantic extensions capable of effectively managing Infrastructure-as-a-Service (IaaS) clouds.

#106
Title: Effectiveness of an Exercise Intervention for Gait Symptoms in Parkinson’s Disease
Author: Matthew Davis
Faculty sponsor: Nathaniel Miller
Affiliation: Psychology, University of Michigan-Flint

Abstract: Parkinson’s Disease (PD) is a neurodegenerative disorder characterized by tremor and slow, shuffling gait (walking). Medications are primarily used to mitigate PD motor symptoms, but gait is less responsive to medications. Exercise is one adjunctive therapy proposed to mitigate gait symptoms. This study determined whether participating in Pedaling for Parkinson’s™ (PFP) improved PD gait. PFP is a community-based exercise intervention where patients ride a stationary bicycle vigorously (60-80% maximum heart rate and 80-90 pedal revolutions/minute) for one hour, 3 times a week. We tested participants at baseline and after 4- and 8-weeks of PFP participation. A GAITRITE® mat recorded and analyzed gait parameters after 4 passes on the mat at participants’ preferred walking pace. We found no changes in gait after 8 weeks of PFP participation (p=.60). However, subgrouping participants as either tremor dominant (TD) or postural instability/gait dominant (PIGD) motor symptoms showed subgroup differences in gait responsiveness to PFP. Significant interactions between subgroups and time in PFP (ps<.05) revealed improvements in walking speed and stride length for participants with TD symptoms, but not those with PIGD symptoms. These findings suggest that PFP may be effective for improving gait for individuals with TD PD, but not PIGD PD.

#107
Title: Spewing Black Holes II: From Observations to Theory
Author: Hamael Changezi
Faculty sponsor: Rajib Ganguly
Affiliation: Computer Science, Engineering and Physics, University of Michigan-Flint

Abstract: Accretion onto supermassive black holes that lie at the heart of galaxies is now recognized as a vital phase in describing galaxy evolution, growth, and star formation efficiency. Such a system is called a quasar, of which roughly 60\% are observed to have gas flowing outward with a variety of velocities and velocity dispersions. In an accompanying contribution, we present a the assembly and measurements of a sample of nearly 11000 quasars, of which roughly 4400 appear to show outflows. The measurements include the velocity, velocity dispersion, and ionization of the outflows, as well as estimations of the black holes mass, and the accretion rate. Here, we consider the constraints that the measurements place on theoretical structure of outflows, including both geometry, drivers of velocity, and the velocity field of the outflow around the black hole.
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#108
Title: Spewing Black Holes III: A Theoretical Structure
Author: Paul Manion
Faculty sponsor: Rajib Ganguly
Affiliation: Computer Science, Engineering and Physics, University of Michigan-Flint

Abstract: Accretion onto supermassive black holes that lie at the heart of galaxies is now recognized as a vital phase in describing galaxy evolution, growth, and star formation efficiency. Such a system is called a quasar, of which roughly 60\% are observed to have gas flowing outward. In accompanying presentations, we take an empirical approach to studying outflows, assembling a sample of objects, making measurements of the outflows, and physical parameters of the system, and consider relationships therein. Here, we take a complementary approach -- considering the detailed physics that drive the system, and what physical parameters are likely necessary. These parameters are both physical and fundamental to the system, such as the black hole mass. Other parameters are related more to the environment in which the system resides. Still others have nothing to do with the system, but rather the way in which we view them.

#109
Title: Spewing Black Holes IV: From Theory to Observations
Author: Justin Wisby
Faculty sponsor: Rajib Ganguly
Affiliation: Computer Science, Engineering and Physics, University of Michigan-Flint

Abstract: Accretion onto supermassive black holes that lie at the heart of galaxies is now recognized as a vital phase in describing galaxy evolution, growth, and star formation efficiency. Such a system is called a quasar, of which roughly 60\% are observed to have gas flowing outward. In accompanying presentations, we have outlined a general consideration of theoretical parameters that likely govern the system, and how we observe the system. Here, we present a methodology and a progress report on our efforts to compute numerically a full system. The considerations presented here include: how we choose the parameters of the system, and other parameters related to creating a predicted observation of the system; the numerical steps that are required to go from fundamental parameters to a fully specified outflow structure; and how we take a fully computed structure to a synthesis of a spectrum similar to our empirical studies. The goal of this methodology is to predict the spectra of the entire populations of quasars which we can then compare against our other efforts.

#110
Title: Spewing Black Holes V: A Theoretical Twist on Observing Outflows
Author: Daniel Agar
Faculty sponsor: Rajib Ganguly
Affiliation: Computer Science, Engineering and Physics, University of Michigan-Flint

Abstract: Accretion onto supermassive black holes that lie at the heart of galaxies is now recognized as a vital phase in describing galaxy evolution, growth, and star formation efficiency. Such a system is called a quasar, of which roughly 60\% are observed to have gas flowing outward. In accompanying presentations, we have discussed both empirical and theoretical progress toward using spectral observations to understanding the structure of quasars. Here, we use the framework yielded by our spectral synthesis approach to testing the methods by which observers use to measure structural details of the outflows in individual objects. Specifically, we discuss how observation with high spectral
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resolution can be used to separate the amount of light from the quasar accretion disk received at the telescope into two components: light that has passed through the outflowing gas, light that "goes around" the outflowing gas. The former also provides a measurement of how much light is incident on the outflowing gas. The ratio of this to the total amount of light is taken to be the geometric fraction of the accretion disk that is occulted by the outflow. We challenge this interpretation.

#111
Title: Greening and Grassroots
Author: Paris Freeman
Faculty sponsor: Paul Draus
Affiliation: Sociology, University of Michigan-Dearborn

Abstract: In this presentation, we discuss two contrasting situations of community engagement. One situation involves an urban neighborhood dealing with air quality and land contamination issues, the other a historic neighborhood plagued by blight and physical disorder. Using social theories of space and place, we describe both neighborhoods, each dealing with issues perpetuated by decades of social inequality. But what happens when a conversation starts about change in these neighborhoods? We use sociological research methods to examine the thoughts feelings of residents concerning the changes that have taken place in their neighborhoods and their fears, hopes and expectations for the future. In one neighborhood, we conducted surveys and interviewed neighbors living in the vicinity of a community garden project carried out by an urban sociology class in the summer of 2015. In the other neighborhood, we conducted a focus group with residents concerning environmental degradation by industry and local remediation efforts. In both cases, we examine how residents’ memories of their past communities inform their views of the environment and present-day challenges. Finally, we consider how providing a platform of inclusion and engagement disarms fear and suspicion.

#112
Title: Effect of a Community-Based Exercise Intervention on Bradykinesia in Parkinson’s Disease.
Author: Robert Moore
Faculty sponsor: Nathaniel Miller
Affiliation: Psychology, University of Michigan-Flint

Abstract: Parkinson’s disease (PD) is a neurodegenerative disorder marked by bradykinesia (slow movement). While antiparkinsonian medications are relatively effective for improving bradykinesia, their effectiveness wanes over time. Adjunctive therapies, such as exercise, have been suggested as an additional method to mitigate symptoms of PD. Pedaling for Parkinson’s ™ (PFP) is a community-based, hour-long exercise intervention in which participants ride a stationary bicycle at an intense pace (60-80% maximum heart rate; 80-90 pedal revolutions/minute) three times a week. To determine the effectiveness of PFP on bradykinesia, participants tapped the index finger of both hands independently, at baseline, and after four- and eight-weeks of PFP participation. Tapping speed was measured by both the amount of time between finger taps (inter-tap interval; ITI) during a sequence of 31 taps, and variability within the tapping sequence. We found marginal improvements in both tapping speed and variability (ps= <.06); participants tapped faster and with less variability after 8 weeks of participation in PFP. These findings suggest that PFP may be an effective intervention to improve bradykinesia in PD.
#113
Title: Relationship Between Music Preference and Personality in a College Student Sample
Author: Lindsey Hieber
Faculty sponsor: Marianne McGrath
Affiliation: Psychology, University of Michigan-Flint

Abstract: The purpose of this study was to examine if music genre preference, personality, and individual differences are correlated. This study used a 73 question survey with questions from the Big Five Inventory-44 (John, 1999) and the Depression, Anxiety, Stress Scale-21 (Lovibond & Lovibond, 1995). It was predicted that individuals who preferred rock music would score higher in the openness for experience section of the survey as well as high on the depressive thoughts scale. On the other hand, it was predicted that those who indicated they liked pop music would score high in extroversion. This study had 324 participants; 235 (72.5%) identified as females and 80 (24.7%) participants identified as males. The mean age for the sample was 26.06 years; the youngest participants being 18 and the oldest being 67 years old. 270 (83.3%) participants reported listening to music daily. The music genres examined in this study were rock, pop, rap/hip-hop, country, and R&B/soul. ANOVA for the total conscientiousness score and music genre preference was statistically significant (F(15, 323) = 1.048, p = .405). The data collected implies that there is a relationship between music genre preference, certain personality traits, and individual differences.

#114
Title: A Gene Expression Vector to Observe the Activity of the Hsp70 Promoter in Hyperglycemia
Author: Andrew Larke
Faculty sponsor: Frank Miskevich
Affiliation: Biology, University of Michigan-Flint

Abstract: Diabetic retinopathy is the leading cause of blindness in individuals aged twenty to sixty-four years and is a result of pericyte death under hyperglycemic conditions. Pericytes are contractile cells that surround the endothelial cells of small blood vessels. Increased permeability of these vessels, along with changes to the blood-retinal barrier, leads to retinopathy. 70 kilodalton heat shock protein (Hsp70) mitigates damage occurring in stressed cells in a variety of ways, such as assisting in the refolding or disposal of damaged proteins. Restoration of low Hsp70 levels has been shown to improve tolerance of hyperglycemic conditions, therefore, Hsp70 may play a role in preventing pericyte apoptosis. To observe expression of Hsp70 in mammalian retinal cells under different glucose levels, a unique plasmid was constructed using the Gateway cloning system. mCherry-H2A expresses an observable red fluorescence when translated and was used as a reporter gene under the control of Hsp70 promoter. The desired genetic elements were inserted into the Tol2-A destination vector with a recombination reaction using LR Clonase enzymes. We will transfect the reporter product into AR19 cells and use red fluorescence to measure the induction of Hsp70 under various glucose concentrations and cellular stress conditions.

#115
Title: Defining Greed
Author: Abdelmajid Jondy
Faculty sponsor: Roberto Rinaldi
Affiliation: Psychology, University of Michigan-Flint

Abstract: Greed has often been a topic of dismay, and is synonymous with corruption and unfaithfulness. To disprove this concept, this article looks to achieve in redefining greed in today's
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society. Greed will be compared with life satisfaction in aims of attributing greed as a means of reaching high life satisfaction. Furthermore, greed will be compared to ethical-idealism to be able to observe participants’ ethical standards. A literature review of the topics will be provided in this study, as well as the methods used to obtain the results. This study, in the future, will be conducted through a survey at the University of Michigan-Flint, which consists of 8,547 students. All three variables listed above each have their own measure. Greed will be tested through the Dispositional Greed Scale (DGS), life satisfaction will be tested through the Satisfaction With Life Scale (SWLS), and ethical-idealism will be tested through the Ethics Position Questionnaire (EPQ).

#116
Title: What Your Messy Personal Space May Say About You: Perceivers’ Office-Based Personality Judgments
Author: Sarah Dyszlewski, Brandon Taylor
Faculty sponsor: Terrence Horgan
Affiliation: Psychology, University of Michigan-Flint

Abstract: Our studies extend Gosling’s (2002) findings on environmental cues to personality. In Study 1, two offices were created that varied the extent to which the same office items were organized, clean, and neat in appearance. Participants were assigned to sit alone in either the more (office A) or less (office B) organized and clean office. Afterwards, participants guessed the traits (the Big 5) of the person who worked in the office they were in. Participants’ perceived the office B worker to be lower in conscientiousness; their other Big 5 ratings did not differ by office type. For Study 2, office B’s level of disorganization and untidiness was increased. Relative to those assigned to office A, office B participants saw the worker as less conscientious and agreeable and more neurotic. Results suggest that perceivers may infer a host of negative traits about an owner of a messy, disorganized personal space.

#117
Title: The Response of Carbon Fiber Composite to Out of Plane Loading
Authors: Nicholas Parks, Cody Cousins, Wesley Goodwin
Faculty sponsor: Olanrewaju Aluko
Affiliation: Computer Science, Engineering and Physics, University of Michigan-Flint

Abstract: Due to its high strength to weight ratio, carbon fiber is being evaluated for numerous applications. In this mathematical analysis it has been shown how a cross-ply carbon fiber laminate reacts to an out of plane loading with fixed-free boundary conditions.

#118
Title: HPV Knowledge in a College Student Sample: The Effects of Gender and Vaccination Status
Author: Lindsey Hieber
Faculty sponsor: Thomas Wrobel
Affiliation: Psychology, University of Michigan-Flint

Abstract: Human Papillomavirus (HPV) is a sexually transmitted infection (STI) that can lead to genital warts and a variety of cancers. Since 2006, HPV vaccinations under the names Gardasil or Cervarix were made available to teens that were not yet sexually active. A survey was conducted to assess the degree of knowledge of HPV and frequency of HPV vaccination in college students. 558 participants (369
female, and 189 male) were recruited from introductory psychology classes and the survey was administered anonymously online. Of the 547 participants, 262 (47.5%) were vaccinated and 290 (52.5%) were not. Questions consisted of eight demographic questions, four regarding current health, and 34 questions from prior studies regarding knowledge of HPV transmission, effects, and treatment (Reiter, 2010; Daley, 2010). On the ANOVA on total HPV knowledge score there was significant effect for gender, F(1, 547) = 6.16, p = .013, with females (M = 20.68, SD = 4.24) scoring higher than males (M = 19.74, SD = 4.56, ). Results are discussed in terms of the understanding the experiences of the vaccinated and unvaccinated students and the relative emphasis on HPV vaccinations for females although equally important for males.

#119
Title: Drawing Robot using Lego Mindstorms
Author: Zihao Yan
Faculty sponsor: Ming Li
Affiliation: Computer Science, Engineering and Physics, University of Michigan-Flint

Abstract: The project utilizes Lego Mindstorms NXT to develop a robot which can draw portraits. The design of Lego robot is to simulate the elbow, wrist and hand of a human being and draw as a human being. Pictures have been taken and converted to black and white portraits which the robot will then draw on paper. Matlab has been utilized to process images and control the robot arm to complete the drawing.

#120
Title: Your City’s Risky Finances: Why use Interest Rate Swaps
Author: Brad Mikus
Faculty sponsor: Min Jung Kang Seyed Mehdian
Affiliation: School of Management, University of Michigan-Flint

Abstract: There’s no doubt the City of Detroit took financial risks to plug its depleted balance sheet in the 2000’s. With one particular risk, known as an Interest Rate Swap, the city borrowed $1.6 billion to shore up its pension funds. Like people’s variable rate mortgages, these swaps worked until they didn’t. This presentation sheds the complexity around swaps and briefly explains the costs and benefits. It then shows that nearly 5% of U.S. cities with populations greater than 25,000 people used Detroit-like swaps. Last, I test the prevailing theories of the reasons organizations use swaps against empirical evidence from the 100 largest U.S. cities during 2003 – 2009. I hope you will walk away from this talk with more questions about your city’s finances than before.

#121
Title: Facial Perception as a Risk Avoidance Technique
Author: Kayla Bennett
Faculty sponsor: William McKibbin
Affiliation: Psychology, University of Michigan-Flint

Abstract: This study is being conducted in order to see if women have a special facial perception ability that allows them to detect danger. This will be done by showing participants a series of male photos, and participants will rate their likelihood to associate with that male. These photos will depict the faces of males who have been convicted of different degrees of crime. If my hypothesis is correct, female participants, on average, will be less likely than male participants to associate with the males in the
photographs. Additionally, females will be less likely to associate with the males convicted of severe crimes, and will demonstrate an association gradient in relation to the severity of the crime committed. Participants will consist of University of Michigan-Flint students, and the study will be conducted using Qualtrics. A 2x3 ANOVA will be performed, with a significant relationship being a p-value of less than .05.

#122
Title: Political Conservatism and Affect
Author: Dustin Burns
Faculty sponsor: William McKibbin
Affiliation: Psychology, University of Michigan-Flint

Abstract: This study examined the correlation between Political Conservatism and Affect using student volunteers from the University of Michigan - Flint Campus. Much research has been done with regards to the unique physiology and psychology of Conservatives. However, no research exists that investigates the relationship between affect and a two part definition of conservatism. Such a definition embraces the possibility for a person to be socially conservative, economically conservative, or both. Performing such research will help further develop what we know about the unique psychology of those who identify as conservative. For this study, participants were asked to complete two self report surveys designed to measure each of these variables. The results of these surveys were then subjected to statistical analysis to discover possible correlations. The hypothesis is that political conservatism will have a positive correlation with positive affect.

#123
Title: When did my childhood become an art exhibit?!
Author: Hannah Freedman
Faculty sponsor: Charlotte Tang
Affiliation: Computer Science, Engineering, and Physics, University of Michigan-Flint

Abstract: Social media has dramatically altered the ways in which people share experiences. Through on-site observations during the Art of Video Games exhibition in a local museum and an examination of related Instagram postings, we found that visitors try to re-experience their memories and to collectively reminisce about their past gaming. We also discuss the implications of our findings as ways to encourage visitor engagement and to build a natural storehouse of knowledge.

#124
Title: "Schedule change really disrupts a lot of things!": Never-Ending Physician Scheduling in a Multi-Function Multi-Setting Practice
Author: Hannah Freedman
Faculty sponsor: Charlotte Tang
Affiliation: Computer Science, University of Michigan-Flint

Abstract: We conducted a field study in a nephrology practice that performs multiple functions in various distributed settings. The task of physician scheduling was done manually on paper by a single scheduler. Our study revealed challenges persistently encountered while using a variety of fragmented, transient paper artifacts. Any changes made to existing schedules can greatly impact other physicians’ schedules, clinical functions, patients, and the practice operation. Finally, we highlight several issues for
consideration in the design of a digital scheduling module that can meet the specific needs of distributed multi-function, multi-setting medical practices.

#128
Title: Serving the Underserved - The Role of the Physician Assistant
Author: Eljesa Vitija
Faculty sponsor: Suzanne Selig
Affiliation: Public Health and Health Sciences, University of Michigan-Flint

Abstract: Voted by Forbes Magazine as the #1 career in America, the physician assistant career was built upon "serving the underserved" populations. The first physician assistant program was established at Duke University in 1965, however research shows that the physician assistant role can be found within history dating back hundreds of years. This medical profession has taken the country by storm; physician assistants are able to help thousands of patients every year, and have the skills and experience to truly make a difference in the world today. Potentially, physician assistants may be the resolving factor to health care shortages occurring today in developing nations. Presented by two pre-PA students who have traveled and "served the underserved" in underdeveloped nations, this project intricately looks at the history, modern-day progress, and potential ability of the physician assistant globally.

#129
Title: An Analogue of the Median Voter Theorem in Approval Voting
Author: Ethan Bush
Faculty sponsor: Francis Su
Affiliation: Mathematics, University of Michigan-Flint

Abstract: The Median Voter Theorem is a well-known result in social choice theory for majority-rule elections. We develop an analogue in the context of approval voting. On a line, we consider voters to have preference sets that are intervals called approval sets and the approval winner is a point on the line that is contained in the most approval sets. We define median voter by considering the left and right end points of each voter's approval sets. We consider the case where approval sets are equal length. We show that if the pairwise agreement proportion is at least 3/4, then the median voter interval will contain the approval winner. We also prove that under an alternate geometric condition, the median voter interval will contain the approval winner, and investigate variants of this result. Our results show there is a way to define conditions where the median voter interval will contain the approval winner thus there exists an analogue of the Median Voter Theorem in approval voting. This talk is based on my joint REU project with Kyle Duke of James Madison University and Miles Stevens of Morehouse College.
Thank You!

The MOM Planning Committee

**University of Michigan-Flint**
Andre Louis, Research Program Manager

**University of Michigan-Dearborn**
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Susan Gedert, Alumni & Special Projects Coordinator

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